Noble Works Australia Pty Ltd
Demolition Work Plan

Hindmarsh Construction Australia Pty Ltd (Client)

Specific to Project:
Sutherland Hospital
Date of commencement: 15/11/2021

Amendment Record

Date	Description	Prepared by	Reviewed by	Approved by
10/11/2021	First Draft	Lucas Kowe	Blain Knox	
15/11/2021	Amendments	Lucas Kowe	Blain Knox	
22/11/2021	Amendments	Arron Knox	Blain Knox	
24/11/2021	Amendments	Lucas Kowe	Blain Knox	
24/11/2021	Amendments	Lucas Kowe	Blain Knox	
25/11/2021	Amendments	Lucas Kowe	Blain Knox	

Distribution Record

Copy	Issued to	Controlled Copy		PCBU Signature	Recipient Signature	Issue Date
		Y	**N**			
1	Reg Struwig		N			
2						
3						
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6						
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Introduction

This Noble Works Australia Pty Ltd Demolition Work Plan (DWP) includes processes and procedures in place for the Demolition and Removal of Trees, Porte-cochère, Car Park, Fins and Spandrels The DWP will be available for inspection by all relevant persons, including visitors, direct relevant workers, Health and Safety Representatives, principal contractors, relevant workers of principal contractors and subcontractors and government appointed inspectors.

This DWP will be monitored and updated as required by Noble Works Australia Pty Ltd and the most current copy will be kept on site for the duration of the project.

All persons should read and understand this DWP before starting work on this project. Noble Works Australia Pty Ltd requires all relevant persons to adhere to the contents of the DWP. Failure to comply with the requirements of the DWP will lead to disciplinary action, which may include possible dismissal, loss of employment and legal action for severe breaches.

Note: This Noble Works Australia Pty Ltd DWP has been designed to provide the necessary practices and procedures for the Demolition and Removal of Trees, Porte-cochère, Car Park, Fins and Spandrels at Sutherland Hospital. It should be read in conjunction with Australian Standard: AS 2601-2001 The demolition of structures and Noble Works Australia Pty Ltd's Occupational Health, Safety and Environmental Management Plan.

Document Control

The DWP is a controlled document. All unauthorised copies either electronic or printed are considered uncontrolled copies. Copyholders and the version distributed to them will be recorded in the Distribution Record.

Management Commitment and Approval

The DWP has been approved and endorsed by Senior Management of the Principal Contractor. The signature of the authorised person in the footer Reg Struwig demonstrates a commitment to the procedures and tools contained within the DWP.

Senior Management Sign-off: _____ Date: ___/___/___

References

Indicate applicable references relevant to the project below:

☒	AS 2601-2001 The demolition of structures
☐	Work Health & Safety Act (Australian Capital Territory) 2011
☐	Work Health & Safety Act (Australian Capital Territory) 2011
☒	Work Health & Safety Act 2011 (Inc. amendments Act No. 93, 2017)
☒	Work Health & Safety Regulation (NSW) 2017
☒	Work Health & Safety (National Uniform Legislation) Act 2011
☒	Work Health & Safety (National Uniform Legislation) Regulations 2011
☐	Work Health & Safety Act (QLD) 2011
☐	Work Health & Safety Regulations (QLD) 2011
☐	Work Health & Safety Act (South Australia) 2012
☐	Work Health & Safety Regulations (South Australia) 2012
☐	Work Health & Safety Act (Tasmania) 2012
☐	Work Health & Safety Regulations (Tasmania) 2012
☐	*Occupational Health and Safety Act (Victoria) 2004*
☐	*Occupational Health and Safety Regulations (Victoria) 2007*
☐	Occupational Safety & Health Act (Western Australia) 1984
☐	Occupational Safety & Health Regulations (Western Australia)1996
☒	Australian Government (1999): *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*
☒	EPA NSW (1997): *Protection of the Environmental Operations Act 1997 (PEOA)*
☐	EPA South Australia (1993): *Environment Protection Act 1993*
☐	EPA Tasmania (2007): *Environmental Management and Pollution Control Amendment Act 2007*
☐	EPA Australian Capital Territory (1997): *Environment Protection Act 1997*
☐	EPA Western Australia (1986): *Environmental Protection Act 1986*
☐	QLD Department of Environment & Heritage Protection (1994): *Environment Protection Act 1994*
☐	Northern Territory EPA (1999): *Environment Protection and Biodiversity Conservation Act 1999*
☐	EPA Victoria (1970): *Environment Protection Act 1970*
☒	SafeWork Australia (2011): Code of Practice: *Demolition*
☒	SafeWork Australia (2011): Code of Practice: *How to Manage Work Health and Safety Risks*
☐	WorkSafe Victoria (1991): Code of Practice No. 14: Demolition

Definitions

Access and egress: Refer to the rate and means of entry and exit to a workplace.

Act: A law (legislation) passed and enacted by a state or territory parliament, also commonly known as an Act of Parliament. Acts are the principal pieces of law covering, in this case, health and safety in the workplace.

Code of Practice (COP) A Code of Practice is a practical guide to achieve the standards of health and safety required under the model Work Health and Safety (WHS) Act and model WHS Regulations. Codes of Practice provide duty holders with guidance on effective ways to manage work health and safety risks. *(Overview: Safe Work Australia: Code of Practice, Legislative Fact Sheet Series.)*

Barricade: Any barrier that obstructs passage.

Controlled document or record: Any document for which distribution and status are to be kept current by the issuer to ensure that authorised holders or users have available the most up to date version.

Demolition: The act or process of destroying a structure or man-made building or item of plant.

Exclusion zone: An area into which entry is forbidden.

Hazard: A hazard is a source or a situation with a potential for harm in terms of human injury or illness, damage to property, damage to the environment, or a combination of these.

Hazardous materials: Any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Hoarding: A temporary fence or barrier around the perimeter of a construction site.

Manifest: A manifest is different from a register. A manifest is a written summary of specific types of dangerous goods that are used, handled or stored at a workplace.

Plant: includes -

a. Any machinery, equipment, appliance, implement and tool; and
b. Any component of any of those things; and
c. Anything fitted, connected or related to any of those things.

Regulations: Regulations are law that is created under the authority of an Act. Regulations are subordinate to an Act and are the secondary level of law covering, in this case, health and safety in the workplace.

Risk: Risk is a combination of the likelihood and consequences of any injury or harm occurring.

Spotter: Also, known as a Safety Observer which is a person who looks or observes a process to avoid potential incidents.

Structure: Mode of building.

Material/Safety Data Sheet (M/SDS): Information containing data regarding the properties and effects of a particular chemical that must be provided by the manufacturer, supplier or importer of the hazardous chemical/dangerous good. M/SDS must be current – within 5 years of the issue date and meet specific legislated format requirements.

Site Location

Site Organisation

- Access to each demolition zone will be via Kareena Road
- Access/egress: ☒ Barricades ☒ Signs ☒ Spotter ☐ Other? *(specify)*
- Work areas and any identified hazards will be barricaded and signposted to define the area and prevent access
- The materials processing area is located inside the site as shown in picture above
- The amenities will be maintained in a clean and hygienic manner throughout the course of the project
- Where the workplace adjoins public spaces (e.g. roads walkways etc.) public safety will be provided by installing hoarding. The hoarding will be signposted with 'Demolition' and 'Asbestos Removal' as applicable.
- When vehicles/plant are accessing/leaving the site, spotters will be in place to supervise the roadway.

Indicate hoarding type for this project.

☒ Security fencing ☐ Containment sheets ☐ Mesh

☐ Overhead protective structure ☐ Road Closures ☒ Exclusion zones

☐ Other?

Project Details

Contractor Details	
Noble Works Australia Pty Ltd	
Building/Business Address: 47 George St, Clyde NSW	
Contact Person: Blain Knox	
Phone: 1300 705 782	Email: blain@nobleworks.com.au
Mobile Phone Number: 0422 200 482	ABN: 52 133 963 032
Demolition Licence: AD212245	

Subcontractor Details

#:	Trade:	Company Name:	Contact:	Phone:
1	Asbestos Removal	Serve Group Pty Ltd	Wade Rogers	0420 978 737
2	Hygienist	Clearsafe Environmental Solutions Pty Ltd	Alex White	0447 494 101

Site – specific Details

Demolition task: Demolition and Removal of Trees, Porte-cochère, Car Park, Fins and Spandrels.

Address of site: Kareena Rd, Caringbah NSW 2229

Start Date: TBA	End date: TBA	Duration: TBA

Day	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Daily start times	7am-5pm	7am-5pm	7am-5pm	7am-5pm	7am-5pm	7am-1pm	N/A

Traffic management arrangements: The PC; Hindmarsh Construction Australia Pty Ltd has in place a Traffic Management Plan (TMP) to allow for the safe management of people and mobile plant within the workplace and interaction with the public.

Site Contact Details

Name of Site Contact: Robert Healy

Workplace Phone: -	Email: -
Location of Site Contact: On Site	Mobile: 0406 636 752

Obtain and attach to this DWP, as applicable:

- Drawings
- Site survey
- Plan of services
- Structural engineer report
- List of existing defects
- Hazardous Materials Registers (asbestos / lead etc.)
- Confirmation of vermin removal
- Evidence chemicals, volatile fuels and gases have been deactivated
- Drawings to include the location of underground essential services including:
  - electricity
  - drainage and sewerage
  - gas
  - communications cables (for example, telephone, radio and television relay lines)
  - water
  - hydraulic pressure mains
  - liquid fuel lines
  - lubrication systems
  - process lines (chemical, acid).

Structure Description

Provide a description of the proposed structure to be demolished. Include all features:

- Height above ground level
- Type of building – occupancy class, structural support system and principal materials of the structure e.g. brick

Three Storey Building with ConcreteSpandrel/Asbestos Finned Façade

4m Clad Concrete/Steel Ambulance Porte-cochère

Asphalt/Concrete Carpark

Summary of Site and Surrounding Structures

- Distance from surrounding structures
- Condition of surrounding structures

Attached to adjacent hospital buildings

Ambulance Station

Active Wards of Hospital

Emergency Management

- Adequate numbers of first aid trained staff are on site
- First aiders are trained and competent in managing injuries associated with demolition until emergency services arrive
- All rescue equipment is in good condition, available for use and in close proximity to the work site.
- Workers have access to:
  - First aid kit/supplies
  - M/SDS
  - Communication devices (check mobile phones will have service)
  - Suitable fire protection equipment.

Emergency evacuation assembly point: TBA	
Police / Fire / Ambulance - 000	***If mobile phone is out of range dial - 112***
First Aid Officer: Robert Healy	Contact Number: 0406 636 752
Qualification: Senior First Aid	Expiry date: 21 May 2023
☒ First Aid Kit	☒ Falls Rescue Equipment *(list items)* • Harness & Static Line
☒ Communication System	
☒ Fire Extinguisher	

Key personnel (24-hour contact)

Name/s	Email	Contact number
Robert Healy		**0406 636 752**
Blain Knox		**0406 636 752**
Arron Knox		**0400 371 225**

Nearby facilities/neighbours

Facilities/neighbours	Contact name/s	Email	Contact number
Residential (97, 99, & 103-109 Kareena Road)	TBA	TBA	TBA
	TBA	TBA	TBA
	TBA	TBA	TBA

Have fire and emergency authorities been notified of	☐ commencement date	☐ type of work	☐ likely hazards

Communication and Consultation

Noble Works Australia Pty Ltd will ensure effective communication and consultation with other Duty Holders, such as structure owner/s, neighbouring business holders, neighbouring homeowners, body corporates, contractors etc. affected by this project. All efforts will be made to identify hazards, consult with duty holders, cooperate and co-ordinate with duty holders to ensure health and safety for the duration of the project.

Other duty holders	Details
Local Residents	Via PC
Hospital Staff & Patients	Via PC (in line with hospital disruption notice process)

Monitoring and Inspections

The process of hazard identification, risk assessment and control is an on-going process and will be conducted in full consultation with relevant persons for the duration of the project.

Have arrangements been put in place to ensure safety on site and SWMS are being followed.

Indicate as applicable.

☒ Spot checks
☒ Adequate supervision
☒ Audits and Workplace Checklists
☒ Consultation, information and training
☒ Worker competency assessments.
☐ Other, *specify*

Notifiable Demolition Work

The Regulator will be notified at least 5 days before any of the following works commence.

Notification will be provided on the prescribed form and in the prescribed manner the intention of the company to undertake the following works:
Tick applicable

☒ Demolition of a load bearing structure, or a part of a structure, where the structure is greater than six (6) metres in height or,

☐ Demolition work involving the use of explosives or;

☐ Demolition work that involves load shifting machinery on a suspended floor.

(s142. *Work Health and Safety Regulations 2011)*

Has the regulator been notified? ☒ Yes ☐ No Date notified: **24/11/2021**

Noise / Vibration

Noble Works Australia Pty Ltd will conduct risk assessments and apply best practice techniques to eliminate or reduce the environmental impact of noise / vibration to the community, buildings and structures.

Proposed noise producing activities to be undertaken:

☒ Oxy cutting
☒ Shearing with excavators
☐ Rock hammering with excavators
☒ Loading trucks
☒ Plant Movement
☒ Crane work
☒ Power tools
☒ Concrete crusher

Hazard Identification

The process of hazard identification, risk assessment and control is an on-going process and will be conducted in full consultation with relevant persons for the duration of the project. Utilising consultative arrangements in place, Noble Works Australia Pty Ltd will identify all reasonably foreseeable hazards that may give risk for workers, contractors, and others such as visitors and members of the public. The following hazards have been identified as applicable to this project.

The following hazards have been identified as applicable to this work site.	✓ *Indicate applicable hazards and controls below:*
Identified Worksite Hazards	*Hazard Controls*
☒ Access & egress to site	Refer and adhere to PCs Traffic Management Plan
☒ Asbestos	Be aware of HazMat Register, engage professionals. Pause work on unexpected finds. Air Monitoring by subcontractor (clearsafe)
☐ Lead	
☐ Synthetic Mineral Fibre	
☐ Polychlorinated Biphenyls (PCBs)	
☐ Atmospheric contaminants	
☐ Confined spaces	
☒ Electrical (equipment and/or installations)	Existing mains to be disconnected by Electricians
☒ Falling objects	Exclusion zone under work zone
☒ Falls – on same level	Isolation & Harnesses with Static Line
☒ Falls – from one level to another	Isolation & Harnesses with Static Line
☒ Flammable and combustible substances	Treatment as in Hazardous Chemicals Register + SDS
☒ Hazard Manual Tasks	Toolbox talks and SWMS
☒ Lighting (Day / Night works)	Task Lighting provided by NWA
☒ Mobile Plant	Spotters and qualified operator(s)
☒ Noise	Follow advice/procedure of Primary Contractor
☒ Power tools	Follow advice/procedure of Primary Contractor
☒ Pressurised gas mains	Existing mains to be disconnected by Plumbers
☒ Chemical/fuel/refrigerant lines	Existing mains to be disconnected by HVAC/Mechanical/Plumbers

The following hazards have been identified as applicable to this work site.	✓ *Indicate applicable hazards and controls below:*
☒ Public	Care when entering/leaving site
☐ Shaft or trench	
☐ Temperature extremes	
☒ Utilities (underground/ overhead services)	Services to be identified prior to works + DBFYD
☐ Work near/over water	
☒ Work Outdoors	Some work is to be undertaken outside
☐ Young workers/Apprentices	
☐ Hazardous process (such as welding)	
☒ High Risk Construction Work	Work in area of powered mobile plant

Identified Environmental Hazards	
☒ Air quality	Dust from demolition works
☐ Bulk excavation/spoil	
☒ Construction waste disposal	All rubble/dust/structural is to be removed
☐ Contaminated soil/water	
☐ Dewatering/pump out	
☐ Habitats (protected flora/fauna)	
☐ Hazardous waste disposal / biological hazards	
☐ Heritage & Archaeology	
☒ Noise or vibration	The work is inherently noisy / vibration involved
☒ Noisy work (neighbourhood)	Neighboring buildings/houses may be affected
☒ Slurry or other discharges	Saw Cutting
☐ Spills of hazardous/toxic chemicals	
☒ Stormwater/sediment control	Buntings & Sand Bags
☒ Traffic & parking	Vehicles entering and exiting

Permits

Noble Works Australia Pty Ltd recognises the role of Work Permit System. Permits that will be issued will be but not limited to the following:

- Hot work (drilling, grinding, cutting)
- Working at height (above 2 m)
- Electrical power will be isolated prior to demolition commencing
- Welding
- Oxy cutting
- Excavation and Penetrations
- Hazardous Work Permit

Entry Permit/s completed and signed			☐ Yes	☐ No	☒ N/A
Hot Work Permit/s completed and signed			☒ Yes	☐ No	☐ N/A
Confined Space Permit/s completed and signed			☐ Yes	☐ No	☒ N/A
ELECTRICITY		**UNDERGROUND SERVICES**			
Energised	☒	Dial Before You Dig plan	☐ Yes	☒ No	☐ N/A
De - Energised	☐	Electrical Services	☐ Yes	☒ No	☐ N/A
Isolated	☐	Gas Services	☐ Yes	☒ No	☐ N/A
Locked Out & Tagged	☐	Water Services	☐ Yes	☒ No	☐ N/A
Permit No. (if applicable)		Communications	☐ Yes	☒ No	☐ N/A

N.B. Where applicable Hindmarsh Construction Australia Pty Ltd as the PC must provide and sign off on the applicable permits as identified above.

Hot Works Permits to be completed

Method of Demolition

This is a ☐ full demolition ☒ partial demolition (specify)

The method of demolition ☐ manual ☐ mechanical ☒ combination (indicate in the demolition sequence where each method is used.)

Demolition Sequence	WORKERS / WORK GROUP	*Tick as applicable demolition method*		
		Manual	Mechanical	N/A
Milestone 1				
1. SITE ESTABLISHMENT	PC	✓		
2. HOLD POINT – Disconnection of services in demolition area - Sign off PC/NWA Disconnection form	Electricians/Plumbers / PC			✓
3. REMOVAL OF TREES/VEGETATION - as per quote - Protect Trees as advised by PC - Pull larger trees over with machines - *If necessary, bring in arborist for largest tree(s)* - Chain saw into pieces to fit in bin	Operators/Demolition Workers	✓	✓	
4. DISASSEMBLY AND DISPOSAL OF PORTE-COCHÈRE - Remove Glazing by hand - Remove Cladding by hand - Disassemble Structural Steel by hand and lower with machine	Operators/Demolition Workers	✓	✓	
5. HOLD POINT – Hot Works Permit	PC	✓		
6. CUT AND REMOVE STRUCTURAL STEEL - Cut to size with Oxy-LPG torches - Remove from site	Demolition Workers	✓		

Demolition Sequence (cont)	WORKERS / WORK GROUP	*Tick as applicable demolition method*		
7. REMOVAL OF CONCRETE/ASPHALT CAR PARK - Road Saw to divide into removable sections - Hammer kerbs and concrete with Machine - Remove concrete/asphalt/Rebar with Bogies and Hook Bins	Demolition Workers	✓	✓	
8. REMOVAL OF ASBESTOS FINS (FAÇADE) - Isolate work area (exclusion zones). - Workers remove fins using EWP (Boom/Scissor Lift) - Lowered to ground with Crane. - Removal of suspected ACM eaves - Removed from site in Hook Bins *Please see Appendix for detailed methodology from Asbestos Subcontractor*	Asbestos Workers, Crane Operator & Dogman	✓	✓	
9. HOLD POINT - Hygienist to provide asbestos clearance certificate - Once eaves removed a Structural Engineer may need to be consulted if the method of fixing concrete spandrels is unclear/complex	Hygienist/ Structural Engineer(TBC)			✓
10. REMOVAL OF CONCRETE SPANDRELS - Workers remove fins using EWP (Boom/Scissor Lift) - Lowered to ground with Crane.	Operators/Demolition Workers	✓	✓	
Milestone 2				
1. SCAFFOLD & CHUTE – subject to agreement *(See option 3 on Milestone 2 site establishment pg 2)* - Window removed to create opening (as per site map above - Ticketed scaffold erected with chute for rubbish egress	Scaffold Workers, Demolition Workers	✓		
2. SET UP WORK ENVIRONMENT - Zipwall barriers with airlocks to be installed as required - Confirm with PC installation and amount of negative air fans to install	Demolition Workers, PC	✓		

Demolition Sequence (cont)	WORKERS / WORK GROUP	*Tick as applicable demolition method*		
3. HOLD POINT – Disconnection of services in demolition area - Sign off NWA Disconnection form	Electricians/Plumbers / PC			✓
4. HOLD POINT - Ensure sign off of the scaffold by Scaffolding contractor and engineer - Ensure Engineer provides advice on slab load limits and advice on materials handling re avoid point loading heavy waste before proceeding	Structural Engineer, Scaffolder			✓
5. REMOVAL OF ASBESTOS DOORS & DUCTS - Isolate work area. - Any ACM bagged and removed from site as per code of practice	Asbestos Workers	✓	✓	
6. HOLD POINT - Hygienist to provide asbestos clearance certificate	Hygienist	✓		
7. INTERNAL STRIP OUT BY HAND/MACHINE - Demolition workers to strip out loose fittings, joinery and floor coverings according to NWA Standard Operating procedure for Demolition. Using rubbish chute to transport waste to bins outside - Demolition Robot (DXR140) to demolish/pulverise internal brickwork and Mini Skid-Steer (S70) to assist load out (Please see Risk Assessments/Technical Extracts for specifications).	Operators/Demolition Workers	✓	✓	
8. SET AND SEAL REDUNDANT SERVICE PENETRATIONS - Removal of any remaining pipes - Patch exposed core holes - Seal with waterproof membrane patch	Demolition Workers	✓		
9. MECHANICAL PLANT DISASSEMBLY AND REMOVAL - Ticketed workers in harnesses to unfix plant to be removed - Crane used to move material to ground level	Demolition Workers, Crane Operator & Dogman	✓	✓	

Demolition Sequence (cont)	WORKERS / WORK GROUP	*Tick as applicable demolition method*		
10. SCAFFOLD REMOVAL - Scaffold/ Chute disassembled and removed from site	Scaffold Workers, Demolition Workers	✓		
11. LOADING OUT Bins and tipper trucks will access the site from Kareena Road. With the use of traffic controllers (Provided by PC) as to ensure safe access Machines will load bins and tipper trucks Water suppression will be used while loading to ensure no dust is escaping the site. Controls to ensure workers are clear of operating plant inc radio communication	Operators/Demolition Workers/ Traffic Controllers	✓	✓	
12. CLEAN UP Daily House cleaning After works are finished a final clean will be performed throughout work area to ensure all loose debris has been removed.	Demolition Workers	✓		

Plant and Equipment

Manual demolition equipment list.	Mechanical demolition powered mobile plant list.
Jack Hammers	EWP
Pry Bars	DXR 140 Demolition Robot
Impact Drivers	Excavators
Reciprocating Saws	Bobcat (S70 Skid-Steer/T190 Posi Track)
Grinders	Tipper Trucks
	Hook Bin Trucks

Handling and/or removal of hazardous materials

Noble Works Australia Pty Ltd will determine if any materials / items handled or any processes undertaken at the site involve hazardous materials such as lead, asbestos etc., including the generation of hazardous fumes or dust and / or the accumulation of materials or items containing hazardous materials.

Hazardous materials will be removed by a licensed contractor and disposed of at an approved facility.

Hazardous Chemicals Register at the workplace	☒ Yes	☐ No	☐ N/A
Hazardous Chemicals Manifest at the workplace	☒ Yes	☐ No	☐ N/A
Material/Safety Data Sheets at the workplace	☒ Yes	☐ No	☐ N/A

Salvage & Disposal Program

Noble Works Australia Pty Ltd is committed to successfully conserving resources and is aware of the importance of waste management. All demolition material will be sorted into waste streams to maximize recycling efficiency.

1. Asbestos disposed	6.
2. Waste disposed	7.
3. Metals recycled	8.
4. Concrete & Brick recycled	9.
5.	10.

Waste Stream Management Register

Waste Stream	Amount/Disposal Method
Asbestos	Disposal
Metals	Scrapped/Recycled
Heavy	Recycled
Plastics	Recycled where possible
Mixed Waste	Disposal

Appendix –

Principal Contractor Documentation:
Hindmarsh Construction - Site Establishment - Milestone 1
Hindmarsh Construction - Site Establishment - Milestone 2

Subcontractor Documentation:
Serve Group - Asbestos Control Plan
Serve Group - Bonded Asbestos Removal Methodology
Serve Group - SWMS - Bonded Asbestos
Serve Group - SWMS - Working at Heights
Serve Group - SWMS – Plant and Equipment
Serve Group – Safework Notification
ClearSafe - Capability

Risk Assessments:

Bobcat E50

Bobcat S70

Husqvarna DXR140

Technical Extracts:

Bobcat E50

Bobcat S70

Husqvarna DXR140

Notifications:

Notification of Intent to do Demolition Work

Licences:

NWA Demolition Licence

SWMS:

Stage 1 – Demolition Works

Hazardous Chemicals:

NWA Hazardous Chemicals + SDSs

Forms:

Disconnection/Isolation of Services Status Report Form

Hospital Vehicles only to enter at existing Access Road

ACCESS ROAD

EXISTING GIVEWAY LINE TO BE REMOVED

EXISTING PEDESTRIAN CROSSING LINEMARKING TO BE ADJUSTED AS REQUIRED TO SUIT NEW PRAM RAMP

"A" Class Ply Hoarding

Hospital Pedestrians only to enter at existing Access Road

EXISTING COVERED AMBULANCE BAYS

EMERGENCY DEPARTMENT

Concrete Barriers (People/Plant separation)

6x3 M/F toilet

6x3 Meeting

6x3 Toilet

12x3 office

12x3 office

CARPARK 3

RETAIN EXISTING CARPARK 3 LINEMARKING AS REQUIRED

PPE Free Zone

6x3 Change

12x3 Lunch

COVID testing shed

Covered Waiting area

12x3 Lunch

Remove Kerb Island

Crane Location for structural steel install DN required for each setup

"A" Class Ply Hoarding

97.179 m

64.874 m

B class hoarding to Maintain fire egress from 2 x fire egress doors

Hospital Fire egress to be maintainede

REFER TO LANDSCAPE ARCHITECT DRAWINGS AND SPECIFICATION FOR PAVING DETAIL

Loading Platform L3 and L4

Milestone 1 Building Line

Section

NOT IN SCOPE

Road based hard stand

Material Handling Max Height Under is approx 3.000m

Exit door stays un-obstructed

Existing Awning

Ply Hoarding

AMBULANCE STATION

Access to COVID clinic

Approx 3m clearance under building for material handling

Section

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by: NATHAN PEARCE

Issue.	Description	Date	Drawn	Approved
C	ISSUE FOR 100% DESIGN DEVELOPMENT	04.02.21	DW	CR
B	ISSUE FOR FINAL DRAFT DD	21.01.21	DW	CR
A	ISSUE FOR DRAFT 100% DETAIL DESIGN	27.11.20	DK	CR

North

Key Plan

Client: NSW Government Health Infrastructure
LEVEL 8, 77 PACIFIC HWY
NORTH SYDNEY, NSW 2060
www.hinfra.health.nsw.gov.au

Architect: HDR
LEVEL 1, 110 WALKER STREET, NORTH SYDNEY, NSW 2060
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ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: TH TH MA KING CAR

Milestone 2

Hospital Vehicles only to enter at existing Access Road

Hospital Pedestrians only to enter at existing Access Road

ACCESS ROAD

EXISTING GIVEWAY LINE TO BE REMOVED

"A" Class Ply Hoarding

Concrete Barriers (People/Plant separation)

Temporary Hospital Amenities

EXISTING COVERED AMBULANCE BAYS

EMERGENCY DEPARTMENT

Male:
- 50m² Change Area with benches
- 3 WCs
- 3 urinals
- 3 Showers
- 63 Quarter Lockers

Female
- 65m² change area with benches
- 3WCs
- 3 Showers
- 91 Quarter Lockers

12x3 office
12x3 office
6x3 Meeting
6x3 Toilet
6x3 M/F toilet

CARPARK 3

RETAIN EXISTING CARPARK 3 LINEMARKING AS REQUIRED

PPE Free Zone

12x3 Hospital Change Room
12x3 Hospital Change Room
12x3 Hospital Change Room
12x3 Hospital Change Room

Existing Carpark

Gate 1 Pedestrian Access

12x3 Lunch
6x3 Change
12x3 Lunch

Remove Kerb Island

Ply Hoarding

Stairs and Lift operational

Hospital Staff and Patients

Hospital Fire egress to be maintainede

REFER TO LANDSCAPE ARCHITECT DRAWINGS AND SPECIFICATION FOR PAVING DETAIL

Ply Hoarding

MRI Access

Milestone 1 Building Line

EXISTING HOSPITAL

Gate 2 Truck Access

Worker Access to Level 3

Construction Zone

Construction Zone

Hospital Staff and Patients

MRI

Construction Zone

KAREENA ROAD

Worker Access to Level 3

Road based hard stand

Material Handling Max Height Under is approx 3.000m

5.961 m

3.287 m

Access to Radius IPU Under existing awning and builders platform.

Ply Hoarding

Access to Level 3 above both people and material

Hoist

Ply Hoarding

AMBULANCE STATION

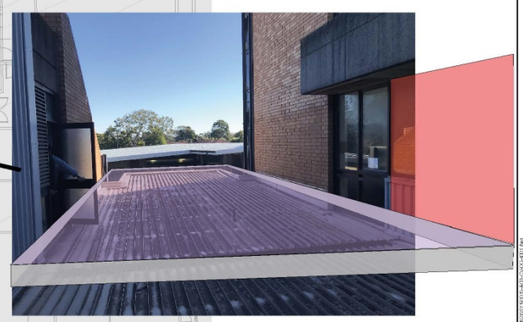
Worker Access to Level 3

Platform to extend to pick up set of temp stairs

Access to Radius IPU Under existing awning and builders platform.

Structural steel loading platform serves L3, 4t rated, sits above existing roof and awning

Ambulance Access Remains the same as Milestone 1



NOT FOR CONSTRUCTION

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by: NATHAN PEARCE

Issue	Description	Date	Drawn	Approved
C	ISSUE FOR 100% DESIGN DEVELOPMENT	04.02.21	DW	CR
B	ISSUE FOR FINAL DRAFT DD	21.01.21	DW	CR
A	ISSUE FOR DRAFT 100% DETAIL DESIGN	27.11.20	DK	CR

North

Key Plan

Client: NSW Government Health Infrastructure
LEVEL 8, 77 PACIFIC HWY
NORTH SYDNEY, NSW 2060
www.hinfra.health.nsw.gov.au

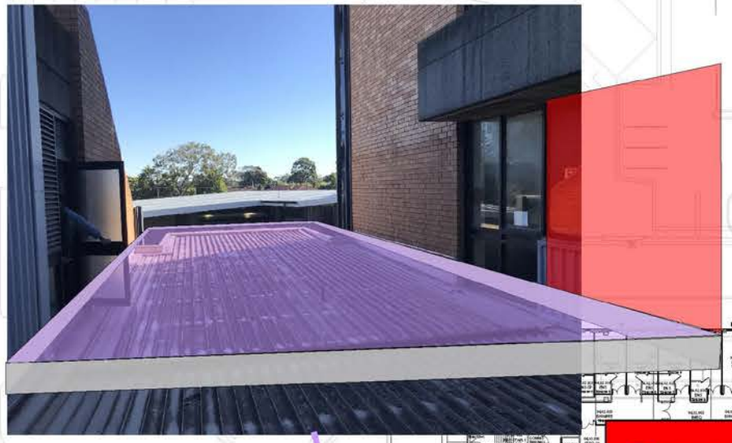
Architect: HDR
LEVEL 1, 110 WALKER STREET, NORTH SYDNEY, NSW 2060
+61 2 9956 2666 | hdrinc.com
HDR Pty. Limited ABN 76 158 075 220 trading as HDR

ACOR Consultants Pty Ltd
Suite 2, Level 1, 33 Herbert Street
St Leonards NSW 2065
T +61 2 9438 5098
ACOR CONSULTANTS ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: THE SUTHERLAND HOSPITAL OPERATING THEATRE UPGRADE PROJECT - MAIN BUILDING WORKS
KINGSWAY & KAREENA RD,
CARINGBAH NSW 2229

Drawing Title: PAVEMENT PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
DK	Nov-20	1:200	NP	04.02.21
Designed	Project No.		Dwg No.	Issue
CR	SY191015		CV-DG-4001	C



Client Concept

Milestone 2

Demolition Works

Temp Recovery

Operational

Operational

Operational

TO MEET CURRENT BCA COMPLIANCE

COVERED COURTYARD

OPEN TO COURTYARD

L1 corridor to access option B hoist, Used as material access by Hospital

Remove L1 Window and door, replace with double hoarding door

Level 1 Corridor below

Option 1 **(Preferred)**- Hoist Based on L2 (existing driveway)

2 x temp steel columns

Structural steel loading platform 4t rated, sit above existing roof and awning

Open Facade for material handling

Option 2 - Hoist Based on L1 courtyard

Option 3: Garbage Chute at this location (must avoid substation access doors L1)

Ply hoarding to maintain Mental Health Department Access

DOCK AREA

Material Handling required in this carpark for Option 2 Hoist

SafeWork NSW

ASBESTOS REMOVAL CONTROL PLAN (ARCP) FOR CLASS B (NON-FRIABLE) REMOVAL WORK

Date (DD/MM/YYYY)

24/11/2021

Asbestos licence holder

Serve Group Pty Ltd

Licence number

AD213326

Serve Group Contact

Mathew Pronk

Phone

0499 978 737

Email

generalmanager@servegroup.com.au

ASBESTOS REMOVAL ADDRESS

Address

Kingsway & Kareena Road, Caringbah (Sutherland Hospital)

On behalf of (client)

Blain Knox – Noble Works

SafeWork NSW notification number

940R-00329617-01

Start date (DD/MM/YYYY)

01/12/2021

Completion date (DD/MM/YYYY)

25/12/2021

The following documents are available for inspection:

- Notification
- Worker training in relation to asbestos
- First Aid Certificates
- Health Monitoring Confirmation

IDENTIFICATION

Asbestos or asbestos containing material (ACM) identified for removal including inaccessible areas:

Date	Location	Description of asbestos or ACM	Quantity of asbestos or ACM	Condition* – Description (Good, Fair, Poor)	
01/12/21	Sutherland Hospital	Removal and disposal AC bonded external louvers to Sutherland Hospital (50 in total)			

INFORMING PARTIES AND PEOPLE

The following people or parties will be informed about the upcoming asbestos removal and intended start date (keep consultation records)

☒ Neighbour letters sent out to surrounding properties

Date	Entity	Name	Address	How (phone/email/ letterbox drop)	Comments
	Client	Blain Knox		0480 261 633	
	Hygienist				
	Neighbours				

People or parties who must be informed (where applicable) are:

- Person who commissioned the removal(client)
- Client's workers orrepresentatives
- PCBU with management or control of the workplace
- Other PCBU's workers and/orrepresentatives
- Home owner
- Home occupant
- Neighbouring properties
- Licensed asbestos assessor or competentperson

NOMINATED SUPERVISORS (MUST BE APPROVED BY SAFEWORK NSW)

Name	Contact number
TBD	TBD
Choose an item.	Choose an item.

WORKERS

Name	Contact number
TBD	TBD
Choose an item.	
Choose an item.	

EMERGENCY PLANNING

Trained first aider(s) is on site:

Name	Contact number
TBD	TBD
Choose an item.	Choose an item.

First aid kit location
On the attending truck

	Contact numbers
Sutherland Hospital	(02) 9540 7111

Key Personnel (24 hour Contact)	Contact numbers	Email
Head Office	1300 119 233	admin@servegroup.com.au
Matt Pronk	0499 978 737	generalmanager@servegroup.com.au
Wade Rogers	0420 978 737	wade@servegroup.com.au

SITE PLAN

Plan view of the site indicating the following areas:

- Asbestos removal area
- Location of asbestos to be removed
- Entrances and exits
- Waste storage area
- Site security, barriers hazard warning tape
- Emergency equipment location
- Signage – warning and removalist details
- Decontamination area
- Other information – services ie electrical, gas, water

REMOVAL AND DISPOSAL AC BONDED EXTERNAL LOUVERS TO SUTHERLAND HOSPITAL (50 IN TOTAL)

WORK ELEVATED PLATFORMS AND CRANE PROVIDED BY CLIENT TO BE UTILIZED IN ORDER TO ALLOW FOR THE SAFE REMOVAL OF THE EXISTING LOUVES.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The following PPE is required and must be worn at all times during work in the asbestos removal area

☒ Disposable coveralls (Type 5/Category 3) 	☒ Half- face respirators (P2/disposable/cartridge) 	☒ Sun Protection 	☒ Fall arrest 
☒ Foot protection 	☒ Hand Protection 	☐ Hearing Protection 	☒ Disposable half-face respirator 
☐ Eye protection 	☐ Hard hats 	☐ Full-face respirators (P3) 	☐ Face Protection 

RESPIRATORY PROTECTIVE EQUIPMENT (RPE)

Disposable RPE may be used but it is not preferred.

Note: Workers must be clean shaven unless provided with a powered air purifying device and hood or similar

☒ All workers will perform a fit check of the respirator immediately before commencing work *(Note: a fit check must be performed each time the respirator is to be used)*

All asbestos removal tools and equipment must be decontaminated and placed in sealed, labelled bags and can only be used for asbestos removal. Single use items must be wrapped and disposed of as asbestos waste.

Damaged equipment must be removed from service and inspected by a competent person before re-use.

A register with the details of these inspections, the state of the equipment, and any repair details should be maintained.

MAINTENANCE OF EQUIPMENT

Tools and equipment that generate dust must not be used on asbestos except where used with dust suppression/extraction controls. These include high-speed abrasive power tools.

☒ All tools and equipment used in the removal of ACM have been inspected for damage before all removal work and will be cleaned and inspected following all removal work

REMOVAL METHOD

Task	Tools and Equipment	Method and Controls
Preparation:		
Site setup Water Access Lighting	Asbestos warning and removalist signage, hazard warnin tape, site security barricades.	Erect site barricades and asbestos warning signage at site entery and check temporary fencing. Check safety and access. Ensure adequate access provided to water. Check sufficient lighting in place.
Supervisor Pre-checks		Supervisor to carry out a risk assessment using the pre-check sheets. Identify any hazards and ensure the control measures are followed as per the hierarchy of controls in the SWMS.
Electrical/plumbing		Confirm that all relevant electrical and plumbing has been disconnected- check before works commence.
Set up Decontamination area		Lay out 200-micron plastic in exclusion area, asbestos bags, spray bottle, duct tape and first aid kit. Put on PPE and RPE.
Toolbox talk		Supervisor to go through ARCP and SWMS onsite and ensure that all employees understand and will comply with the documents. All employees on site to sign.
Friable removal (separate)		Friable components to be removed in accordance with separate documents (friable ARCP & SWMS)
Commencement:		
Remove bonded AC		REMOVAL AND DISPOSAL AC BONDED EXTERNAL LOUVERS TO SUTHERLAND HOSPITAL (50 IN TOTAL)
Clean up and PVA spray		Vacuum all removal area. Spray PVA
Completion:		
Decontaminate asbestosremovalarea.	Wet wipes, HEPA filtered H class industrial vacuum cleaner.	Remove dust and debris from plastic sheeting, vacuum debris, wet wipe, fold plastic inwards, place in asbestos waste bags.
Decontaminate tools and equipment.		
Decontaminate PPE/RPE.		Wet Wipe
Engage Hygienist		Supervisor to walk through with the hygienist and once issued with a verbal clearance from the visual inspection, job is completed.
All PPE (disposable) placed in a labelled asbestos waste bag, goose necked and taped, then double bagged.		

MANAGEMENT AND DISPOSAL OF ASBESTOS WASTE

Will removed asbestos waste be held on site for more than one working day?
☐ Yes ☒ No

If yes, detail how will the labelled asbestos waste be stored and the dedicated location for stored waste within the removal area:

(ie asbestos will be stored in a waste skip bin lined with 200-um (0.2mm) plastic sheeting, covered and sealed at the end of each shift).

☐ All Asbestos waste will be stored in a designated accessible location marked on the site plan.
☒ Used disposable PPE and RPE will be stored in asbestos waste bags or a labelled, sealed container before removing it from site.

Proposed authorized asbestos waste disposal site

Bingo (1 Kangaroo Ave, Eastern Creek NSW 2766)

EPA Waste locate consignment number

A copy of the ARCP must be provided to the following:
☒ The person who commissioned the licensed asbestos removal work.

A copy of the ARCP must be readily accessible to the following:
☐ Other PCBU's
☐ Health and safety representatives
☐ Occupants of the premises (if residential).

The ARCP must be available for inspection by a SafeWork NSW inspector

DECLARATION AND SIGN OFF

The information contained in this plan is accurate and developed in consultation with workers onsite. Supervisors and workers tosign.

Name	Signature	Date
Choose an item.		
Choose an item.		

LEGISLATION **Act & Regulations**	**Codes**
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017	• First aid in the workplace code of practice January 2020 • Hazardous manual tasks code of practice August 2019 • How to manage work health and safety risks code of practice August 2019 • Managing electrical risks in the workplace code of practice August 2019 • Managing noise and preventing hearing loss at work code of practice August 2020 • Managing the risk of falls at workplace code of practice August 2019 • Managing the work environment and facilities code of practice August 2019 • Work health and safety consultation, coordination and cooperation code of practice August 2019 • Construction work code of practice August 2019 • Demolition work code of practice August 2019 • How to manage and control asbestos in the workplace code of practice August 2019 • How to safely remove asbestos code of practice August 2019 • Labelling of workplace hazardous chemicals code of practice August 2019 • Managing risks of hazardous chemicals in the workplace code of practice August 2019 • Managing the risks of plant in the workplace code of practice August 2019 • Moving plant on construction sites code of practice 2004 • Managing the risk of falls in housing construction August 2019 • Technical guidance code of practice 2001 • Work near power lines code of practice 2006 • Safe Work Australia How to Safely Removal Asbestos August 2019

Serve Group Licenses

NSW GOVERNMENT

FRIABLE ASBESTOS REMOVAL LICENCE

Issued under the *Work Health and Safety Regulation 2011 (NSW)*.This licence is not transferable.

Licence: AD213326

Licence period: From: 29/08/2019 To: 28/08/2024

Licence holder name: Serve Group Pty Ltd

ABN: 30 159 209 024

ACN: 159 209 024

Address: 23 Porter Circuit
MILTON NSW 2538

Description of the work that can be undertaken under this licence

- All friable asbestos removal work
- All non-friable asbestos removal work

Licence holder obligations

A nominated supervisor must be present at the site whenever licenced friable asbestos removal work is being carried out and readily available to attend the site when licenced non friable asbestos removal work is carried out.

This licence must be available for inspections at all times.

All licenced asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.

The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

ASBESTOS BONDED REMOVAL

Sutherland Hospital

JOB: 13918

23/11/2021

23rd of November 2021

Matt Pronk

74 Anderson Road Mortdale, NSW

Serve Group Pty Ltd

Dear Blain Knox,

INTRODUCTION

Serve Group Pty Ltd was commissioned by Noble Works Australia (the "client") to develop a remediation plan for the removal of asbestos hazardous materials to be undertaken at Sutherland Hospital (the "site")

Serve Group understands that the client is wanting to remove bonded AC fibre cement sheeting to the external louvers and eaves. The client has subsequently required Serve Group to provide an Asbestos Remediation Plan ("ARP") to guide contractors involved in the removal and remediation of bonded AC sheeting.

The purpose of the ARP is to ensure the safety and health of employees, contractors and the public during planned refurbishment works on site. The works must be carried out in a manner which ensures the protection of the health and wellbeing of site contractors, and nearby occupiers and ensures that all personnel employed at the site are aware of the nature and location of hazardous materials and the method of controlling the identified hazardous materials

With projects dealing with toxic and hazardous materials, it is a requirement of NSW legislation and local government to put in place a Safe Work Method Statement preceding the commencement of works.

Non-Friable Asbestos Material

Non-Friable asbestos material is any material that contains asbestos in a non-friable matrix. It may consist of Portland cement or various resins/binders and cannot be crushed by hand when dry. Asbestos cement (AC) products and electrical meter boards in good condition are examples of non-friable asbestos material.

A large number of products made from non-friable asbestos material are still found in Australia buildings, motor vehicles and plant components. These products include

- Flat fibro, corrugated or compressed asbestos cement sheeting.

- Asbestos cement pipes such as electrical, water, drainage and flue pipes.
- Brake and clutch linings.

LEGISLATION AND REGULALTORY REQUIREMENTS

The current standards and guidelines pertaining to asbestos management, removal, stabilisation and disposal include the following:

- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2017
- Codes adhered to by Serve Group Pty Ltd
- First aid in the workplace code of practice July 2015
- Hazardous manual tasks code of practice October 2018
- How to manage work health and safety risks code of practice May 2018
- Managing electrical risks in the workplace code of practice October 2018
- Managing noise and preventing hearing loss at work code of practice October 2018
- Managing the risk of falls at workplace code of practice October 2018
- Managing the work environment and facilities code of practice May 2018
- Work health and safety consultation, coordination and cooperation code of practice August 2019
- Construction work code of practice May 2018
- How to manage and control asbestos in the workplace code of practice March 2020
- How to safely remove asbestos code of practice October 2018
- Labelling of workplace hazardous chemicals code of practice October 2018
- Managing risks of hazardous chemicals in the workplace code of practice May 2018
- Managing the risks of plant in the workplace code of practice May 2018
- Moving plant on construction sites code of practice 2004
- Preventing falls in housing construction February 2016
- Managing the risk of falls in housing construction October 2018
- Safe work on roofs part 1 commercial industry code of practice 2009
- Technical guidance code of practice 2001
- Work near power lines code of practice 2006
- Safe Work Australia How to Safely Removal Asbestos 2019

In the case of conflict between these procedures and any Regulation or Act, then the more stringent requirement shall apply.

CONTROLS

Administrative - Training

Serve Group Pty Ltd (the 'PCBU') will ensure that information, training and instruction provided to a worker is suitable and adequate having regard to:

- The nature of the work carried out by the worker
- The nature of the risks associated with the work at the time, the information, training or instruction is provided, and
- The control measures to be implemented.

Serve Group will, so far as is reasonably practicable, ensure that the information, training and instruction is provided in a way that is readily understood by any person to whom it is provided. Serve Group will ensure workers who they reasonably believe may be involved in the asbestos remediation works are trained in the identification, safe handling and suitable control measures for asbestos materials

Asbestos SWMS and Control plan as well as Working Safely at Heights to be provided to client.

Engineering – Equipment

Personnel undertaking the works must have the following equipment before works commence:

- 0.2 mm polyethylene sheeting;
- 0.2 mm polyethylene low-density plastic bags;
- Duct tape;
- Scraper;
- Crow bar;
- Stanley knife;
- Drills;
- Warning tape/ barricade and signs;
- Disposable cleaning rags or moistened wipes;
- A misting spray water bottles;
- A Class H rated vacuum cleaner fitted with a High Efficiency Particulate Air ("HEPA") filter.

Vacuum cleaners are to be approved for use with Asbestos and are to comply with the Class H requirements in Australian Standard *AS/NZS 60335.2.69 Industrial vacuum cleaners* or its equivalent. Filters for these vacuum cleaners should conform to the requirements of *AS4260-1997 High efficiency particulate air (HEPA) filters – Classification, construction and performance* or its equivalent.

- Vacuum cleaners should not be used on wet materials or surfaces.
- Attachments with brushes should not be used as they are difficult to decontaminate.
- Standard domestic or industrial vacuum cleaners are not suitable.
- The vacuum collection bags and filters are to be disposed of as lead waste.

PERSONAL PROTECTIVE EQUIPMENT

During all Asbestos removal work, Serve Group will ensure that the following precautions and safety measures are implemented as required.

- The exclusion of non-workers
- Use of appropriate respiratory protection.
- The correct and proper wearing of disposable suits with hood
- The wearing of non-porous gloves
- The wearing of non-lace-up boots
- Eye protection (eg. goggles), steel capped boots, and hard hat as per general requirements for site work
- Use of decontamination units/facilities to include washing of face, hands, and all skin thoroughly before leaving the removal area, eating, drinking or smoking
- No food consumption or smoking inside the treatment area
- Cleaning of boots before leaving the treatment area
- New disposable suits to be used for each entry to the exclusion zone
- No disposable coveralls or PPE is to be worn outside of the removal area.

ISOLATION

- Access is to be restricted to the ACM Work Area
- The ACM Work Area is to be established and barricades erected to delineate the ACM Work Area. This should include the establishment of an exclusion zone of approximately three metres
- Signage is to be displayed on the ACM Work Area boundaries advising that removal works are being undertaken. Signage used should be in accordance with the Code of Practice
- A Decontamination Area shall be established which is the area in which contaminated PPE must be removed prior to personnel leaving the work area. It should be adjacent to the ACM Work Area but must not be used for purposes other than decontamination.

NATA ACCREDITED HYGIENIST SERVICES

Hygienist services such as visual clearances, and air-monitoring are to be completed by an independent NATA accredited company. It is recommended that these services be undertaken during all asbestos removal works completed by Serve Group.

SITE SUPERVISION AND INSPECTATION

Site supervision will be undertaken by a qualified supervisor of Serve Group. The supervisor's duties include all those set out in the relevant rules and regulations as well as any other duties required by this document.

The Site Supervisor has been fully trained, with more than 8 years' experience, and has thorough knowledge of the work procedures and safety standards.

No asbestos removal works is to be undertaken without the presence of a site supervisor.

CONTAMINATED WASTE

Serve Group Pty Ltd will ensure that the transportation and disposal of contaminated waste meets the requirements as outlined in Waste Disposal Guidelines.

Serve Group is responsible for controlling all waste generated. This includes determining that all handling, storage, transport, and disposal requirements have been met.

Copies of the waste disposal receipts are to be supplied by the Removal Contractor to the principle. A log detailing the dates and quantities of waste removed and disposal site is to be kept.

DECONTAMINATION PROCEDURE

1. A dry decontamination area shall be used and is to be located at the entry to the asbestos work area.
   a) Entry to the lead work area is to be via the decontamination where personnel will change into the required PPE.
   b) Disposable overalls, respirators and gloves must be disposed of as lead waste within this area. Hard hats, boots, goggles and any other site-specific PPE must be wiped with a damp cloth to remove dust and other contamination.
2. Dry decontamination procedures are to be as follows:
   a) Workers are to wear the PPE at the Decontamination Area.
   b) Upon leaving the lead work area, the coveralls, boot covers and gloves, are to be removed and placed into 0.2 mm polyethylene low-density bags.
   c) Remaining PPE is to be removed at the Decontamination Area and personnel are to decontaminate or wash any exposed parts of the body. Hard hats, boots, goggles and any other site-specific PPE must be wiped with a damp cloth to remove dust and other contamination.
   d) All contaminated PPE shall be placed into 0.2 mm polyethylene low-density plastic bags labelled as 'Hazardous Waste'. Bags are to be filled to no more than ½ full, sealed, placed into a second bag at the 'bag-out' area and sealed for appropriate disposal.

CLEAN UP AND AREA RESTORATION

On completion of the Asbestos remediation Serve Group shall ensure the clean-up of the removal area. All areas prepared for final inspection by the Hygienist.

NOTES AND LIMITATIONS

This Asbestos Removal Plan is prepared based on the information available on the scope of asbestos removal work at the time of writing. If additional Asbestos materials are identified at a later date or during the removal program, all work should cease, and advice be sought from a Licensed Asbestos Assessor.

GENERAL CONDUCT OF WORK AND METHODOLOGY

1. Neighbouring properties are to be notified and informed of the asbestos removal works and the controls being implemented.
2. Prior to the commencement of any works, signs MUST be obtained in writing that the following services have been disconnected-

a. Power – Electrical
b. Gas
c. Water
d. Fire
e. Mechanical
f. Fibre optic
g. Telephone
h. No work is to proceed until these sign offs have been received.

3. Temporary fencing to work area must be erected by client.
4. Appropriate signage and barriers to be erected prior to commencement of works.
5. Establish location of decontamination area at the entry to asbestos work area for access and egress.
6. The prescribed PPE is to be utilised by all personnel accessing the asbestos work area.
7. Toolbox talk to be completed prior to job start.
8. Builders plastic to be set up to removal area, laid on ground with the edges turned up at least 200mm to prevent dust and liquid escaping the work area.
9. Hygienist to set up air-monitoring. (No allowance)
10. Bins/trucks to be set up on site.
11. Area to be secure to reduce any risk of an individual being injured from any item falling at height.
12. Staff member present will have a valid High Risk Work ticket (HRW) for any works greater than 10 meters in height.
13. Crane and dog man to set up. Dogman to enter the 1st scissor/boom to access the area.
14. 2 qualified staff members to enter 2nd scissor/boom to run through all louvers thus removing/loosening all fixtures. This is be completed in a staged sequence that is level by level.
15. Once all relevant fixings are removed. 2 qualified staff members can proceed with removal.
16. Once arriving at each louvre, the dogman to ensure the louvre is secure with strops.
17. Mixture of PVA and water to be sprayed to removal area.
18. Using appropriate tools such as Stanley knife, hammer, drills, and crow bars to remove asbestos fibre cement sheeting under the procedures stated in asbestos removal control plan.
19. Once louvre is disconnected, the crane will carry the weight allowing the men on site to guide the crane towards the bin. (Client to ensure the scissor lift can withstand live loads)
20. Put small items and debris in asbestos waste bags.
21. Line bin/truck with 200-mircon thick plastic
22. Once complete, decontamination of tools and personnel are to be completed.
23. Material to be disposed of a licensed waste facility.
24. Hygienist to perform final visual clearance once all asbestos material has been removed.
25. Make good and clean up.

Note: This process is determined on a case by case basis.

GENERAL SUMMARY

- NATA Accredited Airborne Asbestos fibre monitoring is to be undertaken during all Asbestos removal work
- Serve Group will provide to the Client copies of their Asbestos Removal Licence and relevant insurances (attached on this report).
- Serve Group in conjunction with Noble will ensure that all work is undertaken in accordance with the Safe Work Australia Code of Practice How to Safely Remove Asbestos (October 2018), and the Work Health and Safety Act 2011(WHS 2011)
- Serve Group in conjunction with Noble will strictly adhere to all relevant Acts, Regulations and Codes of Practice
- Serve Group will obtain all necessary permits and approvals and give required notices (eg.SafeWork Authority permit to undertake removal works and any site specific approvals from the Local Council Authority)
- Serve Group will ensure that site access is restricted and unauthorised access into the site is prevented. Install barricades and/or hoardings, and appropriate signs, including asbestos removal signs, before beginning any work
- Serve Group and Noble will determine the boundary of removal works based on a risk assessment.
- Access for other persons to within any asbestos removal control boundary is not permissible without the supervision of the licensed asbestos removal employee and whilst wearing the correct PPE
- Serve Group in conjunction with Noble will ensure that the site is secure and safe
- Serve Group in conjunction with Noble will establish procedures for dealing with emergencies. Fully inform all site personnel of work plan, safety and evacuation procedures
- Where an asbestos removal exclusion zone is established in the vicinity of a fire exit or emergency egress route, procedures should be implemented such that emergency evacuation may occur unhindered
- No asbestos removal work is to be undertaken during any period of high wind or within the period of effect of any high wind warning, gale warning or other storm warning
- Serve Group will ensure that the removal site and any associated asbestos removal equipment is made weather / storm proof prior to leaving site each day
- Serve Group in conjunction with Noble will decide if electrical services etc. are to remain in operation during remedial works and ensure all other services are assessed prior to commencement. Arrange service alternatives as required.
- Serve Group in conjunction with Noble will ensure that fire extinguishers suitable for the area of work are present and accessible at all times during the removal program.
- To ensure that dust generation is minimised, a PVA spray will be completed, Serve Group will ensure that all sources of dust are suppressed with low-pressure water spray. The spray will apply minimal amounts of water to the work areas in a fine mist to minimise or eliminate water run-off and free water
- Serve Group is responsible for the proper disposal of all wastes in accordance with all statutory requirements. Waste disposal receipts and/or tipping documentation is to be supplied to the Client. Waste arising from the execution of work shall be removed from the site

- Any ancillary workers (tradesman / machinery operators / specialist technicians and the like) required to be present during the asbestos removal must undergo Asbestos awareness training prior to the commencement of work
- Serve Group will ensure that all workers have received appropriate instruction in the health hazards associated with asbestos the use of PPE and that all workers wear their PPE in accordance with the manufacturers specifications
- Serve Group will ensure that all workers required to wear respiratory protective equipment have undergone a qualitative fit testing assessment
- Serve Group will establish an area for decontamination of equipment/plant/vehicles and wetting down and disposal of PPE.
- Decontamination facilities must be appropriate for the nature of the planned removal
- No disposable coveralls or PPE is to be worn outside of the removal area
- No vehicle or container shall leave the site unless it is loaded appropriately, within the safe working limit of the vehicle/container and is adequately covered
- All material which may contain asbestos should be assumed to contain asbestos unless NATA accredited analysis indicates otherwise
- Asbestos containing materials should not be broken (unless it is unavoidable) and are to be disposed of as whole components
- All tools and equipment that enters the contaminated area is to undergo decontamination prior to leaving the contaminated area
- All our staff have current medical certificates

Conclusion

To conclude, this report outlines the methodology to be completed by Serve Group in relation to the safe removal and remediation of asbestos bonded sheeting to affected area. Adhering to the following document ensures that works are completed to be highly efficient and effective standard. On-completion of works a walk through is to be conducted to ensure works meet the required scope.

Yours Sincerely,

Serve Group Pty Ltd

Serve Group Licenses

NSW GOVERNMENT

FRIABLE ASBESTOS REMOVAL LICENCE

Issued under the *Work Health and Safety Regulation 2011 (NSW)*.This licence is not transferable.

Licence:	AD213326
Licence period:	From: 29/08/2019 To: 28/08/2024
Licence holder name:	Serve Group Pty Ltd
ABN:	30 159 209 024
ACN:	159 209 024
Address:	23 Porter Circuit MILTON NSW 2538

Description of the work that can be undertaken under this licence

- All friable asbestos removal work
- All non-friable asbestos removal work

Licence holder obligations

A nominated supervisor must be present at the site whenever licenced friable asbestos removal work is being carried out and readily available to attend the site when licenced non friable asbestos removal work is carried out.

This licence must be available for inspections at all times.

All licenced asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.

The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

icare | Workers Insurance

Certificate of currency

000031 PoOut_0 EMAIL
Wade Rogers
SERVE GROUP PTY LTD
PO Box 2082
BONDI JUNCTION NSW 1355

Issue date:
13/07/2020

Print date:
13/07/2020

Dear Wade

Statement of coverage

The following policy of insurance covers the full amount of the employer's liability under the *Workers Compensation Act 1987 (NSW)*.

Employer name:	Policy number:	Valid:
SERVE GROUP PTY LTD	104078801	30/06/2020 - 30/06/2021
Trading name:	**ABN:**	**ACN:**
Asbestos Removal Sydney	30 159 209 024	159 209 024

Industry classification number (WIC)[3]	Number of workers[1]	Wages/units[2]
421010 Demolition	45	$2,000,000.00

1. Number of workers includes contractors/deemed workers
2. Total wages/units estimated for the current period
3. The policy covers all workers employed by the entity named on this certificate in the course of its primary business activity or any other activities ancillary to its primary business activity as required.

Important information

Principals relying on this certificate should ensure it is accompanied by a statement under section 175B of the *Workers Compensation Act 1987 (NSW)*. Principals should also check and satisfy themselves that the information is correct and ensure that the proper workers compensation insurance is in place, i.e. compare the number of employees on site to the average number of employees estimated; ensure that the wages are reasonable to cover the labour component of the work being performed; and confirm that the description of the industry/industries noted is appropriate. A principal contractor may become liable for any outstanding premium of the sub-contractor if the principal has failed to obtain a statement or has accepted a statement where there was reason to believe it was false.

Yours faithfully,

Peter Meighan
Underwriting Operations Manager
icare Workers Insurance

CERTIFICATE OF CURRENCY

This is to confirm that this Insurance Contract is current unless subsequently cancelled and subject at all times to the terms, conditions and exclusions of this Policy.

NAME OF INSURED:	Serve Group Pty Ltd T/as Asbestos Removal Sydney, Canberra Asbestos Removal, Asbestos Removal Newcastle
INSURER:	100% underwritten by Zurich Australian Insurance Limited (ABN 13 000 296 640, AFSL 232507)
POLICY TYPE:	Public and Products Liability
POLICY NUMBER:	09020125
PERIOD OF INSURANCE:	28/02/21 to 28/02/22 At 4pm Local Time
BUSINESS DESCRIPTION:	Demolition, asbestos removal & associated activities & property owners/occupiers
LIMITS OF LIABILITY:	**Public Liability** **$20,000,000** In respect of any one Occurrence or series of Occurrences arising out of the one event during the Period of Insurance. **Products Liability** **$20,000,000** In respect of any one Occurrence or series of Occurrences arising out of one event and in the aggregate during the Period of Insurance. **Asbestos Liability** **$20,000,000** In respect of any one Occurrence or series of Occurrences arising out of one event and in the aggregate during the Period of Insurance.

Sterling Insurance Pty Ltd are subject to Australian privacy laws and we only deal with insurance brokers. As such, please direct any enquiries about this document to the Insured's insurance broker.

Signed:

Dated: 4 March 2021

BONDED SAFE WORK METHOD STATEMENT (SWMS) PART 1	
ACTIVITY: REMOVAL AND DISPOSAL AC BONDED EXTERNAL LOUVERS TO SUTHERLAND HOSPITAL (50 IN TOTAL) AT THE BELOW MENTIONED ADDRESS	**JOB** #: 13997
BUSINESS NAME: SERVE GROUP PTY LTD T/A ASBESTOS REMOVAL SYDNEY	**BUSINESS** #: 30 159 209 024
BUSINESS ADDRESS: 74 ANDERSON ROAD, MORTDALE NSW 2223	
BUSINESS CONTACT: MATT PRONK	**PHONE** #: 1300 119 233
SWMS APPROVED BY: EMPLOYER / PCBU / GENERAL MANAGER	
NAME: MATHEW PRONK	
SIGNATURE: 	**DATE**: MONDAYWEDNESDAY, NOVEMBER 24, 2021
PERSON/S RESPONSIBLE FOR ENSURING COMPLIANCE WITH SWMS: MATHEW PRONK	
PERSON/S RESPONSIBLE FOR REVIEWING & PREPARING THE SWMS: SHARON BALDWIN	
ALL PERSONS INVOLVED IN THE TASK MUST HAVE THIS SWMS COMMUNICATED TO THEM BEFORE WORK COMMENCES.	
Daily Toolbox Talks will be undertaken to identify, control and communicate additional site hazards.	
Work must cease immediately if incident or near miss occurs. SWMS must be amended in consultation with relevant persons.	
Amendments must be approved by Mathew Pronk and communicated to all affected workers before work resumes.	
SWMS must be made available for inspection or review as required by WHS legislation.	
Record of SWMS must be kept as required by WHS legislation.	

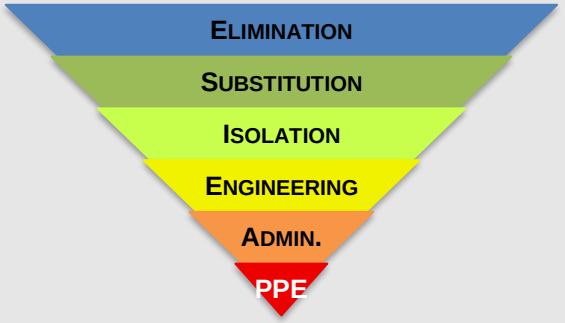
PRINCIPAL CLIENT DETAILS		
CLIENT: BLAIN KHOX – NOBLE WORKS	**PROJECT NAME**: 13918	**DATE SWMS PROVIDED TO PC**: 23/11/2021
PROJECT ADDRESS: KINGSWAY & KAREENA ROAD, CARINGBAH (SUTHERLAND HOSPITAL)		
SWMS SCOPE: This SWMS provides guidance on working with and removal of non-friable asbestos greater than 10m2 in area (license required)		

Suitable for NSW, Qld, SA, Tas., NT & ACT ONLY	• *Non-friable asbestos* means material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound. Common examples: cement sheeting, ceiling tiles, vinyl tiles. • *Friable asbestos* means material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry and contains asbestos. Examples include pipe lagging, limpet and fire door cores. (Codes of Practice: Safe Work Australia (2011): *How to safely remove asbestos.)*

THIS WORK ACTIVITY INVOLVES THE FOLLOWING "HIGH RISK CONSTRUCTION WORK"			
☐ Confined spaces	☐ Mobile plant	☐ Demolition	☒ Asbestos
☐ Using explosives	☒ Working at Heights	☐ Artificial extremes of temperature	☐ Tilt up or pre-cast concrete
☐ Pressurised gas distribution mains or piping chemical, fuel or refrigerant lines energised electrical installations or services			
☐ Structures or buildings involving structural alterations or repairs that require temporary support to prevent collapse			
☐ Involves a risk of a person falling more than 2m, including work on telecommunications towers			
☐ Working at depths greater than 1.5 Metres, including tunnels or mines		☐ Work in an area that may have a contaminated or flammable atmosphere	
☐ Work carried out adjacent to a road, railway or shipping lane, traffic corridor		☐ In or near water or other liquid that involves risk of drowning	

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED.
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before commencing work.
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Maintain control measures.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1 LOW	Record and monitor.

HIERARCHY OF CONTROLS



MOST EFFECTIVE

LEAST EFFECTIVE

PERSONAL PROTECTIVE EQUIPMENT (PPE):

ENSURE ALL PPE MEETS RELEVANT AUSTRALIAN STANDARDS. INSPECT, AND REPLACE PPE AS NEEDED.

FOOT PROTECTION	FULL-FACE RESPIRATORS (P3)	HALF-FACE RESPIRATORS (P2 / DISPOSABLE / CARTRIDGE)	HARD HATS	DISPOSABLE HALF-FACE RESPIRATOR	EYE PROTECTION	FACE PROTECTION	HAND PROTECTION	PROTECTIVE CLOTHING	SUN PROTECTION	FALL ARREST	HEARING PROTECTION	Rings, watches, jewellery that may become entangled in machines must not be worn. Long and loose hair must be tied back.
												
☒	☐	☒	☐	☒	☐	☐	☒	☒	☒	☒	☐	☒

NOTIFICATIONS AND DOCUMENTATIONS	CP#: 13918		
REMOVALIST NAME: SERVE GROUP PTY LTD T/A ASBESTOS REMOVAL SYDNEY	**Licence Number**: AD213326	☐Class A☒ Class B ☐Non-ACM	
Site Supervisor: TBD	**Contact number**: TBD	**Start Date: 01/12/2021**	**Completion date: 25/12/2021**
Have the notifications been made?	☒ State Authority	☐ Adjacent Business	☒ Neighbours
Onsite Documentation available?	☒ Removal License	☒ ARCP	☒ SWMS (refer Non-Friable ARCP)

Emergency Planning				
First Aid Officer	**Qualification**	**Expiry**	**Supervisor**	**Contact Number**
Appointed Supervisor	HLTAID001/2/3	August 2023	Choose an item.	Choose an item.
☒ First-aid kit	☒ Fire extinguisher	☐ Falls rescue equipment	☐ Communication System (mobile phone)	

Emergency Evacuation assembly point	By the truck. If the truck is not accessible, then all employees to follow the nominated supervisors' directions.		
First Aid Location	Where the decontamination area is set up.		
Emergency Facilities **(Nearest hospital)**	Sutherland Hospital	**Contact Number**	(02) 9540 7111

Consultation will be undertaken within the following persons at premises where demolition takes place:	☒ The Client ☐ The Principal ☒ Neighbours ☐ The occupying employer	☐ Their employees ☐ Safety committee or ESR ☐ Other contractors on site ☐Other authority
Asbestos Boundary	☐ Pedestrians ☒ Warning signs ☒ Barricades/safety tape	☐ Security fencing ☐ Boundary

KEY PERSONNEL (24 Hour Contact)		
Head Office	admin@servegroup.com.au	1300 119 233
Mathew Pronk	generalmanager@servegroup.com.au	0499 978 737
Wade Rogers	wade@servegroup.com.au	0420 978 737

Removal and disposal AC bonded external louvers to Sutherland Hospital (50 in total)

Client to provide boom lift to perform works.

Identified Emergency situations (indicate if any of the following safety issues have been identified during the planning for non-friable)

- ☒ Electrocution
- ☒ Heat Stress
- ☐ Confined Space
- ☐ Pedestrians
- ☒ Fall
- ☒ Fall from Ladder
- ☒ Manual Handling
- ☐ Plant & Equipment
- ☐ Fall from roof
- ☒ Sharp Objects
- ☒ Slips, trips and falls
- ☐ Excavation 1.5m+
- ☐ Chemical, Fuel Lines
- ☐ Overhead powerlines
- ☐ Flora & Fauna harm
- ☐ Environmental harm

MATERIAL	LOCATION	CONDITION
☒ Flat AC Sheet	☒ Indoors	☐ Good
☐ Corrugated AC Sheet	☐ Outdoors - protected	☐ Extensive breakages
☐ Formed AC products	☒ Outdoors - exposed	☐ Minor breakages
☐ Cladding	☐ Trench / pit	☒ Weathered
☐ Sprayed insulation	☐ Ducts - enclosed	☐ Painted
☐ Vinyl tiles	☐ Roof	☐ Unsealed
☐ Labelled	☐ Fence	☐ Fire damaged
☐ Other	☐ Other (specify)	☐ Other (specify)

WASTE AND DISPOSAL INFORMATION	
WASTE	EPA OP423465 ACM double wrapped ☒
	Waste Disposal Depot: Bingo (1 Kangaroo Ave, Eastern Creek NSW 2766) **Waste quantity (tonne):** TBD
REMOVAL METHOD	☒ Wet ☐ Dry
EQUIPMENT	**Spray Equipment** ☐ Low pressure trigger ☒ Hand pump ☒ Vacuum Equip. complies with AS/NZS 60335.2.69. ☒ All equipment used in the ACM removal is inspected before and after all removal work. **Hand Tools** ☒ Hammer ☒ Crowbar ☐ ☐ ☒ Screwdriver ☒ Stanley knife with retractable blades ☐ ☐ ☐ Sledgehammer ☐Other: ☐ ☐

	Power Tools			
	☐ Jack Hammer	☐ Concrete saw	☐	☐
	☐ Drill	☐ Other:	☐	☐
	☐ Reciprocating saw	☐	☐	☐

Asbestos Licensed Assessor: Choose an item.	**Contact** #: Choose an item.	☒ Clearance certificate ☐ Air-monitoring

UPON COMPLETION A COPY OF THE PLAN AND RELEVANT DOCUMENTS HAVE BEEN SENT TO: ☒ CUSTOMER ☐ HYGIENIST ☐ CONTRACTOR ETC

DECONTAMINATION METHODS	**WET WIPE**	**VACUUM**	**DRY**	**WASH**	**WATER SPRAY**	**DISPOSED**	**OTHER (SPECIFY)**
ACM REMOVAL AREA	☒	☒	☐	☐	☒	☒	
PERSONNEL	☒	☐	☐	☒	☐	☐	
EQUIPMENT	☒	☒	☐	☐	☐	☐	
NON-DISPOSABLE PPE	☒	☐	☐	☒	☐	☐	
DISPOSABLE PPE	☐	☒	☐	☐	☐	☒	
SOIL	☐	☐	☐	☐	☐	☐	

Hazard Control Measures & Emergency Procedures

If work is to be conducted on a construction site (or a site controlled by another Employer / PCBU) follow the site-specific Emergency Management Plan. Ensure: • Adequate numbers of first aid trained staff are on site • First aiders are trained & competent in managing injuries until emergency services arrive • All rescue equipment is in good condition, available for use and in close proximity to the work site.	Ensure workers have access to: • First aid kit/supplies • First Aid trained personnel familiar with resuscitation and emergency response for electric shock • M/SDS • Communication devices (check mobile phones will have service in area) • Suitable fire protection equipment.

Electrocution

Control measures and preventative steps regarding electrical hazards

- Inspect wiring of equipment before each use. Replace any damaged or frayed cords immediately
- Ensure test & tag is up to date
- Ensure wires are completely isolated (Licensed Electrician to complete)
- If electrical equipment were to be used on site, ensure safe work practices are implemented
- Ensure all individuals on site know the location and how to operate shut-off switches and/or circuit breaker panels.
- Where possible the use of extension cords should be reduced.

To deal with electrocution - What to do:
1.Check for danger to yourself, bystanders & the patient
2.Switch off power, if possible, before trying to help the patient
3.If the patient is in contact with high voltage lines, do not approach but wait until power is disconnected by authorized electrical personnel.
4.If power cannot be switched off quickly, remove the patient from the electrical supply without directly touching them. Use a non-conductive, dry material (eg a dry wooden broom handle)
5.Follow DRSABCD. Call triple zero (000) for an ambulance.
6.Hold any burnt area under cool running water for 20 minutes.
7.Remove jewellery and clothing from burnt areas, unless stuck to the burn.
8.Cover the burnt area with a loose and light nonstick dressing, preferably clean, dry, non-fluffy material such as plastic cling film.
9.Seek medical aid

Heat Stress

Heat-related hazards can be created from working in enclosures or confined spaces or using
PPE. The following factors can lead to heat stress, including temperature, humidity, air movement, exposure to a heat source, work activities and demands, how long the PPE has been worn, and individual physical factors.
Control measures to help prevent heat stress include:

- Selecting appropriate PPE to reduce the build-up of heat
- Providing an adequate number of extraction units in enclosures
- Scheduling appropriate work breaks (Adequate breaks – set break times 9 – 9.15 am & 12 – 12.30 pm Supervisor in charge of calling these break times)
- Employee rotation
- Making cool drinks readily available outside the vicinity of the works being completed
- Providing a cool, shaded rest area and
- Educating workers about heat stress risks and controls

If heat exhaustion were to occur in the workplace the following procedures should be adhered to:

1. The person should be removed from the heat area and placed in a shady or airconditioned place
2. The individual should be laid down, with legs and feet elevated slightly
3. Remove tight or heavy clothing
4. Ensure the individual drinks cool water or other non-alcoholic beverage without caffeine
5. Cool the person by spraying cool water or fanning
6. Notify client
7. Monitor the individual carefully
8. If symptoms were to worsen and do not improve within one hour, contact emergency services

Manual handling

The following steps are in accordance to the Code of Practice Hazardous Manual Tasks August 2019

1. Ensure all individuals all reasonably fit to carry out works prior to job start
2. When lifting items, it is essential to keep relaxed and ensure the upward movement starts with the head
3. Lifting movement should be as smooth and progressive as possible, thus using the power of the legs to perform the lifting
4. Once lifted the item should be close to the body, thus no twisting movement of the body should be made
5. When carrying items such as double wrapped bags and other equipment grip should be secure and arms should be kept within the boundary of the body
6. When conducting movement on site ensure the spine, shoulders and knees are always kept in its normal alignment
7. Ensure all appropriate footwear is utilised for the task, thus place feet apart to ensure the individual is balanced at all times

Sharp Objects

- Before works commence a site inspection of the work area should be completed to ensure there are no sharp objects that may cause an injury to an employee
- If a sharp object were to be found during the site inspection, before job starts ensure safety measures are adhered to in order to remove the object safely.
- If a sharp object were to be found during the completion of works, ensure the client (St Hillier's) is notified about the hazard and take reasonable steps to eliminate the hazards from the work site.

Procedure for dealing with minor cuts, scrapes or bruises in the workplace

1. Apply direct pressure to the wound for 10 minutes or until bleeding stops
2. Wash the wound for 5 minutes
3. Gently scrub out any dirt with a clean washcloth
4. Apply antiseptic wash or antibiotic ointment, then apply bandage
5. Monitor the employee and if conditions worsen

Procedure for larger cuts and wounds

1. Apply direct pressure immediately and follow first aid guidance
2. Notify client
3. Ensure wound is kept clean then apply antibiotic ointment
4. If conditions worsen contact emergency services

Organise for employee to be escorted off site and adequate transport home

Fall from ladder

Carry out a risk assessment to assess if the work can be done from the ground, and if not, how they can safely access the work area in accordance with Managing the risk of falls at workplace code of practice August 2019.
Ensure ladder will be set on a firm, flat surface, and if that is not possible ensure that the ladder has a safety device such as leg levellers, anti-slip guards and stabilisers.
Make sure the ladder can safely reach the work area without requiring the workers to stand higher than 900mm from the top.
A frame ladders should only be used when locked in the fully open position.
If using an extension ladder, secure it at the top and bottom, and if this isn't possible, have someone hold the ladder while it is in use.
Extension ladders should be angled at a ratio of 1:4. That is, position the base of the ladder 1 metre away from the structure for every 4 metres of height.
Do not climb or work past the second-last rung of a ladder, and never straddle the top of an A-frame ladder.
When climbing down, remain facing the ladder and climb to the bottom rung before stepping off.

If a fall from a ladder were to occur in the workplace the following procedures should be adhered to:
1. Stop work immediately
2. Check for danger to yourself, bystanders & the patient
3. Follow DRSABCD. Assess the situation and call triple zero (000) for an ambulance if required.
4. Notify client and Head Office and document incident

Keep the individual in the recovery position in a safe warm area.

Work Safely at Heights
Before works begin the following risk assessment should be completed in order to identify potential hazards:

Refer to Managing the risk of falls at workplace code of practice August 2019 for full methodology (Managing the risk of falls in housing construction August 2019)

Continued next page

What to do in case of a fall from heights:

Follow DRSABCD

1. Check area to ensure there is no further risk to individual (Danger)
2. Contact emergency services (triple 0) (Response)
3. Notify St Hilliers immediately (Send for Help)
4. Follow ABCD
   - Airway
   - Breathing
   - Cardiopulmonary resuscitation (CPR)
   - Defibrillation

Keep individual in the recovery position in a safe warm area

Work Safely at Heights (Scaffolding)

Before works begin on scaffold the following risk assessment should be completed in order to identify potential hazards:

1. Inspect the surrounding environment in which the scaffold is used, including ground conditions
2. Identify the major functional requirements of the scaffold including the maximum live and dead loads as well as the access requirements before use

DRSABCD

IN AN EMERGENCY CALL **TRIPLE ZERO (000)** FOR AN AMBULANCE

St John

D — Dangers?
Check for danger to yourself, bystanders and the patient.

R — Responsive?
Check for a response: ask name, squeeze shoulders.
No response? Send for help.
Response? Make comfortable, monitor breathing and response.

S — Send for help
Call triple zero (000) for an ambulance or ask a bystander to make the call.
Stay on the line.

A — Open Airway
Open the mouth and check the airway for foreign material.
Foreign material? Place in the recovery position and clear the airway.
No foreign material? Leave in position.
Open the airway by tilting the head back with a chin lift.

B — Normal Breathing?
Check for breathing: look, listen, feel for 10 seconds.
Not normal breathing? Ensure an ambulance has been called and start CPR.
Normal breathing? Place in the recovery position and monitor breathing.

C — Start CPR
30 chest compressions : 2 breaths.
Continue CPR until help arrives or the patient starts breathing.

D — Attach defibrillator
and follow the voice prompts.

Learn first aid | 1300 ST JOHN | www.stjohn.org.au

LEGISLATION **Act & Regulations** • Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017	**Codes** • First aid in the workplace code of practice January 2020 • Hazardous manual tasks code of practice August 2019 • How to manage work health and safety risks code of practice August 2019 • Managing electrical risks in the workplace code of practice August 2019 • Managing noise and preventing hearing loss at work code of practice August 2020 • Managing the risk of falls at workplace code of practice August 2019 • Managing the work environment and facilities code of practice August 2019 • Work health and safety consultation, coordination and cooperation code of practice August 2019 • Construction work code of practice August 2019 • Demolition work code of practice August 2019 • How to manage and control asbestos in the workplace code of practice August 2019 • How to safely remove asbestos code of practice August 2019 • Labelling of workplace hazardous chemicals code of practice August 2019 • Managing risks of hazardous chemicals in the workplace code of practice August 2019 • Managing the risks of plant in the workplace code of practice August 2019 • Moving plant on construction sites code of practice 2004 • Managing the risk of falls in housing construction August 2019 • Technical guidance code of practice 2001 • Work near power lines code of practice 2006 • Safe Work Australia How to Safely Removal Asbestos August 2019

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON

			INHERENT *RISK-RATING* ***(IR)*** *RESIDUAL RISK-RATING* ***(RR)***			
1. Planning & preparation	Lack of consultation may lead to potential outcomes for personal injury, property damage &/or environmental incident.	3H	• Liaise with Principal Contractor to establish the following on-site systems and procedures are in place and take note of: ○ Health and Safety rules. ○ Induction for all workers – site specific and toolbox meetings ○ Supervisory arrangements ○ Communication arrangements (mobile phone) ○ Temporary fencing ○ All relevant workers are appraised for required competencies & for any pre-existing medical conditions if working in remote or isolated locations ○ PPE required - Hard capped boots - Half face respirators (Non-Friable) - Eye protection - Disposable gloves - Disposable coveralls ○ Site plans – showing no go zones for pedestrians ○ Exclusion zones ○ Risk Assessments (Pre & Post job checks) ○ SWMS and JSA's ○ Injury reporting procedures ○ Hazard reporting procedures.	2M		Head-office
	Exposure to asbestos	3H	• Prepare a separate Asbestos Removal Control Plan specific to the site and provide copies to the principal contractor, occupants (domestic premises) and be accessible on site for the duration of the job • Determine presence of asbestos/ACM: ○ Competent person to identify if asbestos present ○ Obtain as much information as possible on the location, type and condition of asbestos/ACM ○ Obtain a copy of the asbestos register for the site ○ Take notes and photographs for future reference and / or inclusion in the asbestos register.	2M		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT *RISK-RATING* ***(IR)*** *RESIDUAL RISK-RATING* ***(RR)***			

1. Planning & preparation *- Continued*	Exposure to asbestos.	3H	○ **NOTE**: Ensure regulator is notified at least 5 days prior to commencement of work. ○ Consultation in relation to start time, hazards and risks. Ensure: ○ If represented by an elected Health and Safety Representative (HSR), they must be included in any consultation ○ Discuss potential hazards and risks associated in the removal with: ○ The person you are carrying out the work for ○ Other businesses operating at or in the vicinity of the removal ○ Occupants of premises in the vicinity of the removal ○ Any other person on site (trade or otherwise) who is affected by working with the asbestos is consulted and co-operative arrangements are made if necessary (e.g. other trades may need to relocate temporarily or reschedule work) ○ Document consultation and action items.	2M	Notification:	Head-office Appointed Supervisor
	Working at Heights > 2m		• If working on or erecting height access equipment for this task e.g., EWP, Scaffolding etc., ensure there are separate, dedicated SWMS in place for set-up/erection and that all workers/employees have relevant training and licensing. • Scaffold should look like picture (left) when set up properly		Ensure competent person erecting scaffold is compliant with manufacturer's instructions	
	WHS Regulation	3H	Clause 468(3)(a & b): The person must take all reasonable steps to ensure that the following persons are informed that asbestos removal work is to be carried out at the workplace and when the work is to commence, before the work commences— anyone conducting a business or undertaking at, or in the immediate vicinity of, the workplace, anyone occupying premises in the immediate vicinity of the workplace.	2M		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)						
		3H		2M		Head-office

2. Training and Capabilities	Lack of training or the assessment of capability may lead to personal injury, property damage &/or environmental incident.		● Check workers are in fit condition to work i.e. no signs of fatigue, alcohol or drugs. ● Ensure all persons entering site have a General Construction Induction Card (white card) ● Ensure all relevant workers have undertaken training and/or received instruction in the use of control measures. Include: ○ Reporting procedures for incidents ○ Correct use of equipment including selecting, fitting, use, care of and maintenance ○ Use of supervision where required (e.g., new starters or new equipment) ○ Correct use of all tools used ○ Ensure supervisors, foremen etc. are suitably experienced in the type work to be conducted ○ Asbestos Removal Control Plan ○ All workers are trained in this SWMS.		Pre-start toolbox to ensure everybody knows what to do.	Appointed Supervisor
	Working at heights > 2m.	4A	● If working on or erecting height access equipment for this task e.g., EWP, scaffolding etc., ensure there are separate, dedicated SWMS in place for set-up/erection and that all workers/employees have relevant training and licensing.	2M		Head-office Appointed Supervisor
	Requirement under the WHS inspection (by the regulator) on site	3H	Requirement under the WHS Regulation to check asbestos removal licenses and training and keep copies of such available for inspection (by the regulator) on site.	2M		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)						

3. Assess onsite conditions	Lack of a clear assessment may lead to personal injury, property damage &/or environmental incident.	3H	• Ensure site-specific induction is undertaken (include location of amenities, first aid facilities, emergency plans and evacuation points, incident reporting, communication, contact persons etc.) • Assess mobile phone reception (alternative emergency communications procedures in place if no reception available) • Work site is exactly as detailed in Terms of Agreement or contract • Suitable access for all equipment required • Suitable space for operation of equipment • Suitable lighting, including night-works (include flood lighting and operator head lamps as applicable). • Conduct risk assessment to identify potential hazards such as: o Work at heights (above 2m) o Unstable footing (e.g., wet slippery surface, sloping surfaces) o Heat stress o Severity of the risk of the ACM breaking or being released uncontrollably o Electrical equipment o Asbestos damaged or in poor condition. o Location of existing services (heating, water, pipes, electrical leads) o Temperature etc. o Exposed electrical switchboards/power points o Load bearing capacity of support walls, ceiling, and roof	2M	Ensure relevant electrical & plumbing is disconnected prior to start.	Head-office Appointed Supervisor Labourers

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			
3. Assess onsite conditions - Continued	Environmental conditions	3H	• Appropriate protective clothing • Wear hand protection • Wear non-slip footwear (slippery surfaces) • Adequate breaks – set break times 9 – 9.15 am & 12 – 12.30 pm (Supervisor in charge of calling these break times) • Check weather conditions – do not work in extreme conditions • Cold: ○ Encourage workers to have adequate warm drinks ○ Access to warm shelter during breaks • Heat: ○ Sun brim on hard hat ○ Safety glasses – UV Rated ○ Use 30+ sunscreen on exposed skin areas ○ Adequate drinking water. ○ Look out for signs of heat stress – Refer to section on heat stress	2M		Appointed Supervisor Labourers
	PPE in Removal Areas	3H	○ PPE required - Hard capped boots + boot covers - Half face respirators - Eye protection - Sun protection - Face protection - Disposable gloves - Disposable coveralls	2M		Appointed Supervisor Labourers

Job Step	Potential Hazard/s	IR	Control Measures to Reduce Risk	RR	Site Specific Considerations	Responsible Person
			Inherent Risk-rating (IR) Residual Risk-rating (RR)			
4.Prepare the work area	Unauthorised access	3H	● Ensure a suitably qualified asbestos supervisor is available. ● Cordon off working area with appropriate barriers and place warning signage. Consider: ○ Signs should state, “Do not enter – Asbestos” or similar ○ No-go zones for pedestrians or other unauthorised personnel ○ Type and quantity of signage and barricades to prevent entry at main points e.g., *DANGER*-tape or solid barriers ○ Distance from asbestos location based on asbestos type and risk from method of removal or potential escape ○ This should remain until clearance certificate has been issued.	2M		Appointed Supervisor
	Contamination (personnel)	3H	○ Establish area for personal decontamination, ensure: ○ Decontamination area set up on site ○ Cleaning facilities adequate (running water, soap) accessible in toilets on site located at nearest available facility. ○ Restrict access to area for duration	2M		Appointed Supervisor
	Contamination (work area)	3H	• Removal work area: ○ Remove all unnecessary items from area ○ Remove all fixtures ○ If in internal area, close doors, windows and other openings as required ○ Use plastic sheeting to cover surfaces that may become contaminated ○ Thick plastic sheeting (e.g. 200µm micron) ○ Turn off fans, or control where possible excess air movement from air-conditioning or natural sources.	2M		Appointed Supervisor
	Exposure to asbestos	3H	Ensure for removal area of Asbestos: • All vents, windows, air conditioning units are closed and covered • All pipes, conduits in working areas are sealed adequately • Heavy duty (at least) 200 micron) plastic is used • Adequate lighting is provided • All joints where present have at least 300mm overlap & are sealed with doubled sided tape and duct tape • Attach the polythene sheeting to non-asbestos surfaces with duct tape. • Floor is of adequate strength to prevent penetration (such as woven plastic)	2M		Appointed Supervisor

Job Step	Potential Hazard/s	IR	Control Measures to Reduce Risk	RR	Site Specific Considerations	Responsible Person
			Inherent Risk-rating (IR) Residual Risk-rating (RR)			

4.Prepare the work area - Continued	Inhalation of dust or fibres – asbestos	4A	Determine and supply appropriate respiratory protection. Seek advice from competent person for required level of protection. • Removal of non-friable asbestos sheeting etc.: half face respirator P3	2M	Clean shaven for proper fit of mask. Workers are trained in the use of respirators.	Head Office Appointed Supervisor Labourers
	Asbestos waste	3H	• Allocate a suitable area for an Asbestos Waste Site: o Suitable access/egress o Secure area that does not block access/egress or essential services o As close to work site as possible o Large, flat, open space o Space for salvage and waste • Determine safe travel routes: o Mark out pedestrian exclusion zones using barricades / signs • Ensure waste disposal bags are stored on the truck. • Double bag only • Asbestos waste disposal bags and containers (waste disposal bags must be clear plastic 200 µm thick and labelled ***'Caution Asbestos – Do not open or damage bag.'*** • *Double bag and goose neck the bag then safely place on truck.* • All asbestos related waste will be tipped at an approved waste facility and tracked with an EPA Waste Consignment	2M		Head Office Appointed Supervisor
	Work adjacent to road & public safety	4A	• Park working vehicle in driveway or allocated parking to avoid travelling across roads when delivery working equipment • If setting up roadside – comply with local laws and permits • Erect any barriers & signage necessary to keep others safe and aware.	2M	Liaise with client on site if required.	Appointed Supervisor
	Property damage	3H	• Ensure equipment is not placed in areas where they may be run over, damaged or exposed to water (unless rated for wet environments). • Keep power leads up off the ground and out of the way.	2M		Appointed Supervisor Labourers

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
*INHERENT RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)***						

4.Prepare the work area
- Continued
	Working with power & hand tools	3H	• Choose tools for removal to prevent generation of fibres (such as, chisels, hammer, crowbar and pinch bar, and low powered drill)
			• Ensure standard operations procedure is available, read and understood
			• Pre-inspect and operate power tools as per manufacturer's instructions
			• Ensure equipment rated for atmospheric requirements (water, or explosion-proof for flammable zones)
			• Ensure tool suitable for task:
			  ○ Suited to the material. E.g.: steel, wood, MDF, plastic
			  ○ Not too powerful for a task.
			  ○ Sufficient power for task – excessive force not required
			• Safety Devices:
			  ○ Low impact tools where possible
			  ○ Single operation when trigger pressed
			  ○ Guards in place, undamaged, retracts and cover danger areas. Perspex guards not cracked and allow visibility
			  ○ E-stops and other devices functional and tested
			• Ensure all cutting tools sharp and in good order
			• Ensure vacuum cleaners:
			  ○ Are wet/dry industrial (not domestic)
			  ○ Have High Efficiency Particulate Air **(HEPA)** filters.
			Note: the following items are prohibited:
			• High speed power or pneumatic tools
			• High pressure water cleaners
			• Brooms and brushes (unless these items are used for sealing purposes)
			• Compressed air.
				2M		Head office
						
						Appointed Supervisor

	Noise		When choosing hearing protection for operators consider: • Overprotecting by cutting out too much sound can cause difficulties hearing other sounds needed to work safely • Earmuffs can be uncomfortable to wear in hot environments wearing PPE can make it difficult for the worker to wear a helmet • That long hair must be tied back so it does not impact on the correct fit. Wear hearing protection as required, ensure it is: • Worn by all persons throughout the period of exposure to noise • Suitable for the type of working environment and the work tasks • Comfortable and correctly fitting for the worker Regularly inspected and maintained to ensure it remains in good, clean condition.			

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			

4.Prepare the work area - Continued	Set Up	3H	Penetrations and openings into other areas, voids or tenancies must be covered with 200 um thick polythene	2M		Appointed Supervisor Labourers
	Isolation of electrical and fire protection services	3H	• Electrical must be disconnected by client prior to job start. • Fire extinguisher must be available for duration of works	2M		Client & Supervisor
	Lighting equipment	3H	Confirm all staff are equipped with adequate lighting			Supervisor
	Access to water		Water supply to be provided on site extension hoses to be provided by Serve Group if required. Employees working onsite will have spray bottles with water.			Supervisor
	Power source		Power source onsite is to be determined prior to job start. If a generator is required but has not been included, we will supply a generator at an extra cost to the client.			Supervisor

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			

5.Enter contaminated area	Exposure to asbestos	3H	Coveralls: • No pockets / velcro • Good quality (can't be easily torn) • Type 5, Category 6 (protection level) • 1 size bigger to prevent ripping • Cuffs sealed with duct tape • Leg cuffs are not tucked into boots • Hood is worn over respirator straps. Gloves: • Disposable (single use) • Dispose of as asbestos waste • Wash hands and fingernails after work. Footwear • Lace less safety boots or gumboots covered with boot covers • Only cleanable (e.g., not suede) • Remain in dirty decontamination area • Stored upside down when not in use • Are not used for non-asbestos work.	2M		Appointed Supervisor Labourers

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			

6. Asbestos Removal	Airborne asbestos fibres	3H	• Adopt an appropriate method / technique to minimise the production of airborne asbestos fibres specific to the site: • Wet spray method - asbestos fibres are substantially suppressed but they are not entirely eliminated so the use of respiratory protective equipment (RPE) is essential • Dry method - can only be used if the wet spray method is not suitable, e.g. if there are live electrical conductors or if equipment could be permanently damaged or made dangerous by contact with water. • Where possible, utilise wet methods over dry methods. <u>Follow asbestos removal control plan:</u> • Use methods that suppress dust generation • Do not use high speed tools such as grinders • ACM should be wetted using a fine water spray as you work • Keep material intact where possible. Unnecessary breaking of ACM is not recommended • Asbestos material should be removed whole • If some sections have been damaged prior to removal, these may be strengthened by applying duct tape • If breakage is absolutely necessary to remove / dislodge the product, dampen the material and minimise breakage • Ensure sufficient support for the asbestos containing product as it's being removed. • Wet wipe the area and other surfaces if required • Remove the asbestos containing product wet/damp by applying a fine water spray, unless this creates an electrical risk • Once removed from its position, spray the back of the product with a fine water spray. • Angle grinders should not be used because of the potential for damage to the asbestos containing material and subsequent fibre release.			Appointed Supervisor

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
*INHERENT RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)***						

6. Asbestos Removal- Continued	Air quality	3H	Ensure that the asbestos removal works do not impact on air quality in the surroundings: • Air monitoring is optional for non-friable works • If required the asbestos removal work does not commence until the air monitoring is started by an independent licensed asbestos assessor. • Air monitoring will be set outside building, around removing zones (Total of 4 devices per day as per Hygienist) • Refer to below document for air monitoring controls	2M		Appointed Supervisor

Results of the air (control) monitoring

WHS Regulation clause 476

Action if respirable asbestos fibre level too high

As a licensed asbestos removalist you must take action depending on the respirable fibre levels reported in control monitoring results. Where the results show that respirable asbestos fibre levels exceed the action levels outlined in Table 2, regardless of whether removal has commenced, action must be taken immediately.

Table 2 Air monitoring action levels

Action level	Control	Action
Less than 0.01 fibres/mL	No new control measures are necessary	Continue with control measures.
At 0.01 fibres/ml or more than 0.01 fibres/mL but less than or equal to 0.02 fibres/mL	1. Review	Review control measures.
	2. Investigate	Investigate the cause.
	3. Implement	Implement controls to eliminate or minimise exposure and prevent further release.
More than 0.02 fibres/mL	1. Stop removal work	Stop removal work.
	2. Notify regulator	Notify the relevant regulator by phone followed by a written statement that work has ceased and the results of the air monitoring.
	3. Investigate the cause	For example, conduct a thorough visual inspection of the enclosure (if used) and associated equipment in consultation with all workers involved with the removal work.
	4. Implement controls to eliminate or minimise exposure and prevent further release	For example, extend the isolated/barricaded area around the removal area/enclosure as far as reasonably practicable until fibre levels are at or below 0.01 fibres/mL, wet wipe and vacuum the surrounding area, seal any identified leaks (e.g. with expandable foam or adhesive (cloth or duct) tape) and smoke test the enclosure until it is satisfactorily sealed.
	5. Do not recommence removal work until further air monitoring is conducted	Do not recommence until fibre levels are at or below 0.01 fibres/mL.

Job Step	Potential Hazard/s	IR	Control Measures to Reduce Risk	RR	Site Specific Considerations	Responsible Person
			Inherent Risk-rating (IR) Residual Risk-rating (RR)			
6. Asbestos Removal- Continued	Working with power tools / drilling asbestos	3H	• Use a non-powered hand drill or low speed battery-powered drill where possible (do not use high speed drill) If required, battery powered drills should be fitted with a local exhaust ventilation (LEV) dust control hood wherever possible • Asbestos material should be removed whole. If some sections have been damaged prior to removal, these may be strengthened by applying duct tape • Identify the method in which the asbestos containing product is held in place, then use a method that would minimise airborne dust generation in removing the product • For example: o Fasteners: dampen then carefully remove using a chisel o Bolts: dampen then use bolt cutters (or an oxy torch) – do not use an angle grinder o Screws: dampen then carefully unscrew with a screwdriver o Nails: dampen then carefully lever the panel or punch through if absolutely necessary.	2M		Appointed Supervisor Labourer
	Environmental impact	3H	• Use HEPA vacuum in removal area • Wet wipe wherever necessary • Decontamination area for Non-Friable is packed up then wrapped in an asbestos bag and disposed of with the Non-Friable waste	2M		
	Slips, trip & falls	3H	• Frequent application of a fine water spray may be required depending on the circumstances (for example, a very hot day) but be careful not to create a slip hazard • Asbestos containing material can become brittle with age, so any removal work on roofs should address the risk of fall hazards • Suitable fall restraints should be utilized while working at heights, separate Working at Heights SWMS will be provided where required. • Ensure regular clean-up, housekeeping to avoid slips, trips, falls.	2M		Appointed Supervisor Labourer

	Handling waste	3H	• Dispose of nails, screws etc. as per other contaminated waste • Dispose of any other associated material such as dried adhesives, sealants etc as per other contaminated waste • Only half fill waste bags and tie off and seal with duct tape • Dispose of asbestos as above • Remove and place in double layer labelled waste bags. • Use mechanical aids where possible • Two man lift team or team lifting for heavy items • Bend knees when lifting • Safely transport the asbestos waste to the truck. Items are wrapped before movement.	2M		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			
7. Exit contaminated area/removal site	Exposure to asbestos	3H	• Use appropriate PPE • Use an H Class HEPA filter vacuum • Use wet wipes • Use decontamination area • Disposable PPE must be disposed of as contaminated. Double bagged disposed of as hazardous waste	2M		Appointed Supervisor Labourer

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			
8. On- completion	Exposure to asbestos	3H	• Competent person or licensed asbestos assessor must deem the area clean • If air monitoring must be carried out as part of the clearance inspection, a clearance certificate should be issued by the hygienist if satisfactory. ○ The results must show that the respirable asbestos fibre level is below 0.01 fibres/ml. ○ Refer to page 23 for control levels	2M		Head office Appointed Supervisor
	ACD		Respiratory protective equipment should be used until all contaminated disposable coveralls and clothing has been removed and bagged for disposal, and personal washing has been completed. ● If necessary, use damp rags and/or an asbestos vacuum cleaner to clean any remaining visibly contaminated sections of the asbestos work area ● Use damp rags to wipe down asbestos-contaminated areas and equipment ○ *Note: Cleaning rags should only be used once, although they may be re-folded to expose a clean surface* ● Carefully roll or fold any plastic sheeting used to cover any surface within the asbestos work area, so as not to spill that has been collected ● Start cleaning from the top and work down cleaning ledges, sills & high flat areas where settle. ● Start cleaning and removing plastic from the furthest work point from exit and working towards the exit point. ● Place debris, used rags, plastic sheeting and other waste in the asbestos waste bags. ● Wet wipe the external surface of the asbestos waste bags to remove any adhering contamination before they are removed from the asbestos work area. ● If possible, fully dismantle tools and decontaminate using appropriate method in a controlled environment. ● If not possible due to location or other constraints, tools should be tagged to identify contamination and placed in double bags and sealed until reused or decontaminated.	2M		Appointed Supervisor Labourer

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			
8. On- completion - Continued	Personal contamination	3H	• Go to decontamination area, follow section 4.6 of Code of Practise- how to safety remove asbestos 2019 • Use HEPA vacuum cleaner to remove obvious signs of contaminated material • Wipe shoes, eye protection with damp cloth • Wipe respirator with damp cloth – but do not remove • Remove coveralls, shoes and any other PPE • Remove respirator • Wash face and hands with soapy water. Pay attention to under the fingernails • All asbestos-contaminated tools and equipment are stored in labelled, impervious containers and only used for asbestos work containers.	2M		Appointed Supervisor Labourer
	Slips, trips, falls causing injury	3H	• Clean up tools and any waste ensuring the site is left in clean and tidy condition • Clean debris and ensure larger cut-offs are removed from area.	2M		
	Contamination of waterways and water catchment	3H	Dispose of contaminated rags, coveralls, etc. in impervious plastic bags that are labelled and follow state and local waste laws. It is prohibited to take contaminated clothing home for laundering (this must be done by licensed facility). *Ensure* • Dispose of asbestos materials in trucks provided onsite • Dispose of empty containers / bags in approved waste containers • Do not wash out tools or containers where residue can enter waterways or drains.	2M		
	Public Safety	3H	Only remove barricades once the clearance certificate has been issued.	2M		

This SWMS has been developed in consultation and cooperation with *employee/workers* and relevant *Employer/Persons Conducting Business or Undertaking (PCBU).* I have read the above SWMS and I understand its contents. I confirm that I have the skills and training, including relevant certification to conduct the task as described. I agree to comply with safety requirements within this SWMS including risk control measures, safe work instructions and PPE described.

OVERALL RISK RATING AFTER CONTROLS	☐ 1 LOW	☐ 2 MODERATE	☐ 3 HIGH	☐ 4 ACUTE

WORKERS' NAME	JOB ROLE / POSITION	LICENCES, COMPETENCIES & QUALIFICATIONS *(add as applicable)*			DATE	SIGNATURE
		TYPE / DESCRIPTION	CLASS	NUMBER		
Choose an item.	Supervisor	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				

COVID – 19 Procedures

Sick leave arrangements:

- If you have cold or flu symptoms, such as coughing, sneezing, or fever, or feel unwell, do not come to the workplace.
- If you have any of the above symptoms you will need to get a COVID test and self-isolate for at least 3 days (or until you receive negative results) before returning to the workplace
- If the Covid-19 test is returned positive, you must immediately contact your supervisor and remain in self-isolation until fully cleared by a doctor.
- If you need to provide care to a family member infected by COVID-19, request work from home. You'll only be permitted to return to the office 14 calendar days after your family member has fully recovered, provided that you're asymptomatic or you have a doctor's note confirming you don't have the virus.

General hygiene rules:

- Wash your hands after using the toilet, before eating, and if you cough/sneeze into your hands (follow the 20-second hand-washing rule).
- Cough/sneeze into your sleeve, preferably into your elbow. If you use a tissue, discard it properly and wash / sanitize your hands immediately.
- If you find yourself coughing / sneezing on a regular basis, leave the base and follow the above guidelines.

SERVE GROUP LICENSES

NSW GOVERNMENT

FRIABLE ASBESTOS REMOVAL LICENCE

Issued under the *Work Health and Safety Regulation 2011 (NSW)*.This licence is not transferable.

Licence:	AD213326
Licence period:	From: 29/08/2019 To: 28/08/2024
Licence holder name:	Serve Group Pty Ltd
ABN:	30 159 209 024
ACN:	159 209 024
Address:	23 Porter Circuit MILTON NSW 2538

Description of the work that can be undertaken under this licence

- All friable asbestos removal work
- All non-friable asbestos removal work

Licence holder obligations

A nominated supervisor must be present at the site whenever licenced friable asbestos removal work is being carried out and readily available to attend the site when licenced non friable asbestos removal work is carried out.

This licence must be available for inspections at all times.

All licenced asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.

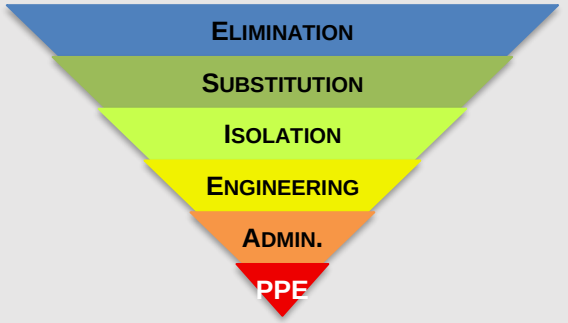
The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

WORKING AT HEIGHTS SAFE WORK METHOD STATEMENT (SWMS) PART 1	
ACTIVITY: REMOVAL AND DISPOSAL AC BONDED EXTERNAL LOUVERS TO SUTHERLAND HOSPITAL (50 IN TOTAL) AT THE BELOW MENTIONED ADDRESS	**JOB** #: 13918
BUSINESS NAME: SERVE GROUP PTY LTD T/A ASBESTOS REMOVAL SYDNEY	**BUSINESS** #: 30 159 209 024
BUSINESS ADDRESS: 74 ANDERSON ROAD, MORTDALE NSW 2223	
BUSINESS CONTACT: MATT PRONK	**PHONE** #: 1300 119 233
SWMS APPROVED BY: EMPLOYER / PCBU / GENERAL MANAGER	
NAME: MATHEW PRONK	
SIGNATURE: 	**DATE**: WEDNESDAY, NOVEMBER 24, 2021
PERSON/S RESPONSIBLE FOR ENSURING COMPLIANCE WITH SWMS: MATHEW PRONK	
PERSON/S RESPONSIBLE FOR REVIEWING & PREPARING THE SWMS: SHARON BALDWIN	
ALL PERSONS INVOLVED IN THE TASK MUST HAVE THIS SWMS COMMUNICATED TO THEM BEFORE WORK COMMENCES.	
Daily Toolbox Talks will be undertaken to identify, control and communicate additional site hazards.	
Work must cease immediately if incident or near miss occurs. SWMS must be amended in consultation with relevant persons.	
Amendments must be approved by Mathew Pronk and communicated to all affected workers before work resumes.	
SWMS must be made available for inspection or review as required by WHS legislation.	
Record of SWMS must be kept as required by WHS legislation.	
PRINCIPAL CLIENT DETAILS	
CLIENT: ANDREW VAN GORP – NOBLE WORKS	**PROJECT NAME**: 13918 / **DATE SWMS PROVIDED TO PC**: 23/11/2021
PROJECT ADDRESS: KINGSWAY & KAREENA ROAD, CARINGBAH (SUTHERLAND HOSPITAL)	
SWMS SCOPE: This SWMS covers risk management processes and procedures that need to be followed when preparing to work at height. Covered in this document is planning and preparation, pre-start inspections, operational considerations and emergency management procedures. Due to the high-risk nature of working at height, height equipment specific SWMS will need to be implemented for these tasks prior to commencing the activity.	

THIS WORK ACTIVITY INVOLVES THE FOLLOWING "HIGH RISK CONSTRUCTION WORK"			
☐ Confined spaces	☐ Mobile plant	☐ Demolition	☒ Asbestos
☐ Using explosives	☒ Working at Heights	☐ Artificial extremes of temperature	☐ Tilt up or pre-cast concrete
☐ Pressurised gas distribution mains or piping chemical, fuel or refrigerant lines energised electrical installations or services			
☐ Structures or buildings involving structural alterations or repairs that require temporary support to prevent collapse			
☐ Involves a risk of a person falling more than 2m, including work on telecommunications towers			
☐ Working at depths greater than 1.5 Metres, including tunnels or mines		☐ Work in an area that may have a contaminated or flammable atmosphere	
☐ Work carried out adjacent to a road, railway or shipping lane, traffic corridor		☐ In or near water or other liquid that involves risk of drowning	

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED.
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before commencing work.
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Maintain control measures.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1 LOW	Record and monitor.

HIERARCHY OF CONTROLS



MOST EFFECTIVE

LEAST EFFECTIVE

PERSONAL PROTECTIVE EQUIPMENT (PPE):

ENSURE ALL PPE MEETS RELEVANT AUSTRALIAN STANDARDS. INSPECT, AND REPLACE PPE AS NEEDED.

FOOT PROTECTION	HARD HATS	DISPOSABLE HALF-FACE RESPIRATOR	EYE PROTECTION	FACE PROTECTION	HAND PROTECTION	PROTECTIVE CLOTHING	SUN PROTECTION	FALL ARREST	HEARING PROTECTION	Rings, watches, jewellery that may become entangled in machines must not be worn. Long and loose hair must be tied back.
										
☒	☒	☐	☒	☒	☒	☒	☒	☒	☐	☒

EMERGENCY PROTOCOLS				
REMOVALIST NAME: SERVE GROUP PTY LTD T/A ASBESTOS REMOVAL SYDNEY		Licence Number: AD213326		
Site Supervisor: TBD		**Contact number**: Choose an item.	**Start Date: 01/12/2021**	**Completion date: 24/12/2021**
Onsite Documentation available?	☒ Removal License	☒ ARCP	☒ SWMS	

Emergency Evacuation assembly point	By the truck. If the truck is not accessible, then all employees to follow the nominated supervisors' directions
First Aid Location	Where the decontamination area is set up.
Emergency Facilities (Nearest hospital)	Sutherland Hospital
Contact Number	(02) 9540 7111
Consultation will be undertaken within the following persons at premises where demolition takes place:	☒ The Client ☐ The Principal ☒ Neighbours ☐ The occupying employer ☐ Their employees ☐ Safety committee or ESR ☐ Other contractors on site ☐Other authority
Boundary	☒ Warning signs ☒ Barricades/ safety tape ☐ Security fencing ☐ Boundary
UPON COMPLETION A COPY OF THE PLAN AND RELEVANT DOCUMENTS HAVE BEEN SENT TO: ☒ CUSTOMER NAME ☐ HYGIENIST ☐ CONTRACTOR ETC	

JOB INFORMATION

MATERIAL	LOCATION	CONDITION
☒ Flat AC Sheet	☐ Indoors	☐ Good
☐ Corrugated AC Sheet	☐ Outdoors - protected	☐ Extensive breakages
☐ Formed AC products	☒ Outdoors - exposed	☐ Minor breakages
☐ Lagging	☐ Trench / pit	☒ Weathered
☐ Sprayed insulation	☐ Ducts - enclosed	☐ Painted
☐ Vinyl tiles	☐ Roof	☐ Unsealed
☐ Labelled	☐ Fence	☐ Fire damaged
☐ Others (Non-Asbestos Demolition)	☐ Other (specify)	☐ Other (specify)

REMOVAL METHOD	☒ Wet ☐ Dry
EQUIPMENT	**Spray Equipment** ☐ Low pressure trigger ☒ Hand pump ☒ Vacuum Equip. complies with AS/NZS 60335.2.69. ☒ All equipment used in the ACM removal are inspected before all removal work and inspected and cleaned following all removal work. **Hand Tools** ☒ Hammer ☒ Crowbar ☐ ☐ ☒ Screwdriver ☒ Stanley knife with retractable blades ☐ ☐ ☐ Sledgehammer ☐ ☐ ☐ **Power Tools** ☐ Jack Hammer ☐ Concrete saw ☐ ☐ ☐ Drill ☐ ☐ ☐ ☐ Reciprocating saw ☐ ☐ ☐

DECONTAMINATION METHODS	WET WIPE	VACUUM	DRY	WASH	WATER SPRAY	DISPOSED	OTHER (SPECIFY)
ACM REMOVAL AREA	☒	☒	☐	☐	☒	☒	
PERSONNEL	☒	☐	☐	☒	☐	☐	
EQUIPMENT	☒	☐	☐	☒	☐	☐	
NON-DISPOSABLE PPE	☐	☐	☐	☒	☐	☐	
SOIL	☐	☐	☐	☐	☐	☐	

First Aid Officer	Qualification	Expiry	Supervisor	Contact Number
Appointed Supervisor	HLTAID001/2/3	August 2023	Choose an item.	Choose an item.
☒ First-aid kit	☒ Fire extinguisher	☐ Falls rescue equipment	☐ Communication System (mobile phone)	

KEY PERSONNEL (24 Hour Contact)		
Head Office	admin@servegroup.com.au	1300 119 233
Mathew Pronk	generalmanager@servegroup.com.au	0499 978 737
Wade Rogers	wade@servegroup.com.au	0420 978 737

Removal and disposal AC bonded external louvers to Sutherland Hospital (50 in total)

Client to provide boom lift to perform works.

Identified Emergency situations (indicate if any of the following safety issues have been identified during the planning for demolition)

☒ Electrocution
☒ Heat Stress
☐ Confined Space
☐ Pedestrians
☒ Fall
☒ Fall from Heights
☒ Fall from Ladder
☒ Manual Handling
☐ Plant & Equipment
☐ Fall from roof
☒ Work Safely at Heights & Scaffold
☐ Sharp Objects
☐ Slips, trips and falls

Hazard Control Measures & Emergency Procedures

If work is to be conducted on a construction site (or a site controlled by another Employer / PCBU) follow the site-specific Emergency Management Plan. Ensure:

- Adequate numbers of first aid trained staff are on site
- First aiders are trained & competent in managing injuries until emergency services arrive
- All rescue equipment is in good condition, available for use and in close proximity to the work site.

Ensure workers have access to:

- First aid kit/supplies
- First Aid trained personnel familiar with resuscitation and emergency response for electric shock
- M/SDS
- Communication devices (check mobile phones will have service in area)
- Suitable fire protection equipment.

Electrocution

Control measures and preventative steps regarding electrical hazards

- Inspect wiring of equipment before each use. Replace any damaged or frayed cords immediately
- Ensure test & tag is up to date
- Ensure wires are completely isolated (Licensed Electrician to complete)
- If electrical equipment were to be used on site, ensure safe work practices are implemented
- Ensure all individuals on site know the location and how to operate shut-off switches and/or circuit breaker panels.
- Where possible the use of extension cords should be reduced.

To deal with electrocution - What to do:
1.Check for danger to yourself, bystanders & the patient
2.Switch off power, if possible, before trying to help the patient
3.If the patient is in contact with high voltage lines, do not approach but wait until power is disconnected by authorized electrical personnel.
4.If power cannot be switched off quickly, remove the patient from the electrical supply without directly touching them. Use a non-conductive, dry material (eg a dry wooden broom handle)
5.Follow DRSABCD. Call triple zero (000) for an ambulance.
6.Hold any burnt area under cool running water for 20 minutes.
7.Remove jewellery and clothing from burnt areas, unless stuck to the burn.
8.Cover the burnt area with a loose and light nonstick dressing, preferably clean, dry, non-fluffy material such as plastic cling film.
9.Seek medical aid

Heat Stress

Heat-related hazards can be created from working in enclosures or confined spaces or using
PPE. The following factors can lead to heat stress, including temperature, humidity, air movement, exposure to a heat source, work activities and demands, how long the PPE has been worn, and individual physical factors.
Control measures to help prevent heat stress include:

- Selecting appropriate PPE to reduce the build-up of heat
- Providing an adequate number of extraction units in enclosures
- Scheduling appropriate work breaks (Adequate breaks – set break times 9 – 9.15 am & 12 – 12.30 pm Supervisor in charge of calling these break times)
- Employee rotation
- Making cool drinks readily available outside the vicinity of the works being completed
- Providing a cool, shaded rest area and
- Educating workers about heat stress risks and controls

If heat exhaustion were to occur in the workplace the following procedures should be adhered to:

1. The person should be removed from the heat area and placed in a shady or airconditioned place
2. The individual should be laid down, with legs and feet elevated slightly
3. Remove tight or heavy clothing
4. Ensure the individual drinks cool water or other non-alcoholic beverage without caffeine
5. Cool the person by spraying cool water or fanning
6. Notify client
7. Monitor the individual carefully
8. If symptoms were to worsen and do not improve within one hour, contact emergency services.

Manual handling

The following steps are in accordance to the Code of Practice Hazardous Manual Tasks August 2019

1. Ensure all individuals all reasonably fit to carry out works prior to job start
2. When lifting items, it is essential to keep relaxed and ensure the upward movement starts with the head
3. Lifting movement should be as smooth and progressive as possible, thus using the power of the legs to perform the lifting
4. Once lifted the item should be close to the body, thus no twisting movement of the body should be made
5. When carrying items such as double wrapped bags and other equipment grip should be secure and arms should be kept within the boundary of the body
6. When conducting movement on site ensure the spine, shoulders and knees are always kept in its normal alignment
7. Ensure all appropriate footwear is utilised for the task, thus place feet apart to ensure the individual is balanced at all times

Fall from ladder

Carry out a risk assessment to assess if the work can be done from the ground, and if not, how they can safely access the work area in accordance with Managing the risk of falls at workplace code of practice August 2019.
Ensure ladder will be set on a firm, flat surface, and if that is not possible ensure that the ladder has a safety device such as leg levellers, anti-slip guards and stabilisers.
Make sure the ladder can safely reach the work area without requiring the workers to stand higher than 900mm from the top.
A frame ladders should only be used when locked in the fully open position.
If using an extension ladder, secure it at the top and bottom, and if this isn't possible, have someone hold the ladder while it is in use.
Extension ladders should be angled at a ratio of 1:4. That is, position the base of the ladder 1 metre away from the structure for every 4 metres of height.
Do not climb or work past the second-last rung of a ladder, and never straddle the top of an A-frame ladder.
When climbing down, remain facing the ladder and climb to the bottom rung before stepping off.

If a fall from a ladder were to occur in the workplace the following procedures should be adhered to:
1. Stop work immediately
2. Check for danger to yourself, bystanders & the patient
3. Follow DRSABCD. Assess the situation and call triple zero (000) for an ambulance if required.
4. Notify client and Head Office and document incident

Keep the individual in the recovery position in a safe warm area.

Work Safely at Heights

Before works begin the following risk assessment should be completed in order to identify potential hazards:

Refer to Managing the risk of falls at workplace code of practice August 2019 for full methodology (Managing the risk of falls in housing construction August 2019)

Continued next page

What to do in case of a fall from heights:

Follow DRSABCD

1. Check area to ensure there is no further risk to individual (Danger)
2. Contact emergency services (triple 0) (Response)
3. Notify client immediately (Send for Help)
4. Follow ABCD
   - Airway
   - Breathing
   - Cardiopulmonary resuscitation (CPR)
   - Defibrillation

Keep individual in the recovery position in a safe warm area

Work Safely at Heights (Scaffolding)

Before works begin on scaffold the following risk assessment should be completed in order to identify potential hazards:

1. Inspect the surrounding environment in which the scaffold is used, including ground conditions
2. Identify the major functional requirements of the scaffold including the maximum live and dead loads as well as the access requirements before use

DRSABCD

IN AN EMERGENCY CALL **TRIPLE ZERO (000)** FOR AN AMBULANCE

St John

D — **Dangers?**
Check for danger to yourself, bystanders and the patient.

R — **Responsive?**
Check for a response: ask name, squeeze shoulders.
No response? Send for help.
Response? Make comfortable, monitor breathing and response.

S — **Send for help**
Call triple zero (000) for an ambulance or ask a bystander to make the call.
Stay on the line.

A — **Open Airway**
Open the mouth and check the airway for foreign material.
Foreign material? Place in the recovery position and clear the airway.
No foreign material? Leave in position.
Open the airway by tilting the head back with a chin lift.

B — **Normal Breathing?**
Check for breathing: look, listen, feel for 10 seconds.
Not normal breathing? Ensure an ambulance has been called and start CPR.
Normal breathing? Place in the recovery position and monitor breathing.

C — **Start CPR**
30 chest compressions : 2 breaths.
Continue CPR until help arrives or the patient starts breathing.

D — **Attach defibrillator**
and follow the voice prompts.

Learn first aid | 1300 ST JOHN | www.stjohn.org.au

LEGISLATION **Act & Regulations** • Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017	**Codes** • First aid in the workplace code of practice January 2020 • Hazardous manual tasks code of practice August 2019 • How to manage work health and safety risks code of practice August 2019 • Managing electrical risks in the workplace code of practice August 2019 • Managing noise and preventing hearing loss at work code of practice August 2020 • Managing the risk of falls at workplace code of practice August 2019 • Managing the work environment and facilities code of practice August 2019 • Work health and safety consultation, coordination and cooperation code of practice August 2019 • Construction work code of practice August 2019 • Demolition work code of practice August 2019 • How to manage and control asbestos in the workplace code of practice August 2019 • How to safely remove asbestos code of practice August 2019 • Labelling of workplace hazardous chemicals code of practice August 2019 • Managing risks of hazardous chemicals in the workplace code of practice August 2019 • Managing the risks of plant in the workplace code of practice August 2019 • Moving plant on construction sites code of practice 2004 • Managing the risk of falls in housing construction August 2019 • Technical guidance code of practice 2001 • Work near power lines code of practice 2006 • Safe Work Australia How to Safely Removal Asbestos August 2019

WORKING AT HEIGHTS RISK ASSESSMENT CHECKLIST

Risk assessor & Supervisor: Choose an item.

Date: 24-Nov-21

	Yes	No	N/A	Control Measure
Safe access to work areas?	☐	☐	☐	
Surface condition: Fragile surface	☐	☐	☐	
Skylights/Penetrations	☐	☐	☐	
Asbestos	☐	☐	☐	Refer SWMS + ARCP
Other?	☐	☐	☐	
Is the work area incomplete?	☐	☐	☐	
Roof surface pitch > 25°	☐	☐	☐	
Unstable footing (e.g. wet slippery, sloping surfaces)	☐	☐	☐	
Unprotected edges (e.g. roof tops, shafts, balconies etc.) with edge protection less than 900mm high	☐	☐	☐	
Surfaces change level	☐	☐	☐	
Hazardous weather conditions (rain, wind, fog, dew)	☐	☐	☐	
UV radiation hazard	☐	☐	☐	
Lack of training (new starters)	☐	☐	☐	
Equipment to be used or installed	☐	☐	☐	
Risk of falling material?	☐	☐	☐	
Hot / cold temperature	☐	☐	☐	
Exposed electrical switchboards/power points	☐	☐	☐	
Power lines or electrical cables in close proximity	☐	☐	☐	
Does the structure supporting the roof require modification to support safeguards? (E.g., edge protection, travel restraint mounting points)	☐	☐	☐	

Control Options

(These are example risk controls, and the list is not exhaustive).

A. Edge Protection
B. Elevating Work Platform (EWP)
C. Scaffold with work platform and internal ladder
D. Ladder
E. Guard rails
F. Scaffolding
G. Catch platforms
H. Industrial rope access
I. Travel restraint
J. Fall arrest system
K. Permit to work systems
L. Safe work method statement
M. Warning signage
N. Toolbox talks
O. Safety harness with lifelines
P. Non-slip shoes

Note: If using travel restraint or fall arrestors ensure harness and clips are compatible; anchor points have been assessed by qualified persons.

Note: More than one of these measures to reduce a risk can be used. For example, engineering controls like edge protection can be implemented with administrative controls like training and use of this SWMS, while wearing PPE (non-slip shoes).

		Other	☐	☐	☐		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	SITE SPECIFIC CONSIDERATIONS	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)			
1. Planning & preparation	Lack of consultation may lead to potential outcomes for personal injury, property damage &/or environmental incident.	3H	• Liaise with Principal Contractor to establish the following on-site systems and procedures are in place and take note of: ○ Health and Safety rules ○ Induction for all workers – site specific and toolbox meetings ○ Supervisory arrangements ○ Communication arrangements ○ All relevant workers are appraised for required competencies & for any pre-existing medical conditions if working in remote or isolated locations ○ PPE required ○ Site plans – showing no go zones for pedestrians ○ Traffic Management Plan (TMP) ○ Exclusion Zones ○ Risk Assessments ○ SWMS and JSA's ○ Injury reporting procedures ○ Hazard reporting procedures.	2M		Head office
	WHS Regulation	3H	Clause 468(3)(a): Requirement under the WHS Regulation to notify other workers in the immediate vicinity of the removal work. Before any removal commences, a toolbox is done on site to advise every trade onsite which zone will be done on that day and how far should stay.	2M		
		3H	(Clause 468(3)(b): Requirement under the WHS Regulation to notify premises in the immediate vicinity of the removal work.	2M		
2. Training and Capabilities	Lack of training or the assessment of capability may lead to personal injury, property damage &/or environmental incident.	3H	• Ensure all persons entering a construction site have a General Construction Induction Card (white card). • All workers to be trained / licensed when required and competent to work at heights. Working at heights is a High-Risk activity; all employees/workers working at height in the following capacity must have the appropriate licence. **HRW Licence** / **Description of class of high risk work** Boom type elevating work platform (EWP): • Use of a boom-type elevating work platform where the length of the boom is 11 metres or more Scaffolding HRW license: • Erecting scaffolding over 4 meters in height Must be erected by a competent person who must possess a certificate to work as a scaffolder issued by the relevant regulatory authority.	2M		Head office Appointed Supervisor

			• instruction in the use of control measures. Include: ○ All workers are trained in this SWMS ○ Reporting procedures for incidents ○ Correct use of equipment including selecting, fitting, use, care of and maintenance ○ Correct use of all tools used ○ Use of supervision where required (e.g. new starters or new equipment) ○ Ensure supervisors, foremen etc. are suitably experienced in the type work to be conducted. ● ***Check workers are in fit condition to work i.e. no signs of fatigue, alcohol or drugs.***			
3. Arrival at site	Powered mobile plant movement	3H	• Check constantly for changing hazards while working and monitor work position at all times. Ensure: ○ High visibility clothing where reasonably practicable ○ Do not stand behind reversing vehicles ○ Allow sufficient distance from truck during operation ○ Do not enter established “no go zones” for pedestrians ○ Alertness at all times. Listen for: ▪ Reversing alarms/beepers ▪ Calls from Truck Operators ○ Safety/warning signs, Spotters, traffic barriers etc. must be obeyed as required ○ Work positions should be in clear sight of other truck operators ○ *NOTE: Some traffic management plans may say that pedestrians have right-of-way. Never assume this. Make visual and verbal contact with truck operator as required.*	2M		Appointed Driver

	Personal injury, property damage &/or environmental incident.	3H	• Ensure site-specific induction is undertaken (include location of amenities, first aid facilities, emergency plans and evacuation points, incident reporting, communication, contact persons etc.) • Assess mobile phone reception (alternative emergency communications procedures in place if no reception available) • Work site is exactly as detailed in Terms of Agreement or contract • Suitable access for all equipment required • Suitable space for operation of equipment • Site Supervisor to inspect the following (precheck): Conduct a visual inspection without stepping on the work surface where possible. Consider: ▪ Stable, fragile or brittle ▪ Wet, polished or glazed causing slips ▪ The safe movement of workers where surfaces change ▪ Support loads strength or capability ▪ Work surface slopes e.g. exceeding 7 degrees ○ Levels - where levels change and workers may be exposed to a fall from one level to another ○ Structures - the stability of temporary or permanent structures ○ The ground - the evenness and stability of the ground for safe support of scaffolding or a work platform The working area - whether it is crowded or cluttered ○ Serve Group will use their mobile scaffold for heights up to 4metres. Any other scaffold required is to be supplied by the client. ○ Access and egress from the working area ○ Edges - protection for open edges of floors, working platforms, walkways, walls or roofs ○ Holes, openings or excavations - which will require guarding ○ Hand grip - places where handgrip may be lost ○ Weather conditions - rain, wind, fog, dew. Stop work if weather conditions are unsafe ○ Likelihood of a fall occurring.	2M		Head office Appointed Supervisor

4. Conduct Risk Assessment 	Lack of a clear assessment may lead to personal injury, property damage &/or environmental incident.	4A	***Risk Assessment step 1*** Identify all hazards that may arise from the activity. Consider: • Surface condition and pitch (e.g. fragile surface such as old roofs, skylights, asbestos roofing) • Unstable footing (e.g. wet slippery, sloping surfaces) • Unprotected edges (e.g., roof tops, shafts) • Where surfaces may change level • Weather conditions (rain, wind, fog, dew) • UV radiation • Inside roofs / ceiling space (electrical connections, asbestos, vermin, fall hazards) • Lack of training (new starters) • Equipment to be used or installed • Temperature etc. • Exposed electrical switchboards/power points • Power lines or electrical cables in close proximity. ***Risk Assessment Step 2*** Conduct risk assessment based on identified hazards. Consider: • Whether the task can be partly completed on the ground or solid construction (e.g. assemble components on the ground and lift rather than assembling at height) • Severity of the risk of falling or hazardous material exposure • Likelihood of a fall occurring • Any existing control measures and whether they are sufficient • Measures to be put in place to control risk • Determine if current training and experience sufficient for undertaking the task at height • Determine if emergency procedures would be acceptable	2M	Walk through site prior to start to assess any changes to circumstances to what is described in Buildertrend.	Head office Appointed Supervisor

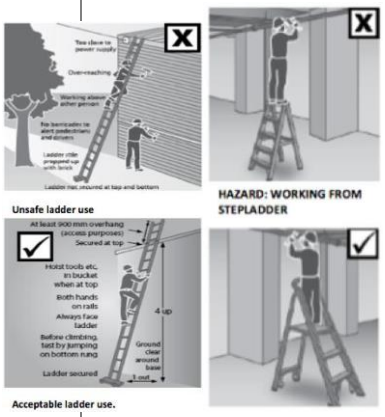
4. Conduct Risk Assessment - Continued 	Lack of a clear assessment may lead to personal injury, property damage &/or environmental incident.	4A	Based on the Risk Assessment for the task, adopt controls for working at height: *Always ensure the highest possible level of controls are adopted: Examples:* Controlling the hazard means eliminating the hazard or reducing it to a level that protects workers, subcontractors and the public. Fall exposures such as environmental, walking surfaces, stairways, ramps, floor openings, pathways, overhangs, lighting, machinery, equipment, etc. need to be controlled. 1. Work on the ground or solid construction 2. If option one (1) is not reasonably practicable where possible use a passive fall restraint system e.g., guard rails, scaffolding, elevated work platform 3. If options one (1) or two (2) are not reasonably practicable, or 100% coverage cannot be achieved, consider provision of a work positioning system e.g., Industrial rope access or a travel restraint 4. If options one (1), two (2) or three (3) are not reasonably practicable, a fall arrest system e.g., catch platforms, safety harness should be used. 5. When working at height of 2m or more it is necessary to implement levels 1, 2, 3 or 4. If a risk remains after considering all of the options above, and there is no reasonably practicable alternative, administrative controls must be implemented e.g., signage, or instruction. ***Note:*** *More than one of these measures to reduce a risk can be used. For example, engineering controls like edge protection can be implemented with administrative controls like training and use of this SWMS, while wearing PPE (non-slip shoes).* ***Risk Assessment step 3*** • Implement the chosen control method/s for working at height ● *Ensure that a separate, dedicated SWMS is in place and followed for the installation of the chosen controls e.g.* ○ Edge protection ○ Scaffold access ○ EWP ○ Travel restraint systems ○ Rope access ○ Safety harness ○ Catch platforms ○ Trestles ○ Ladders ○ Other fall protection systems. *WORKING AT HEIGHTS RISK ASSESSMENT CHECKLIST tool is included in this SWMS on page 10*	2A		Head office Appointed Supervisor

5. Working at heights	Equipment failure	3H	• Inspect and use height-access equipment as per manufacturers' instructions. Ensure: ○ Exactly as outlined in the order / design specifications ○ Controls labelled, gauges, indicators functional ○ Safety decals in place and legible ○ Ropes: Ensure the following are free from defects: ▪ Harness, karabiners, ascenders, descenders ▪ Rope, rope grabs, lanyards, slings, pulley wheels ▪ All tested and tagged. ○ Safe working load displayed (where required) ○ All safety guards are in place and undamaged ○ Ladder load rating of at least 120kg ○ Harness/Lanyard/Anchors good condition: ▪ Meet relevant Australian Standard ▪ Load information legible ▪ Clips are compatible and have safety latches in place ○ Good condition, clean ○ Serviced/Maintained- All tagged and tested.	2M		Appointed Supervisor
5. Working at heights - Continued	Suspension Trauma 	4A	• Whenever any person is wearing a harness, a rescue plan must be in place as suspension trauma can occur to persons who fall and remain in the harness for more than 5 minutes • Ensure emergency and rescue procedures are developed. Do not commence work until: ○ These procedures are developed and in place ○ The procedures have been tested ○ All relevant workers are provided training and instruction in these emergency and rescue procedures. ● Attachment points to be installed by suitable qualified engineer and must be inspected and tagged 6 monthly ● When wearing a safety line, the line may move across the work area & get tangled around obstructions. This could jerk or jam the line and overbalance the wearer. The line may also hook under and dislodge objects such as loose treads causing them to fall and create a hazard. ● Ensure the length of the fall divided by the length of the lanyard assembly, eg: Length of lanyard is 2m, length of fall is 2m, fall factor = 1. Length of lanyard is 2m, length of fall is 4m, fall factor = 2 ● Max. fall factor allowed is a fall factor of 1 ● The lanyard o anchor line must be attached to the top dorsal position of the safety harness (At chest height)	2M		Head office Appointed Supervisor

	Fall from mobile scaffold during movement 	4A	• Before moving a mobile scaffold, precautions should be taken to ensure: ○ No person is on the scaffold ○ Equipment and material cannot be dislodged from / is secured to the platform ○ The supporting surface is free of obstruction (a small obstruction may cause a mobile scaffold to overturn) • Brakes on the castors must be on before a person works on the scaffold	2M		Appointed Supervisor

5. Working at heights
- Continued
	Falls from solid structures (e.g. buildings, scaffold)
	 
	Perimeter scaffold with a fully decked working platform, guardrails and toeboards.
		4A	• Inspect working surface e.g., plant, roof etc.
			  ○ Check for moisture, dust or any other condition that may cause loss of stable footing
			  ○ Access is available e.g., entry through edge protection or other (do not climb on the outside of scaffolds or over top rails of edge protection)
			  ○ Surface is strong enough to support weight (seek advice from competent person if unsure (e.g., engineer)
			  ○ Check for damage or rusted areas
			• Where reasonably practicable, edge protection is in place
			• Edge protection barriers are strong enough to withstand the pressure of a person falling against it
			• Where access is required through edge barrier, gates or other mechanisms can also restrain and withstand the force of a person falling against it.
			• Persons erecting scaffolds must use a fall-prevention system in situations above 2 metres where it is not possible to maintain 3 points of contact with the scaffold (where two hands are required to complete the work)
			• Persons working from scaffold platforms shall not leave the confines of the platform edge protection without a fall arrest system.
			• Use mobile scaffold only when fixed scaffold is not practicable or where there is a requirement for regular movement
			• Mobile scaffold only to be used when surfaces are hard and level; mobile scaffold height must be less than 9 metres and locked when stationary and in use
			• There is an acceptable access and egress from work areas, including access ladders which extend 1m past the work platform
			• In the case of the scaffold being incomplete, barriers shall be erected to prevent access to incomplete scaffold
			• The client is responsible for the supply and construction of these scaffolds.
				2M		Appointed Supervisor
						
						Labourers

	Falls through openings
	Is sign applicable?
	 
	
		3H	• Holes or other openings through which a person can fall. Ensure:
			  ○ All holes or openings are protected from falls immediately after creating
			  ○ Use signage or other clearly marked hazard alert to identify hazard
			  ○ Cover hole/opening with a material strong enough to support the weight of a person falling or stepping onto it
			  ○ Ensure the cover is secured to prevent movement.
				2M		Appointed Supervisor
						
						Labourers

5. Working at heights - Continued	Fall from heights due to inappropriate use of ladders or trestles  	3H	• Ladder risk assessment and permit system in place • Select a ladder of sufficient length so that: o It extends at least 1 metre above the platform to be reached; or o You can stand at least 1 metre from the top of the ladder when in the working position o If the ladder is to be in use for some time, the top should be lashed in position – if not, the person at the bottom must remain to secure the ladder until the job is completed • Where possible, do not use an extension ladder to carry out works - use a mobile scaffold or EWP • Set up ladder at a slope of 4 in 1 • Check that the footing is secure – do not erect a ladder on a slippery surface • Three points of contact must be maintained at all times. • Use both hands when climbing up and down the ladder. • Do not set up ladder adjacent to a window opening without fall protection 900mm above the height of the person standing on the ladder. • If working within 2 metres of a 1-metre handrail adjacent to an edge of a 2m fall, you must not use the ladder, fall protection is required. • Maximum span for planks supported by two trestles is 3 metres • Never use a ladder to support planks • Always spread the steps and trestles to their fullest extent • Do not stand on the top step unless there is a platform with secure handrails; do not stand higher than the second tread below the top plate of any stepladder • Maximum span for planks supported by two trestles is 3 metres • Only special purpose trestle ladders may be used for the direct support of a scaffolding plank – when adjusting height use only purpose designed pins	2M		Appointed Supervisor Labourers
	Falls into excavations	3H	• Be aware of ground condition including changes in level • Wear appropriate thick soled covered footwear o NEVER wear thongs or similar footwear • Obey any barriers & signage - Be aware of excavations • Follow clearly defined detours for pedestrians around hazards • Do not walk near top edge of excavations; maintain safe distance from edges, voids & pits.	2M		Appointed Supervisor Labourers

5. Working at heights - Continued	Falls from elevated work platforms 	3H	• Face the machine whenever you mount and dismount the machine • Use provided steps/handholds when entering or exiting cabin (see operations manual for instruction) • Maintain a three-point contact with the steps and with handholds ● *Three-point contact can be two feet and one hand* ● *Three-point contact can also be one foot and two hands* • Never mount or dismount a moving machine • Do not jump off the machine • Do not carry tools or supplies when you try to mount / dismount • Do not use any controls as handholds when you enter / exit the operator compartment • Never leave operator seat with engine running. • Operator must be trained, tested, certified and authorised to operate • Ground controls must be tagged out by the operator when at heights • Logbook must be filled out prior to each use where applicable • The platform shall be secured against uplift or displacement to a structure and be installed with edge protection systems- inspect prior to use	2M		Appointed Driver Appointed Supervisor Labourers
	Falling objects 	3H	• Barricading and signage is developed. Ensure: ○ Signs used to provide clear instruction on required PPE (head protection), entry permissions and hazard areas ○ Clearly identified vehicle and pedestrian access paths, parking/ loading zones, traffic controllers ○ Consider appropriate barricades for exclusion zones. Conduct risk assessment and utilise appropriate barricade for exclusion zones. • Consider: ○ Large equipment remains at ground level ○ Maintain good housekeeping, e.g. ensure the work area is tidy and materials, debris, tools and equipment that are not being used are out of the way ○ Providing a secure physical barrier at the edge of the elevated area, i.e. toe boards or infill panels ○ Tethering or otherwise securing tools & materials to prevent them falling ○ Keeping tools or other materials away from edges and off of railings or sills ○ Using chutes when placing debris into a skip below a work area.	2M		Appointed Supervisor Labourers
	Slips, trips 	3H	• When setting up height access equipment identify all trip hazards. Consider: ○ Ground/floor surface condition ○ Where ground surfaces may change level ○ Weather conditions (rain, wind loads, fog, dew) ○ Check design to ensure that the equipment will support a specified load – or ‘duty rating’. This must be clearly stated on the item ○ Suitable lighting, including night-works (include flood lighting and operator head lamps as applicable).	2M		Appointed Supervisor Labourers

5. Working at heights - Continued	Hazardous manual tasks	3H	• Ensure materials / equipment is as close to work area as possible • Suitable lighting, including night-works (include flood lighting and operator head lamps as applicable).	2M		Appointed Supervisor
	Contact with electricity 	3H	• Ensure an electrical spotter is available when working on / or erecting height access equipment near electric power lines. (Refer to your State/Territory Guidance Material for working distances. I.e. No Go Zones etc.) **Power lines:** • Depending upon the risk of electrocution to on site workers (roof workers, crane operators, labourers etc.) The electrical asset owner can install Tiger Tails. *(Note: Tiger tails ONLY give a visual warning of the proximity of power lines.)* **Locate:** • Any other electrical cabling, gas pipes, water pipes, air conditioning ducts etc. prior to work commencing • Power cables should be redirected or power isolated for the duration of the work. **Equipment:** • All power tools and leads are Tested and Tagged and are current • Pre-inspect equipment • If equipment is damaged, do not use. Take out of service, apply Lock-out/tag-out (LOTO) procedures and inform supervisor immediately.	2M	Electricity must be disconnected prior to works.	Appointed Supervisor
	Working outdoors – heat stress	3H	• Ensure: ○ Suitable protective clothing ○ Sun brim on hard hat ○ Safety glasses - UV Rated ○ Use 30+ sunscreen on exposed skin areas ○ Adequate drinking water ○ Access to shade during breaks ○ Adequate breaks. Supervisor in charge of calling these breaks, 9.00-9.15 +12.00-12.30 ○ Check weather conditions – do not work in extreme weather.	2M		Appointed Supervisor Labourers
	Emergency incident	4A	• Ensure: ○ Adequate number of first aid trained staff are on site when working at heights occurs ○ First aiders are trained and competent in managing injuries associated with falls until emergency services arrive.	2M		Appointed Supervisor
5. On completion	Public safety	3H	• If acceptable, remove or add barricades, contact supervisor and return as agreed.	2M		Appointed Supervisor

SAFE WORK METHOD STATEMENT (SWMS) PART 2

This SWMS has been developed in consultation and cooperation with *employee/workers* and relevant *Employer/Persons Conducting Business or Undertaking (PCBU).* I have read the above SWMS and I understand its contents. I confirm that I have the skills and training, including relevant certification to conduct the task as described. I agree to comply with safety requirements within this SWMS including risk control measures, safe work instructions and PPE described.

OVERALL RISK RATING AFTER CONTROLS	☐ 1 LOW	☐ 2 MODERATE	☐ 3 HIGH	☐ 4 ACUTE

WORKERS' NAME	JOB ROLE / POSITION	LICENCES, COMPETENCIES & QUALIFICATIONS *(add as applicable)*			DATE	SIGNATURE
		TYPE / DESCRIPTION	CLASS	NUMBER		
Choose an item.	Supervisor	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
		Construction Card				
		Construction Card				

COVID – 19 Procedures

Sick leave arrangements:

- If you have cold or flu symptoms, such as coughing, sneezing, or fever, or feel unwell, do not come to the workplace.
- If you have any of the above symptoms you will need to get a COVID test and self isolate for at least 3 days (or until you receive negative results) before returning to the workplace
- If the Covid-19 test is returned positive, you must immediately contact your supervisor and remain in self isolation until fully cleared by a doctor.
- If you need to provide care to a family member infected by COVID-19, request work from home. You'll only be permitted to return to the office 14 calendar days after your family member has fully recovered, provided that you're asymptomatic or you have a doctor's note confirming you don't have the virus.

General hygiene rules:

- Wash your hands after using the toilet, before eating, and if you cough/sneeze into your hands (follow the 20-second hand-washing rule).
- Cough/sneeze into your sleeve, preferably into your elbow. If you use a tissue, discard it properly and wash / sanitize your hands immediately.
- If you find yourself coughing / sneezing on a regular basis, leave the base and follow the above guidelines.

SERVE GROUP LICENSES

NSW GOVERNMENT

FRIABLE ASBESTOS REMOVAL LICENCE

Issued under the *Work Health and Safety Regulation 2011 (NSW)*.This licence is not transferable.

Licence: AD213326

Licence period: From: 29/08/2019 To: 28/08/2024

Licence holder name: Serve Group Pty Ltd

ABN: 30 159 209 024

ACN: 159 209 024

Address: 23 Porter Circuit
MILTON NSW 2538

Description of the work that can be undertaken under this licence

- All friable asbestos removal work
- All non-friable asbestos removal work

Licence holder obligations

A nominated supervisor must be present at the site whenever licenced friable asbestos removal work is being carried out and readily available to attend the site when licenced non friable asbestos removal work is carried out.

This licence must be available for inspections at all times.

All licenced asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.

The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

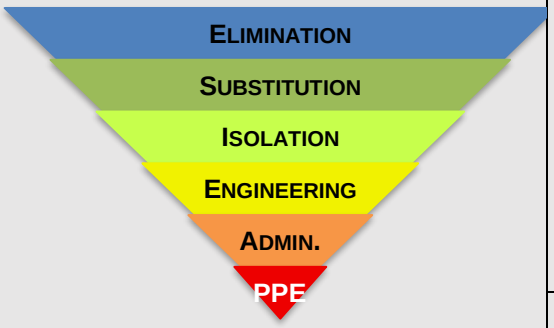
PLANT + EQUIPMENT SAFE WORK METHOD STATEMENT (SWMS) PART 1	
ACTIVITY: REMOVAL AND DISPOSAL AC BONDED EXTERNAL LOUVERS TO SUTHERLAND HOSPITAL (50 IN TOTAL) AT THE BELOW MENTIONED ADDRESS	**JOB** #:13918
BUSINESS NAME: SERVE GROUP PTY LTD T/A ASBESTOS REMOVAL SYDNEY	**BUSINESS** #: 30 159 209 024
BUSINESS ADDRESS: 74 ANDERSON ROAD, MORTDALE NSW 2223	
BUSINESS CONTACT: MATHEW PRONK	**PHONE** #: 1300 119 233
SWMS APPROVED BY: EMPLOYER / PCBU / GENERAL MANAGER	
NAME: MATHEW PRONK	
SIGNATURE: 	**DATE**: WEDNESDAY, NOVEMBER 24, 2021
PERSON/S RESPONSIBLE FOR ENSURING COMPLIANCE WITH SWMS: MATHEW PRONK	
PERSON/S RESPONSIBLE FOR REVIEWING THE SWMS: Choose an item.	
ALL PERSONS INVOLVED IN THE TASK MUST HAVE THIS SWMS COMMUNICATED TO THEM BEFORE WORK COMMENCES.	
Daily Tool Box Talks will be undertaken to identify, control and communicate additional site hazards.	
Work must cease immediately if incident or near miss occurs. SWMS must be amended in consultation with relevant persons.	
Amendments must be approved by Mathew Pronk and communicated to all affected workers before work resumes.	
SWMS must be made available for inspection or review as required by WHS legislation.	
Record of SWMS must be kept as required by WHS legislation.	

PRINCIPAL CLIENT DETAILS		
CLIENT: BLAIN KHOX – NOBLE WORKS	**PROJECT NAME**: 13918	**DATE SWMS PROVIDED TO PC**: 23/11/2021
PROJECT ADDRESS: KINGSWAY & KAREENA ROAD, CARINGBAH (SUTHERLAND HOSPITAL)		
PROJECT MANAGER (PM):	**PM Signature:**	
SWMS SCOPE: This SWMS provides guidance on the safe use of plant and equipment.		
SUITABLE FOR NSW, QLD, TAS, NT, SA, & ACT ONLY		

THIS WORK ACTIVITY INVOLVES THE FOLLOWING "HIGH RISK CONSTRUCTION WORK"			
☐ Confined spaces	☒ Mobile plant	☐ Demolition	☒ Asbestos
☐ Using explosives	☐ Working at Heights	☐ Artificial extremes of temperature	☐ Tilt up or pre-cast concrete
☐ Pressurised gas distribution mains or piping chemical, fuel or refrigerant lines energised electrical installations or services			
☐ Structures or buildings involving structural alterations or repairs that require temporary support to prevent collapse			
☐ Involves a risk of a person falling more than 2m, including work on telecommunications towers			
☐ Working at depths greater than 1.5 Metres, including tunnels or mines		☐ Work in an area that may have a contaminated or flammable atmosphere	
☐ Work carried out adjacent to a road, railway or shipping lane, traffic corridor		☐ In or near water or other liquid that involves risk of drowning	

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED.
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before commencing work.
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Maintain control measures.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1 LOW	Record and monitor.

HIERARCHY OF CONTROLS



MOST EFFECTIVE

LEAST EFFECTIVE

HOW TO ASSESS THE RISK

Step A - Consider the consequences	
For each hazard, consider the consequences if something happens. Consider what could reasonably have happened, as well as what actually happened (if there was an accident/incident). Look at the descriptions below and choose the most suitable consequence	
Consequence	**Description**
Catastrophic:	Multiple Fatality or permanent disability
Major	1 Fatality, permanent disability (or >10 Moderate Injuries)
Moderate:	Serious injury (injuries) requiring specialist medical treatment or hospitalisation
Minor	Minor injury requiring First Aid or Medical treatment (e.g. minor cuts, bruises, bumps)
Insignificant:	No treatment required

Step B - Consider the likelihood	
How likely is it that something will happen as a result of the hazard? Look at the descriptions below and choose the most suitable Likelihood	
Likelihood	**Description**
Almost certain	Almost certain to occur within the foreseeable future or within the project lifecycle
Likely	Will probably occur in many circumstances, or within the project lifecycle
Possible	Might occur in some circumstances, but infrequently or within the project lifecycle
Unlikely	Could occur at some time in limited circumstances, not likely to occur within the foreseeable future
Rare	Conceivable but only in extreme circumstances, Will only occur in exceptional circumstances

Step C – Calculate the Risk Level

1. Take the Step A rating and select the correct line
2. Take the Step B rating and select the correct column
3. Circle the risk level where the two ratings cross in the matrix below

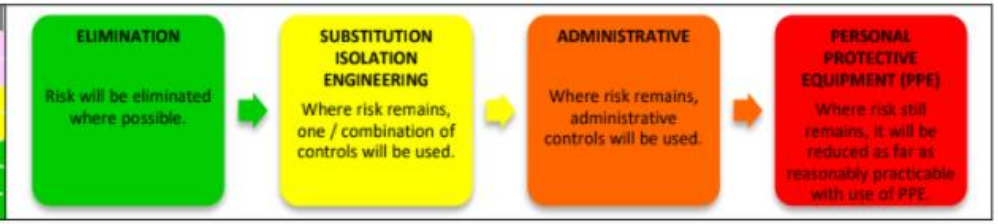
Risk level = ☐

Step D - Hazard Control Priority

- **Risk Level/Actions – ALARP** - Reduce the risk as low as reasonable possible
- **Low (1 to 5):** - Undertake the activity with the existing controls in place.
- **Medium (10 to 14):** - Additional controls needed.
- **High (15 to 19):** - Controls will need to be in place before the activity is undertaken.
- **Extreme (20 to 25):** - Significant control measures will need to be implemented to ensure safety.

Risk Matrix

LIKLIHOOD	CONSEQUENCE				
	Critical	Major	High	Moderate	Minor
Probable	25	22	19	16	11
Likely	24	21	17	12	7
Possible	23	18	13	8	5
Unlikely	20	14	9	6	3
Rare	15	10	4	2	1



Hazard Phrases

Hazard Class Type	Potential Harm	Injury Causation phrases
Gravity	Falling objects, falls, slips and trips can result in fractures or death	Cut, stab, puncture
Electricity	Potential ignition source, exposure to live electrical source can cause death	Entanglement
Mechanical energy	Hit by moving vehicles, or being caught, entangled by moving parts can cause death	Crushing
Hazardous Chemicals	Chemical burns and hazardous dust can cause severe injuries or death	Strike
Extreme temperatures	Can cause hot / cold burns or heat stroke, frost bite or hypothermia	Pinch
Psychosocial hazards	Effects of work-related stress, bullying, violence and work-related fatigue	Shear
Manual Task	Overexertion, excessive force, repetitive movement can cause muscular strain	Injection
Biological	Micro-organisms can cause hepatitis, legionnaires' disease, Q fever, HIV/AIDS	Ingestion
Radiation	Ultra violet, welding arc, micro waves and lasers cause burns, cancer or blindness	Ergonomic
Noise	Exposure to loud noise can cause permanent hearing damage	Exposure

PERSONAL PROTECTIVE EQUIPMENT (PPE):

ENSURE ALL PPE MEETS RELEVANT AUSTRALIAN STANDARDS. INSPECT, AND REPLACE PPE AS NEEDED.

FOOT PROTECTION	FULL-FACE RESPIRATORS (P3)	HALF-FACE RESPIRATORS (P2 / DISPOSABLE / CARTRIDGE)	HARD HATS	DISPOSABLE HALF-FACE RESPIRATOR	EYE PROTECTION	FACE PROTECTION	HAND PROTECTION	PROTECTIVE CLOTHING	SUN PROTECTION	FALL ARREST	HEARING PROTECTION	Rings, watches, jewellery that may become entangled in machines must not be worn. Long and loose hair must be tied back.
												
☒	☐	☐	☒	☒	☐	☐	☒	☒	☒	☒	☐	☐

Relevant Legislation & Codes of Practice

LEGISLATION
Act & Regulations

- Work Health and Safety Act 2011- No 137, Excavation work COP July 2015-3840
- Work Health and Safety Regulation 2017
- POEO Act 1997 Environmental Planning and Assessment
- Amendment Act 1997, Construction work cop 3842
- Contaminated Land Management act, Pollution Control Act 1997
- COP- Managing the risks of plant in the workplace 3838

Codes

- First aid in the workplace code of practice January 2020
- How to manage work health and safety risks code of practice August 2019
- Managing noise and preventing hearing loss at work code of practice August 2020
- Managing the work environment and facilities code of practice August 2019
- Work health and safety consultation, coordination and cooperation code of practice August 2019
- Construction work code of practice August 2019
- Demolition work code of practice August 2019
- Moving plant on construction sites code of practice 2004
- Technical guidance code of practice 2001
- Work near power lines code of practice 2006

Training & Personnel Qualifications	• General Construction industry Induction • Project-specific induction • SWMS induction • SDS awareness • First Aid- (Nominate daily)	• Statement of attainment (SoA) from RTO for machinery/RII's • Overhead Power lines training for spotters • HR/LR/MR Truck License • Confined space • Dogman	
Maintenance and Inspections	• Daily Pre-start check • OEN Manual compliance • Visual inspection before use • Tagging as required (Quarterly, 6 and 12 Monthly)	• Weekly site QSE inspections • Monthly Project Audit • ITP compliance	
Plant and Equipment	☐ Excavator ☐ Posi- Track/Bobcat ☐ Roller ☐ Power Tools ☒ EWP	☐ Hand Tools ☐ Laser ☐ Chains and signs ☐ First Aid Kit ☒ Other: Crane on site	
Hazardous materials used	• Concrete • Diesel • Hydraulic Oil • Marker Spray • Mega poxy Part A and B • Pipe jointing Lube • Priming fluid • PVC cement N & P • Unleaded Petrol • WD40 Ref; SDS register for additional substances	**SDS** ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐ ☐ Yes/ No ☐	**Permits** ☐ Excavation ☐ Confirmed Space ☐ Hot Work ☐ Other: ☒SDS folder on site ☒Spill kit available

Emergency Planning				
First Aid Officer	**Qualification**	**Expiry**	**Supervisor**	**Contact Number**
Appointed Supervisor	HLTAID001/2/3	August 2023	TBD	TBD
☒ First-aid kit	☒ Fire extinguisher	☐ Falls rescue equipment	☐ Communication System (mobile phone)	

Emergency Evacuation assembly point	By the truck. If the truck is not accessible, then all employees to follow the nominated supervisors' directions.		
First Aid Location	In the truck.		
Emergency Facilities **(Nearest hospital)**	Sutherland Hospital	**Contact Number**	(02) 9540 7111

Consultation will be undertaken within the following persons at premises where demolition takes place:	☒ The Client ☐ The Principal ☒ Neighbours ☐ The occupying employer	☐ Their employees ☐ Safety committee or ESR ☐ Other contractors on site ☐Other authority
Boundary	☐ Pedestrians ☒ Warning signs ☒ Barricades/safety tape	☐ Security fencing ☐ Boundary

KEY PERSONNEL (24 Hour Contact)		
Head Office	admin@servegroup.com.au	1300 119 233
Mathew Pronk	generalmanager@servegroup.com.au	0499 978 737
Wade Rogers	wade@servegroup.com.au	0420 978 737

SUMMARY PROCEDURE OF WORKS (SCOPE)

Removal and disposal AC bonded external louvers to Sutherland Hospital (50 in total)

Client to provide Work elevated platform and crane to perform works safely.

EWP platofrms to be used to access and secure the louvres. Lifting and carrying of lourves will be completed using a crane, thus directed to the nearest plastic lined truck/bin.

Identified Emergency situations (indicate if any of the following safety issues have been identified during the planning for demolition)

- ☒ Electrocution
- ☒ Heat stress
- ☐ Confined space
- ☐ Pedestrians
- ☒ Fall
- ☐ Manual handling
- ☒ Plant & equipment
- ☒ Sharp objects
- ☒ Slips, trips and falls
- ☐ Excavation 1.5m+
- ☐ Chemical and fuel lines
- ☐ Overhead powerlines
- ☐ Flora & Fauna harm
- ☐ Environmental harm
- ☐ Interruptions to local traffic/collisions
- ☐ Rollover

Hazard Control Measures & Emergency Procedures

If work is to be conducted on a construction site (or a site controlled by another Employer / PCBU) follow the site-specific Emergency Management Plan. Ensure:

- Adequate numbers of first aid trained staff are on site
- First aiders are trained & competent in managing injuries until emergency services arrive
- All rescue equipment is in good condition, available for use and in close proximity to the work site.

Ensure workers have access to:

- First aid kit/supplies
- First Aid trained personnel familiar with resuscitation and emergency response for electric shock
- M/SDS
- Communication devices (check mobile phones will have service in area)
- Suitable fire protection equipment.

Electrocution

Control measures and preventative steps regarding electrical hazards

- Inspect wiring of equipment before each use. Replace any damaged or frayed cords immediately
- Ensure test & tag is up to date
- Ensure wires are completely isolated (Licensed Electrician to complete)
- If electrical equipment were to be used on site, ensure safe work practices are implemented
- Ensure all individuals on site know the location and how to operate shut-off switches and/or circuit breaker panels.
- Where possible the use of extension cords should be reduced.

To deal with electrocution - What to do:
1.Check for danger to yourself, bystanders & the patient
2.Switch off power, if possible, before trying to help the patient
3.If the patient is in contact with high voltage lines, do not approach but wait until power is disconnected by authorized electrical personnel.
4.If power cannot be switched off quickly, remove the patient from the electrical supply without directly touching them. Use a non-conductive, dry material (eg a dry wooden broom handle)
5.Follow DRSABCD. Call triple zero (000) for an ambulance.
6.Hold any burnt area under cool running water for 20 minutes.
7.Remove jewellery and clothing from burnt areas, unless stuck to the burn.
8.Cover the burnt area with a loose and light nonstick dressing, preferably clean, dry, non-fluffy material such as plastic cling film.
9.Seek medical aid

Heat Stress

Heat-related hazards can be created from working in enclosures or confined spaces or using
PPE. The following factors can lead to heat stress, including temperature, humidity, air movement, exposure to a heat source, work activities and demands, how long the PPE has been worn, and individual physical factors.
Control measures to help prevent heat stress include:

- Selecting appropriate PPE to reduce the build-up of heat
- Providing an adequate number of extraction units in enclosures
- Scheduling appropriate work breaks (Adequate breaks – set break times 9 – 9.15 am & 12 – 12.30 pm Supervisor in charge of calling these break times)
- Employee rotation
- Making cool drinks readily available outside the vicinity of the works being completed
- Providing a cool, shaded rest area and
- Educating workers about heat stress risks and controls

If heat exhaustion were to occur in the workplace the following procedures should be adhered to:

1. The person should be removed from the heat area and placed in a shady or airconditioned place
2. The individual should be laid down, with legs and feet elevated slightly
3. Remove tight or heavy clothing
4. Ensure the individual drinks cool water or other non-alcoholic beverage without caffeine
5. Cool the person by spraying cool water or fanning
6. Notify client
7. Monitor the individual carefully
8. If symptoms were to worsen and do not improve within one hour, contact emergency services

Manual handling

The following steps are in accordance to the Code of Practice Hazardous Manual Tasks August 2019

1. Ensure all individuals all reasonably fit to carry out works prior to job start
2. When lifting items, it is essential to keep relaxed and ensure the upward movement starts with the head
3. Lifting movement should be as smooth and progressive as possible, thus using the power of the legs to perform the lifting
4. Once lifted the item should be close to the body, thus no twisting movement of the body should be made
5. When carrying items such as double wrapped bags and other equipment grip should be secure and arms should be kept within the boundary of the body
6. When conducting movement on site ensure the spine, shoulders and knees are always kept in its normal alignment
7. Ensure all appropriate footwear is utilised for the task, thus place feet apart to ensure the individual is balanced at all times

Sharp Objects

- Before works commence a site inspection of the work area should be completed to ensure there are no sharp objects that may cause an injury to an employee
- If a sharp object were to be found during the site inspection, before job starts ensure safety measures are adhered to in order to remove the object safely.
- If a sharp object were to be found during the completion of works, ensure the client (St Hillier's) is notified about the hazard and take reasonable steps to eliminate the hazards from the work site.

Procedure for dealing with minor cuts, scrapes or bruises in the workplace

1. Apply direct pressure to the wound for 10 minutes or until bleeding stops
2. Wash the wound for 5 minutes
3. Gently scrub out any dirt with a clean washcloth
4. Apply antiseptic wash or antibiotic ointment, then apply bandage
5. Monitor the employee and if conditions worsen

Procedure for larger cuts and wounds

1. Apply direct pressure immediately and follow first aid guidance
2. Notify client
3. Ensure wound is kept clean then apply antibiotic ointment
4. If conditions worsen contact emergency services

Organise for employee to be escorted off site and adequate transport home

Fall from ladder

Carry out a risk assessment to assess if the work can be done from the ground, and if not, how they can safely access the work area in accordance with Managing the risk of falls at workplace code of practice August 2019.
Ensure ladder will be set on a firm, flat surface, and if that is not possible ensure that the ladder has a safety device such as leg levellers, anti-slip guards and stabilisers.
Make sure the ladder can safely reach the work area without requiring the workers to stand higher than 900mm from the top.
A frame ladders should only be used when locked in the fully open position.
If using an extension ladder, secure it at the top and bottom, and if this isn't possible, have someone hold the ladder while it is in use.
Extension ladders should be angled at a ratio of 1:4. That is, position the base of the ladder 1 metre away from the structure for every 4 metres of height.
Do not climb or work past the second-last rung of a ladder, and never straddle the top of an A-frame ladder.
When climbing down, remain facing the ladder and climb to the bottom rung before stepping off.

If a fall from a ladder were to occur in the workplace the following procedures should be adhered to:
1. Stop work immediately
2. Check for danger to yourself, bystanders & the patient
3. Follow DRSABCD. Assess the situation and call triple zero (000) for an ambulance if required.
4. Notify client and Head Office and document incident

Keep the individual in the recovery position in a safe warm area.

Work Safely at Heights

Before works begin the following risk assessment should be completed in order to identify potential hazards:

Refer to Managing the risk of falls at workplace code of practice August 2019 for full methodology (Managing the risk of falls in housing construction August 2019)

Continued next page
What to do in case of a fall from heights:
Follow DRSABCD

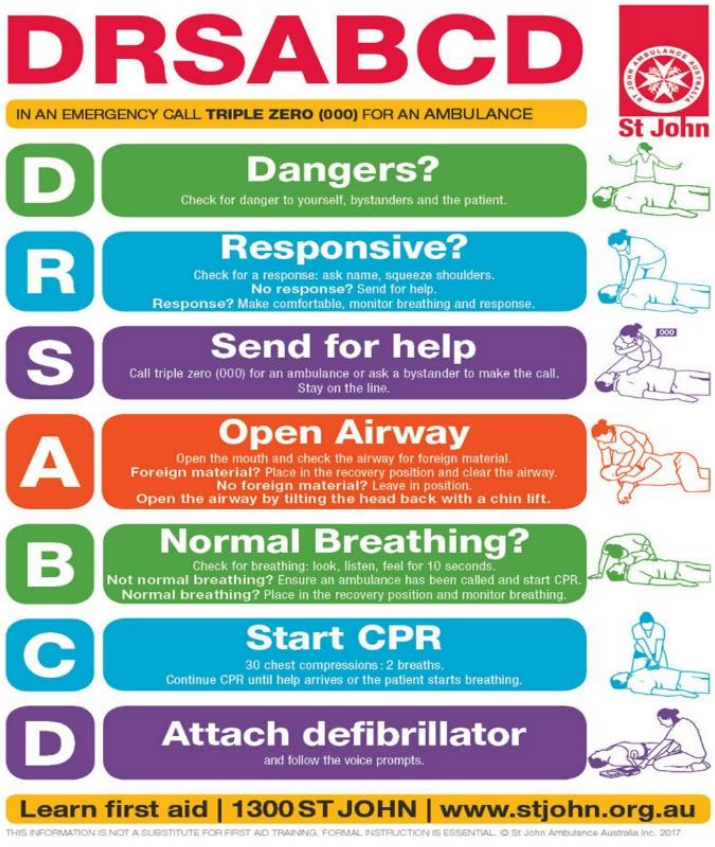
1. Check area to ensure there is no further risk to individual (Danger)
2. Contact emergency services (triple 0) (Response)
3. Notify St Hilliers immediately (Send for Help)
4. Follow ABCD
    - Airway
    - Breathing
    - Cardiopulmonary resuscitation (CPR)
    - Defibrillation

Keep individual in the recovery position in a safe warm area

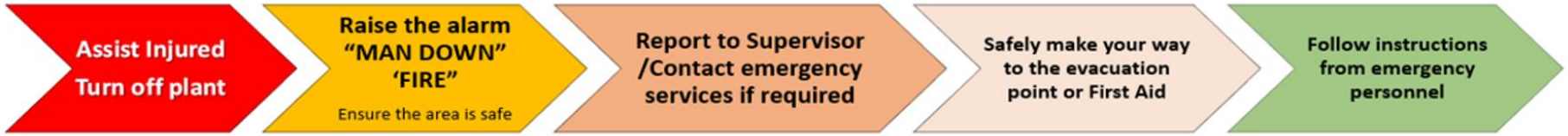
Work Safely at Heights (Scaffolding)

Before works begin on scaffold the following risk assessment should be completed in order to identify potential hazards:

1. Inspect the surrounding environment in which the scaffold is used, including ground conditions
2. Identify the major functional requirements of the scaffold including the maximum live and dead loads as well as the access requirements before use

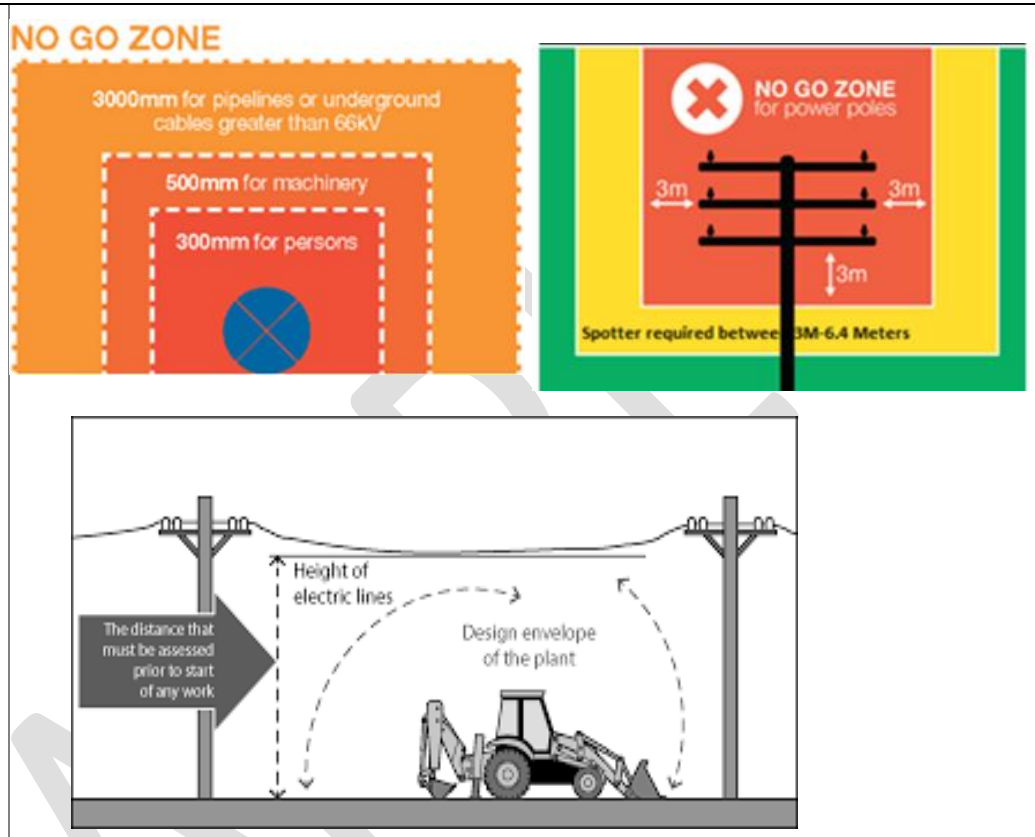


EMERGENCY RESPONSE



JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)		
1.Access to work area including floating of machines	Workers unfamiliar with site or activity Slips, Trips/falls Other trades Pedestrian injury Flora & Fauna- harm Environmental harm Interruptions to local traffic/collisions	High 17	• Inspection/Co-coordination walk/ site inductions and toolbox talk prior to job start • Ensure that all other trades working in the area are aware of our activities. • Mark out route of service to be installed. Make safe or remove obstructions. • Ensure that access to the work area is delineated from others along with the landowners and local community. Ensure traffic and pedestrian isolation work zone. • Advise workers of hazards relating to access, install physical barriers/ signage/ flagging as required. Ensure environment zones are identified and flagged. • Siltation controls in place prior to commence, vehicles to remain on designated access tracks. Designate refueling area and chemical storage. • TCP (Temporary Construction Permit) to be in place before arrival, crew members to be on site for delivery.	Low 4	Project manager Supervisor (crew leader) Site principal Traffic control

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)		
2. Verify/Identify existing underground and overhead services.	• Unmarked services • Live services • Fire/explosion • Electrocution • Personal injury • Damage to service • Services • Interruptions • Property Damage 	Major 21	• Visual check of site prior to commencement of work through an area • Copy of current Dial before you dig plans (DBYD) to be onsite and available at all times. • Permit to excavate to be available on site & in date • Locate & identify known services, potholed and marked prior to commencement. Non-destructive excavation to be used to locate all known services. • Sucker truck (ND Ex) to be used to locate services for entire width of excavations • No mechanical digging within 500mm of known services. • Toothless bucket or blade to be used when removing cover material/soil. • Maintain distance and NO GO ZONES from overhead electrical cables Maintain Safe clearances- Spotter used for spotter approach distance only. **NO GO ZONE- 132kv <3.0m / 132kv to 330kv<6.0m / more than 330kv >8.0m.** **SPOTTER ZONE- 132kv 6.3-3.0m / 132kv >6.0m** • Ensure all warning signage and suitable NO GO ZONE flagging is installed • Flagging erected under any overhead cable and or clearance signage on poles. • Trained Spotter (on-site supervisor) to be used to observe position of plant and to warn operator of the proximity of underground and overhead services	Med 10	Project manager Supervisor (crew leader) Site principal Traffic control


NO GO ZONE
3000mm for pipelines or underground cables greater than 66kV
500mm for machinery
300mm for persons
NO GO ZONE
for power poles
3m
3m
3m
Spotter required betwee
3M-6.4 Meters
Height of electric lines
The distance that must be assessed prior to start of any work
Design envelope of the plant

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)		
3. Preparation of work area & compounds (installation of fencing, delivery of amenities etc.)	• Traffic/collisions • Personal injury • Pedestrian injury • Slips, Trips and falls • Manual handling	High 17	• Ensure approved TMP and traffic controls are in place prior to any works on roads or prior to deliveries. Ensure jersey barriers are established to work near live traffic. • Ensure all relevant signage is in place. • Ensure work areas are free from obstructions and adequate housekeeping is maintained prior, during and on completion of work activities. • Only operators with approved SOA cards are to be in control of plant and machinery. • Ensure deliveries are unloaded using safe working practices, ensure clearance zones are established, slinging by competent persons. Never lift over people. • Stored goods and material to be neatly stacked or stowed • Correct manual handling techniques to be used, two man or machine to complete lifts • Spotter to ensure pedestrians are not entering the no go zone, and to make sure that all the above happens smoothly.	Low	Crew leader Plant operator Spotter
4. Arrival at site	Powered mobile plant movement	3H	• Check constantly for changing hazards while working and monitor work position at all times. Ensure: ○ High visibility clothing. ○ Do not stand behind reversing vehicles (spotter responsible) ○ Allow sufficient distance from truck during operation ○ Do not enter established “no go zones” for pedestrians ○ Alertness at all times. Listen for: ▪ Reversing alarms/beepers ▪ Calls from Truck Operators ○ Safety/warning signs, Spotters, traffic barriers etc. must be obeyed as required ○ Work positions should be in clear sight of other truck operators • *NOTE: Some traffic management plans may say that pedestrians have right-of-way. Never assume this. Make visual and verbal contact with truck operator as required.*	2M	Spotter responsible

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)		
5. Load/unload plant	• Moving plant/ crush • Moving plant/ collision • Hit object • Collisions • Falls	High 18	**NEVER USE FAULTY OR DAMAGED RESTRAINING EQUIPMENT** • All machines must be restrained including any attachments ancillary equipment. Chains to be tied forwards/backwards or across the truck/trailer to secure. Ensure restraining capacity. Attach lashings to tie rail at support lug/bracket • Ensure suitable clearances from overhead services. • Comply with all road rules and signage. • Ensure suitable loading/unloading area is stable and clear of plant, personnel and obstructions (LOOK UP AND LIVE). Set down & block float to minimise movement. Set down and lock ramps • Turn on engine machine. • Spotter to stand clear and guide the operator. Keep bucket low for stability and track straight on ramps- drive slowly. • Place machine in transport/park configuration, apply brakes and shut off engine.	Med 10	Transport/ operator Plant operator Spotter
6. Mobile Plant Operation	• Moving plant/ Crush • Moving plant/ Collision • Hit object • Falling objects • Slips/Trips/ Falls	High 18	• Only component RII or equivalent industry trained operators can operate mobile plant. • Pre-operation check must be conducted and documented. All faults must be reported to the supervisor and operations manager. • Operation Manual must be available, and operators must be familiar with the safe operating requirements • Quick hitch has the following information clearly marked upon it- • Make, model, mass and rated lift point capacity (kg) must be considered by all operators when assessing the suitability of the quick hitch for any task. • Operator to ensure locking pins are secured and working load limit compliance. • Never allow anyone to enter the excavators swing radius unless you have stopped operating the plant. Never lift, move or swing a load over anyone. • Spotter to maintain site exclusion zones and report any non-compliance to the operator. • Spotter to be around the machine at all time while machine is in operation.	Med 10	Plant operator Spotter

			• Maintain 3-point contact when using access steps and cabin.		

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)		
7. Site Tracking Combine or place before mobile plant operation.	• Moving Plant/ Crush • Moving Plant/ Collision • Hit object • Rollover	High 18	• Close cabin door and use seatbelt if fitted. Track only over suitable ground, avoid penetrations, drains and ledges. Be aware of other plant or machinery operating within close proximity. Maintain overhead services clearance zones. • Separate plant movements from / personnel where possible. • Maintain site exclusion zones and STOP immediately if a person on foot enters the exclusion ZONE- report any non-compliance to the site supervisor. This is shared responsibility with the spotter.	Med 10	Plant Operator Spotter
8. Refueling	• Fire, Explosion=Burns spills= (Environmental release) • Slips/ Trips/ Falls	Med 13	• Ensure extinguisher is charged and inspected. • No smoking whilst refueling, use pad for nozzle transfer drips. • No unattended auto filling. Use access steps correctly, do not lean over guard rails. • Refuel in designated and safe area, turn off engine and ignition.	Low 4	Refueller Plant Operator
9. Deliveries	• Moving plant/crush • Moving pipe/ crush • Hit Object • Falling objects	High 18	**NEVER USE FAULTY OR DAMAGED LIFTING EQUIPMENT, INSPECT BEFORE USE** • Ensure suitable loading/unloading area is stable and clear of plant, personnel and obstructions (LOOK UP AND LIVE). Ensure loads are stable before removing lashings. • Only operators with approved SOA cards are to be in control of plant and machinery. • Ensure deliveries are unloaded using safe working practices, ensure clearance zones are established, slinging by competent persons. Never lift over people. • Stored goods and material to be neatly stacked or stowed and chocked/stabilised. • Keep clear of loads and signal the operator before entering slew zones.	Med 10	

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT** RISK-RATING **(IR)** RESIDUAL RISK-RATING **(RR)		
10. Excavation	• Trench collapsing • Moving plant/crush • Moving plant/collision • Falling material • Slips/trips/falls • Dust • Noise	High 18	• Visual inspection of work area daily prior to commencement • Excavation benched, battered or shored for trenches >1.5m or geotechnical approval of trench stability for stabilized ground conditions. • Keep plant out of the zone of influence thus being for every 1m deep,1m back, unless the use of shoring or approved prevention methods are in place. • Spoil to be placed back from edge of trench out of the zone of influence. • Display signage around the excavation clearly identifying the area as a deep excavation, and that no unauthorized access is permitted • Excavations to be backfilled as soon as possible or physical barriers to be installed around open excavations if being left unattended for any period of time. • Ensure operator has made eye contact and approved your approach. • All attachments to be grounded & controls isolated before approaching. • Materials to be wet down if dust is too great. • Operator to complete Daily Plant checks sheets prior to works. • When using shoring boxes, handrails or boxes left between >900mm above ground for edge protection controlling falls and falling materials.	Med 10	Crew leader Plant operator
11. Testing *(if & when required)*	Pressure systems/ impacts & air injection	Med 13	• Visually inspect tools prior to use. All couplings must be compatible & have approved safety clips fitted to them to prevent inadvertent uncoupling when under pressure. Ensure that hoses are protected. • Do not discharge in the direction of yourself, others, always release the pressure in air hoses and tools prior to release. • Use Bolted clamps, that are secured, Wear PPE correctly, Glasses & Gloves.	Low 4	Labourer

JOB STEP	POTENTIAL HAZARD/S	IR	CONTROL MEASURES TO REDUCE RISK	RR	RESPONSIBLE PERSON
			INHERENT RISK-RATING (IR) RESIDUAL RISK-RATING (RR)		
10. Excavation	• Property damage • Engulfment • Electricity • Cuts/lacerations • Manual handling • Biohazards	Med 13	• Notifications and approvals to be verified before commencement. • Check Upstream and downstream to ensure no risl of flows • Only trained and competent persons to use power tools, inspect before use. • Ensure items to be cut and offcuts are chocked from movement & supported. • Ensure eye, face & hand PPE is worn correctly when using power tools. • Rotate high force tasks between crew members. • Ensure personal hygiene and hand washing after activity, wear suitable gloves	Low 4	Crew leader Plant operator

SAFE WORK METHOD STATEMENT (SWMS) PART 2

This SWMS has been developed in consultation and cooperation with *employee/workers* and relevant *Employer/Persons Conducting Business or Undertaking (PCBU).* I have read the above SWMS and I understand its contents. I confirm that I have the skills and training, including relevant certification to conduct the task as described. I agree to comply with safety requirements within this SWMS including risk control measures, safe work instructions and PPE described.

OVERALL RISK RATING AFTER CONTROLS	☐ 1 LOW	☐ 2 MODERATE	☐ 3 HIGH	☐ 4 ACUTE

WORKERS' NAME	JOB ROLE / POSITION	LICENCES, COMPETENCIES & QUALIFICATIONS *(add as applicable)*			DATE	SIGNATURE
		TYPE / DESCRIPTION	CLASS	NUMBER		
Choose an item.	Supervisor/ Spotter	Construction Card				
Choose an item.	Operator	Construction Card				
Choose an item.	Labourer	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				
Choose an item.	Choose an item.	Construction Card				

COVID – 19 Procedures

Sick leave arrangements:

- If you have cold or flu symptoms, such as coughing, sneezing, or fever, or feel unwell, do not come to the workplace.
- If you have any of the above symptoms you will need to get a COVID-19 test and self-isolate for at least 3 days (or until you receive negative results) before returning to the workplace
- If the Covid-19 test is returned positive, you must immediately contact your supervisor and remain in self-isolation until fully cleared by a doctor.
- If you need to provide care to a family member infected by COVID-19, request work from home. You'll only be permitted to return to the office 14 calendar days after your family member has fully recovered, provided that you're asymptomatic or you have a doctor's note confirming you don't have the virus.

General hygiene rules:

- Wash your hands after using the toilet, before eating, and if you cough/sneeze into your hands (follow the 20-second hand-washing rule).
- Cough/sneeze into your sleeve, preferably into your elbow. If you use a tissue, discard it properly and wash / sanitize your hands immediately.
- If you find yourself coughing / sneezing on a regular basis, leave the base and follow the above guidelines.

SERVE GROUP LICENSES

NSW GOVERNMENT

FRIABLE ASBESTOS REMOVAL LICENCE

Issued under the *Work Health and Safety Regulation 2011 (NSW)*.This licence is not transferable.

Licence:	AD213326
Licence period:	From: 29/08/2019 To: 28/08/2024
Licence holder name:	Serve Group Pty Ltd
ABN:	30 159 209 024
ACN:	159 209 024
Address:	23 Porter Circuit MILTON NSW 2538

Description of the work that can be undertaken under this licence

- All friable asbestos removal work
- All non-friable asbestos removal work

Licence holder obligations

A nominated supervisor must be present at the site whenever licenced friable asbestos removal work is being carried out and readily available to attend the site when licenced non friable asbestos removal work is carried out.

This licence must be available for inspections at all times.

All licenced asbestos removal work is to be notified to SafeWork NSW at least five days prior to the work commencing.

The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

Notification Summary

To make changes to this Notification please click the 'Amend' button below.

Read Only

NFRINOT: Notification of Class B (Non Friable) Asbestos Removal Work	Licence Details
Reference Number: 940R-00329617-01	**Licence Name:** Serve Group Pty Ltd
Status: Lodged Pending	**Licence No:** 213326 **Class(es):** Class A / ASA Class B / ASB
Date Lodged: 23/11/2021 03:15:38	**Expiry Date:** 28/08/2024
Start Date of Work: 1/12/2021	**State Issued:** NSW
Finish Date of Work: 31/12/2021	**Registered Business Name:** Serve Group Pty Ltd
	A.B.N: 30159209024
	Daytime Contact Number: 1300119233

Amend Withdraw

Tasks:	Details:	Action Required:
Applicant Details	Serve Group Pty Ltd	Done
Work Site Owner	Mr Van Gorp, Andrew	Done
Site Details	0 Kingsway, Caringbah, NSW 2229	Done
Clearance Certificate Details	Alex White	Done
Supervisor	MR Pereira De Menezes F, Luiz, Carlos	Done
Type of Work - Asbestos	A selection has been made - see details	Done
Asbestos Removal Control Plan (Safe Work Method Statement)	Details have been entered - see details	Done
Declaration	WADE ROGERS, MANAGING DIRECTOR	Done

Comments(0) Attachments(0) Notification Output(0)

Clearsafe
ENVIRONMENTAL SOLUTIONS

Providing professional consulting and laboratory services nationally.

CAPABILITY STATEMENT

Our business philosophy is centred on fast reporting and competitive pricing.

Our Quality Management System is independently accredited to AS/NZS ISO 9001 Quality Management Systems - Requirements, and our Laboratory Management System is NATA accredited to AS ISO/IEC 17025 General Requirements for Competence of Testing and Calibration Laboratories.

Our company carries insurance coverage for Professional Indemnity, Public Liability and Workers Compensation.

Clearsafe takes great pleasure in offering consulting and laboratory services within the following areas:

- Asbestos / Hazardous Materials Consulting
- Occupational Exposure Assessment
- Expert Health Risk Assessment
- NATA Accredited Asbestos Identification
- Occupational Noise Assessment
- NATA Accredited Asbestos Air Monitoring
- Occupational Lighting Assessment
- Ambient Air Quality Assessment
- Indoor Air Quality Assessment
- Environmental Site Assessment
- Waste Classification
- Contaminated Site Remediation Planning
- Contaminated Site Validation
- On-site Training and Assessment
- Project Management

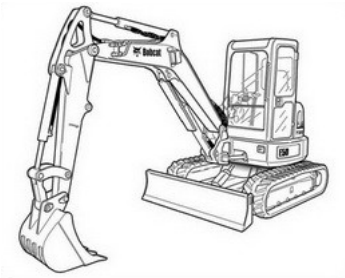
Clearsafe Environmental Solutions Pty Ltd
ABN: 31 146 947 766

NATA Accredited Laboratory Number 18542
Tel: 1300 042 962
Email: info@clearsafe.com.au
www.clearsafe.com.au

NATA
WORLD RECOGNISED ACCREDITATION

ISO 9001 Certified

Noble Works Australia Pty Ltd
Plant Risk Assessment



Plant Description:	Bobcat E50 4.905kg Excavator	**Revised:**	MAR 2020	**Approved By:**	Blain Knox

Specifications:

Plant Weight	4905kg	**Plant Width:**	2074mm
Fuel Type:	Diesel	**Plant Height:**	2541mm; 5595mm @ Max Reach
Top Speed:	5 km/h	**Plant Length:**	3578mm; 6976mm @Max Reach
Safety Features:	Roll-Over Protection; Objects Protection; Safety Lockout Levers; Flashing Lights; Reversing Alarm		
Last Service:	29/10/2019	**Compliance:**	See Bobcat E50 Manual for compliance with Standards and Laws

DAILY PRESTART IS REQUIRED ON ALL NOBLE WORKS PLANT:

IF THIS LOGBOOK IS MISSING CONTACT OFFICE BEFORE OPERATING.

IF MACHINE IS FAULTY, REMOVE KEYS AND CONTACT OFFICE.

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Entanglement • Catching of loose clothing, hair, limbs and digits in rotating/moving parts	Tracks, rotating and moving parts	**12 H**	• Ensure that hands, feet, clothing, jewellery and hair do not come in contact with the moving part.	**8 M**	• Training. • Be aware of all the safety signs on the machine, follow all the safety instructions, including those for maintenance
Crushing • Trapped and crush of persons between fixed structures or other barriers and driven plant • Trapped between arm/stick and other hydraulic parts	• Crushed by digging arm with the ground • Run over crushed between cabin and other objects	**19 E**	• Follow all Safety Instructions • Confirm location of bystanders at all time • Use the horn when moving	**9 M**	• Keep machine in proper working order • Use a signal person when moving, winging or operating

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Strike/Collison • Person struck by moving parts of the machine whilst on the ground • Two machines colliding	• Moving arm • Cabin swing area • Tracks – whole machine	**19 E**	• Only start engine whilst in the • operators' seat • Park on level ground • Provide signals for jobs involving multiple numbers of machines • Use a signal person. • Look for bystanders before moving • Safe work Instructions. • Set up barriers around perimeter of swing area. • Secure the machine properly before carrying out any maintenance	**9 M**	• No riders on the machine at any time • Training in signalling • Mirrors & lights kept clean and in good • condition • Attach a do not operate tag before carrying out any maintenance
Electrical • Electrocution from faulty wires or from overhead power lines or underground lines	• Hitting overhead power lines or underground lines	**19 E**	• Never move any part of the machine or load closer than 3m plus twice the line insulator length	**9 M**	• Keep all bystanders and co-workers away from the site • Locate all underground lines • Training • Safe work instructions
Fire/explosion • Ruptured underground cables or gas lines from digging • Fire caused by fuel in the machine or battery	• Digging • Refuelling the machine • Oil leaks • Engine area	**14 H**	• Prepare for emergencies • PPE • Before digging check locations of • underground lines • Dial before you dig • Keep the minimum distance required by law • Check for all oil leaks and shorts each shift or after 8-10 hours of operation	**5 L**	• Keep all ignition sources away from flammable fuels; always stop the engine before refuelling. • Store flammable fluids accordingly • Check the off switch every shift to ensure it still works (Pre Start) • Keep sparks away from the top of a battery
Ergonomics • Discomfort from poorly designed seating, a prolonged time in the same posture (fatigue)	• Cabin area • Seating	**8 M**	• Adjust the operators seat • Regular rest breaks • Job rotation • Operate the machine in the seated position only	**4 L**	• Maintenance of cushion/seat comfort

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Chemicals/Fumes • Inhalation of fumes, skin irritation, and adverse health effects from chemicals	• Refuelling the machine • Handling chemicals • Chemical leaks on the • machine • Exhaust fumes	**9 M**	• Adequate ventilation • PPE • Avoid contact with hazardous substances • Read the MSDS before using any chemical	**5 L**	• Maintenance of filters • Use of chemicals/fuels within expiry date
Falling Objects • Any objects falling from above from the load or environment	• Falling materials from the • load • Items that have been left on the machine	**17 H**	• Never lift, move or swing bucket above anyone or over machines	**6 M**	• Do not use the machine for crane operation • Wear goggles or safety glasses
Falls from height • Falling from the machine to the ground	• Whilst climbing the side to enter cabin • Normal operation	**13 M**	• Fasten seat belt at all times • Remain seated at all times • Never allow others to ride on the machine	**5 L**	• Use handholds and steps • Maintain three points of contact at all times
Over turning of machine • The machine over turns, tips or falls from height	• Whole machine on sloppy area or unstable ground	**19 E**	• Investigate job site beforehand • When travelling up or down a grade, Keep the bucket in the direction of travel approximately 200-300mm above the ground • Safe Work Instruction	**6 M**	• Signal person • Reinforce grounds, edges & • Broad shoulders • Drive machines safely (not across the face of a slope) • Make a work plan • Avoid undercutting
Burns Burns from hot water/fluids, steam, the engine, hoses & other parts that become hot	• Engine area after prolonged use	**10 H**	• Inspect and maintain the machine on a regular basis • Wait for the machine to cool down before conducting any maintenance	**6 M**	• Avoid heat by welding, soldering or using a torch near pressurised fluid lines or other flammable materials

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
High pressure • Skin injection from the application of Hydraulic Pressure Jet • Ingress of water or contaminants to eyes	• Hoses • Radiator	**10 H**	• Do not attempt to remove grease fitting or valve assembly • Make sure all tools and implements are stored away to prevent damage to lines • PPE	**6 M**	• Keep body & face away from air release plug • Wait for the gear oil and radiator to cool down before releasing pressure • Replace rubber hoses periodically
Noise • Excessive noise from the machine • or surrounding environment	• Engine • While digging • While breaking	**7 M**	• PPE • Operate at different times to others • Isolate the machine	**1 L**	• N/A

Average Risk	**14 H**

Average Residual Risk	**7 M**

ALL OPERATORS TO BE FAMILIAR WITH MACHINE AND HAVE VERIFICATION OF COMPETENCY (VOC) CARD AT ALL TIMES	
NAME	**SIGNATURE**

Qualitative Risk Matrix:

Likelihood of the Consequence	Maximum Reasonable Consequence				
	(1) Insignificant	(2) Minor	(3) Moderate	(4) Major	(5) Catastrophic
(A) Almost certain	11 High	16 High	20 Extreme	23 Extreme	25 Extreme
(B) Likely	7 Moderate	12 High	17 High	21 Extreme	24 Extreme
(C) Occasionally	4 Low	8 Moderate	13 High	18 Extreme	22 Extreme
(D) Unlikely	2 Low	5 Low	9 Moderate	14 High	19 Extreme
(E) Rare	1 Low	3 Low	6 Moderate	10 High	15 High

Source: AS/NZS 4360:2004 Risk Management

Noble Works Australia P.O. Box 111 WEST RYDE 1685 Sydney Australia ABN: 52 133 963 032

Noble Works Australia Pty Ltd
Plant Risk Assessment

Plant Description:	BOBCAT S70 Compact Track Loader	**Revised:**	JAN 2020	**Approved By:**	Blain Knox
Specifications:					
Plant Weight	1268 kg	**Plant Width:**	914 mm (Bucket), 901mm (Tracks)		
Fuel Type:	Diesel	**Plant Height:**	1814 mm; 3051mm @ Max Reach		
Top Speed:	9.8 km/h	**Plant Length:**	2472 mm		
Safety Features:	Roll-Over Protection; Objects Protection; Safety Lockout Levers; Flashing Lights; Reversing Alarm, Reverse Camera				

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Entanglement • Catching of loose clothing, hair, limbs and digits in rotating/moving parts	Wheels, rotating and moving parts	**12 H**	• Ensure that hands, feet, clothing, jewellery and hair do not come in contact with the moving part.	**8 M**	• Training. • Be aware of all the safety signs on the machine, follow all the safety instructions, including those for maintenance
Crushing • Trapped and crush of persons between fixed structures or other barriers and driven plant • Trapped between arm/bucket and other hydraulic parts or tracks	• Crushed by bucket with the ground • Run over crushed between cabin and other objects	**19 E**	• Follow all Safety Instructions • Confirm location of bystanders at all time • Use the horn when moving	**9 M**	• Keep machine in proper working order • Use a signal person when moving, winging or operating
Strike/Collison • Person struck by moving parts of the machine whilst on the ground • Two machines colliding	• Moving arm/bucket • Tracks – whole machine	**19 E**	• Only start engine whilst in the • operators' seat • Park on level ground • Provide signals for jobs involving multiple numbers of machines • Use a signal person. • Look for bystanders before moving • Safe work Instructions. • Set up barriers around perimeter of swing area. • Secure the machine properly before carrying out any maintenance	**9 M**	• No riders on the machine at any time • Training in signalling • Mirrors & lights kept clean and in good • condition • Attach a do not operate tag before carrying out any maintenance

Noble Works Australia P.O. Box 111 WEST RYDE 1685 Sydney Australia ABN: 52 133 963 032

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Electrical • Electrocution from faulty wires or from overhead power lines or underground lines	• Hitting overhead power lines or underground lines	**19 E**	• Never move any part of the machine or load closer than 3m plus twice the line insulator length	**9 M**	• Keep all bystanders and co-workers away from the site • Locate all underground lines • Training • Safe work instructions
Fire/explosion • Ruptured underground cables or gas lines from digging • Fire caused by fuel in the machine or battery	• Digging • Refuelling the machine • Oil leaks • Engine area	**14 H**	• Prepare for emergencies • PPE • Before digging check locations of • underground lines • Dial before you dig • Keep the minimum distance required by law • Check for all oil leaks and shorts each shift or after 8-10 hours of operation	**5 L**	• Keep all ignition sources away from flammable fuels; always stop the engine before refuelling. • Store flammable fluids accordingly • Check the off switch every shift to ensure it still works (Pre Start) • Keep sparks away from the top of a battery
Ergonomics • Discomfort from poorly designed seating, a prolonged time in the same posture (fatigue)	• Cabin area • Seating	**8 M**	• Adjust the operators seat • Regular rest breaks • Job rotation • Operate the machine in the seated position only	**4 L**	• Maintenance of cushion/seat comfort
Chemicals/Fumes • Inhalation of fumes, skin irritation, and adverse health effects from chemicals	• Refuelling the machine • Handling chemicals • Chemical leaks on the • machine • Exhaust fumes	**9 M**	• Adequate ventilation • PPE • Avoid contact with hazardous substances • Read the MSDS before using any chemical	**5 L**	• Maintenance of filters • Use of chemicals/fuels within expiry date
Falling Objects • Any objects falling from above from the load or environment	• Falling materials from the load • Items that have been left on the machine	**17 H**	• Never lift, move or swing bucket above anyone or over machines	**6 M**	• Do not use the machine for crane operation • Wear goggles or safety glasses

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Falls from height • Falling from the machine to the ground	• Whilst climbing the front to enter cabin • Normal operation	13 M	• Fasten seat belt at all times • Remain seated at all times • Never allow others to ride on the machine	5 L	• Use handholds and steps • Maintain three points of contact at all times
Over turning of machine • The machine over turns, tips or falls from height	• Whole machine on sloppy area or unstable ground	19 E	• Investigate job site beforehand • When travelling up or down a grade, Keep the bucket in the direction of travel approximately 200-300mm above the ground • Safe Work Instruction	6 M	• Signal person • Reinforce grounds, edges & • Broad shoulders • Drive machines safely (not across the face of a slope) • Make a work plan • Avoid undercutting
Burns • Burns from hot water/fluids, steam, the engine, hoses & other parts that become hot	• Engine area after prolonged use	10 H	• Inspect and maintain the machine on a regular basis • Wait for the machine to cool down before conducting any maintenance	6 M	• Avoid heat by welding, soldering or using a torch near pressurised fluid lines or other flammable materials
High pressure • Skin injection from the application of Hydraulic Pressure Jet • Ingress of water or contaminants to eyes	• Hoses • Radiator	10 H	• Do not attempt to remove grease fitting or valve assembly • Make sure all tools and implements are stored away to prevent damage to lines • PPE	6 M	• Keep body & face away from air release plug • Wait for the gear oil and radiator to cool down before releasing pressure • Replace rubber hoses periodically
Noise • Excessive noise from the machine • or surrounding environment	• Engine • While digging • While breaking	7 M	• PPE • Operate at different times to others • Isolate the machine	1 L	• N/A

Average Risk	14 H

Average Residual Risk	7 M

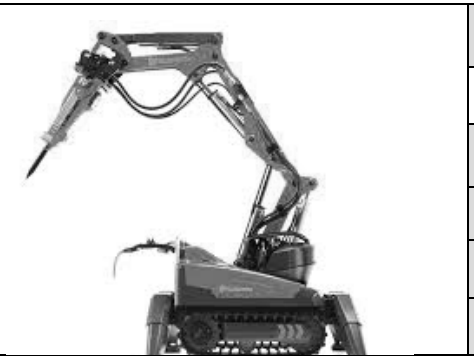
Qualitative Risk Matrix:

Likelihood of the Consequence	Maximum Reasonable Consequence				
	(1) Insignificant	(2) Minor	(3) Moderate	(4) Major	(5) Catastrophic
(A) Almost certain	11 High	16 High	20 Extreme	23 Extreme	25 Extreme
(B) Likely	7 Moderate	12 High	17 High	21 Extreme	24 Extreme
(C) Occasionally	4 Low	8 Moderate	13 High	18 Extreme	22 Extreme
(D) Unlikely	2 Low	5 Low	9 Moderate	14 High	19 Extreme
(E) Rare	1 Low	3 Low	6 Moderate	10 High	15 High

Source: AS/NZS 4360:2004 Risk Management

Noble Works Australia P.O. Box 111 WEST RYDE 1685 Sydney Australia ABN: 52 133 963 032

Noble Works Australia Pty Ltd
Plant Risk Assessment



Plant Description:	Husqvarna DXR 140	**Revised:**	March 2019	**Approved By:**	Blain Knox
		Specifications:			
Plant Weight	985 kg (Without tool) to 1185 kg (With Tool)	**Plant Width:**	771mm to 1770mm @ Outrigger Deployment		
Fuel Type:	None – 3 Phase Power	**Plant Height:**	1210mm; 4931mm @ Max Reach		
Top Speed:	3 km/h	**Plant Length:**	1932mm; 5185mm @Max Reach		
Safety Features:	Objects Protection; Safety; Lights; Movement Alarm				

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Entanglement • Catching of loose clothing, hair, limbs and digits in rotating/moving parts	Tracks, rotating and moving parts	**12 H**	• Ensure that hands, feet, clothing, jewellery and hair do not come in contact with the moving part.	**8 M**	• Training. • Be aware of all the safety signs on the machine, follow all the safety instructions, including those for maintenance
Crushing • Trapped and crush of persons between fixed structures or other barriers and plant • Trapped between arm/stick and other hydraulic parts	• Crushed by arm with the ground • Run over crushed between plant and other objects	**19 E**	• Follow all Safety Instructions • Confirm location of bystanders at all time • Use the horn when moving	**9 M**	• Keep machine in proper working order • Use a signal person when moving, swinging or operating
Strike/Collison • Person struck by moving parts of the machine whilst on the ground • Two machines colliding	• Moving arm • Swing area • Tracks – whole machine	**19 E**	• Only use arm hydraulics when stationary • Park on level ground • Provide signals for jobs involving multiple numbers of machines • Use a signal person. • Look for bystanders before moving • Safe work Instructions. • Set up barriers around perimeter of swing area. • Secure the machine properly before carrying out any maintenance	**9 M**	• No riders on the machine at any time • Training in signalling • Alarms & Lights kept clean and in good condition • Attach a do not operate tag before carrying out any maintenance

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Electrical • Electrocution from faulty wires or from overhead power lines or underground lines • Electrocution from 3-Phase power lead • Electrocution from submerged machine	• Hitting overhead power lines or underground lines • From 3-Phase supply to machine • Body of water	**19 E**	• Never move any part of the machine or load closer than 3m plus twice the line insulator length • Ensure power lead is monitored at all times, maintenance of power lead • Never move/operate machine in water deep enough to be above tracks.	**9 M**	• Keep all bystanders and co-workers away from machine • Locate all underground lines • Training • Safe work instructions
Fire/explosion • Ruptured underground cables or gas lines from demolition activity • Fire caused by faulty machine	• General activity • Refuelling the machine • Oil leaks • Engine area	**14 H**	• Prepare for emergencies • PPE • Before working check locations of services • Dial before you dig • Keep the minimum distance required by law • Check for all oil leaks and shorts each shift or after 8-10 hours of operation	**5 L**	• General maintenance of machine • Use of Spotters
Ergonomics • Discomfort from extended control (RSI), a prolonged time in the same posture (fatigue)	• Control harness	**8 M**	• Regular rest breaks • Job rotation • Operate the machine in comfortable position only	**4 L**	• Maintenance of controls
Falling Objects • Any objects falling from above from the work environment	• Falling materials from the work area • Items that have been left on the machine	**17 H**	• Never lift, move or swing arm above anyone or over machines	**6 M**	• Do not use the machine for crane operation • Wear goggles or safety glasses

Hazard	Activity/Location	Risk	Remedy/Controls	Residual Risk	Additional Controls
Over turning of machine • The machine over turns, tips or falls from height	• Whole machine on sloppy area or unstable ground	19 E	• Investigate job site beforehand • When travelling up or down a grade, Keep the bucket in the direction of travel approximately 200-300mm above the ground • Safe Work Instruction • Appropriate use of outriggers	6 M	• Signal person • Reinforce grounds, edges & Broad shoulders • Drive machines safely (not across the face of a slope) • Make a work plan • Avoid undercutting
Burns • Burns from hot water/fluids, steam, the hydraulics, hoses & other parts that become hot	• Engine/Hydraulics area after prolonged use	10 H	• Inspect and maintain the machine on a regular basis • Wait for the machine to cool down before conducting any maintenance	6 M	• Avoid heat by welding, soldering or using a torch near pressurised fluid lines or other flammable materials
High pressure • Skin injection from the application of Hydraulic Pressure Jet • Ingress of water or contaminants to eyes	• Hoses • Hydraulics	10 H	• Do not attempt to remove grease fitting or valve assembly • Make sure all tools and implements are stored away to prevent damage to lines • PPE	6 M	• Keep body & face away from air release plug • Wait for the gear oil and radiator to cool down before releasing pressure • Replace rubber hoses periodically
Noise • Excessive noise from the machine • or surrounding environment	• Engine • While pulverising • While breaking	7 M	• PPE • Operate at different times to other loud equipment • Isolate the machine	1 L	• N/A

Average Risk	14 H

Average Residual Risk	6 M

Qualitative Risk Matrix:

Likelihood of the Consequence	**Maximum Reasonable Consequence**				
	(1) Insignificant	(2) Minor	(3) Moderate	(4) Major	(5) Catastrophic
(A) Almost certain	11 High	16 High	20 Extreme	23 Extreme	25 Extreme
(B) Likely	7 Moderate	12 High	17 High	21 Extreme	24 Extreme
(C) Occasionally	4 Low	8 Moderate	13 High	18 Extreme	22 Extreme
(D) Unlikely	2 Low	5 Low	9 Moderate	14 High	19 Extreme
(E) Rare	1 Low	3 Low	6 Moderate	10 High	15 High

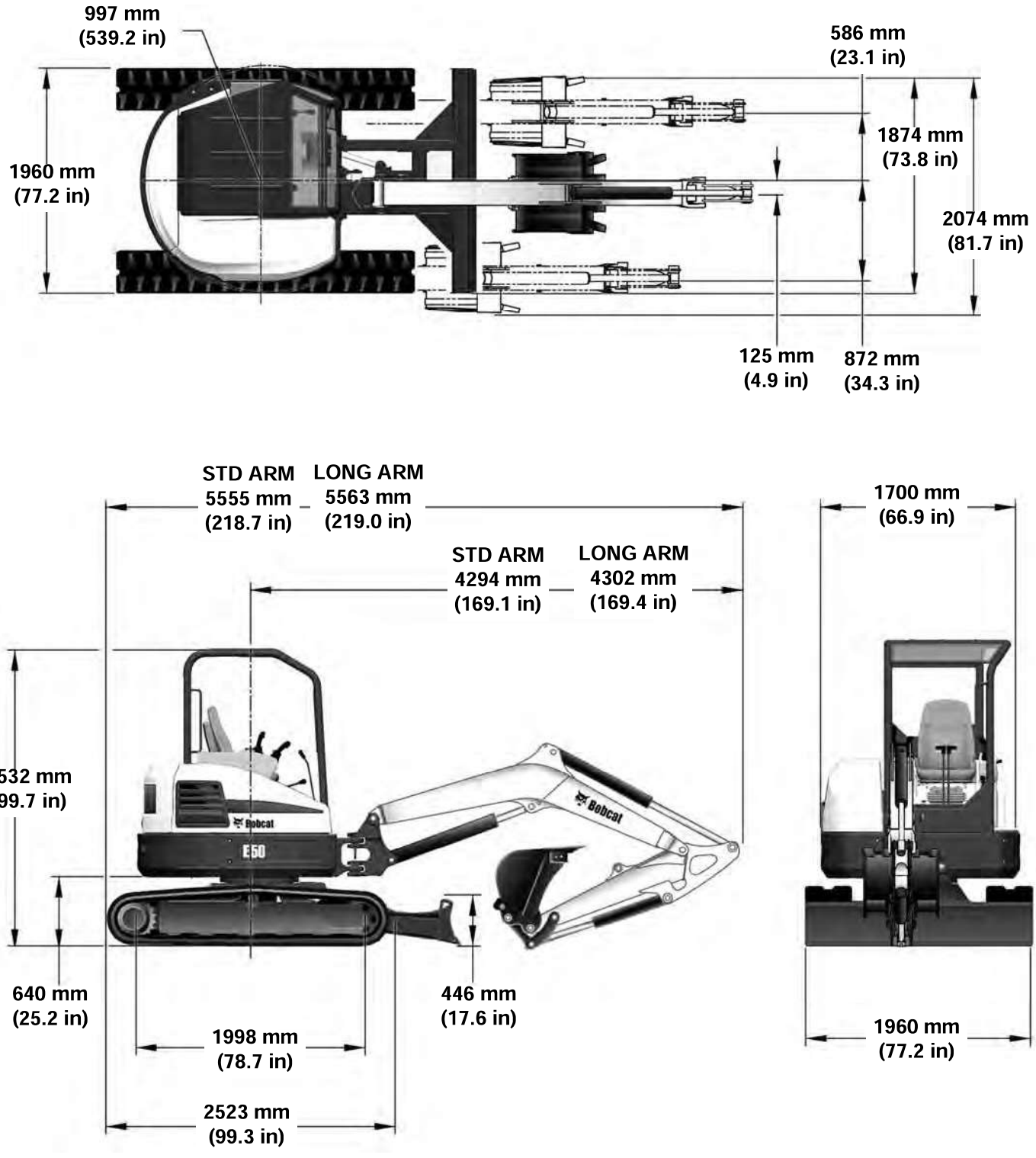
Source: AS/NZS 4360:2004 Risk Management

Noble Works Australia P.O. Box 111 WEST RYDE 1685 Sydney Australia ABN: 52 133 963 032

EXCAVATOR SPECIFICATIONS

E50 Excavator Machine Dimensions

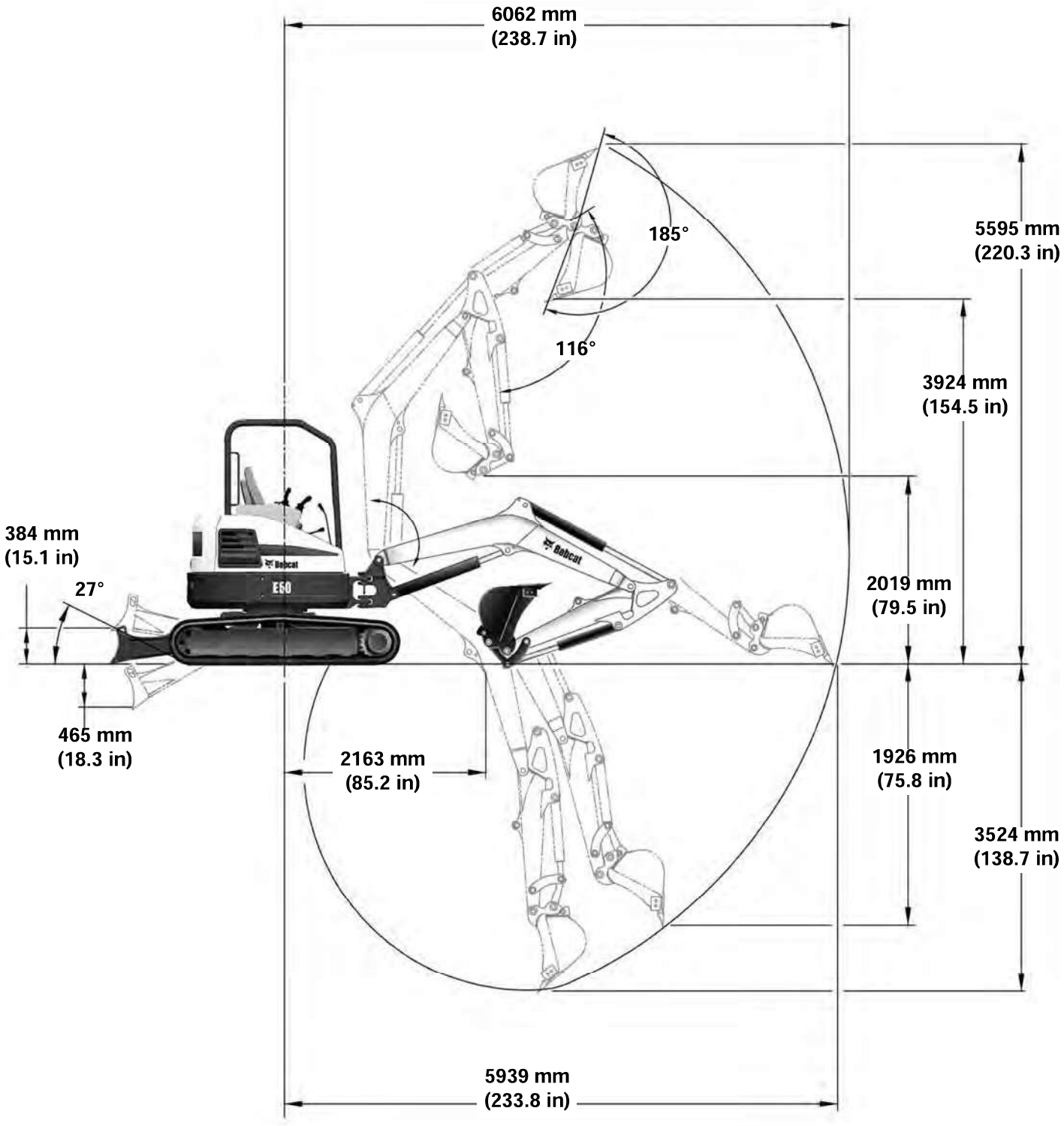
- Where applicable, specification conform to SAE or ISO standards and are subject to change without notice.



NA5066

E50 Excavator Machine Dimensions - Standard Arm

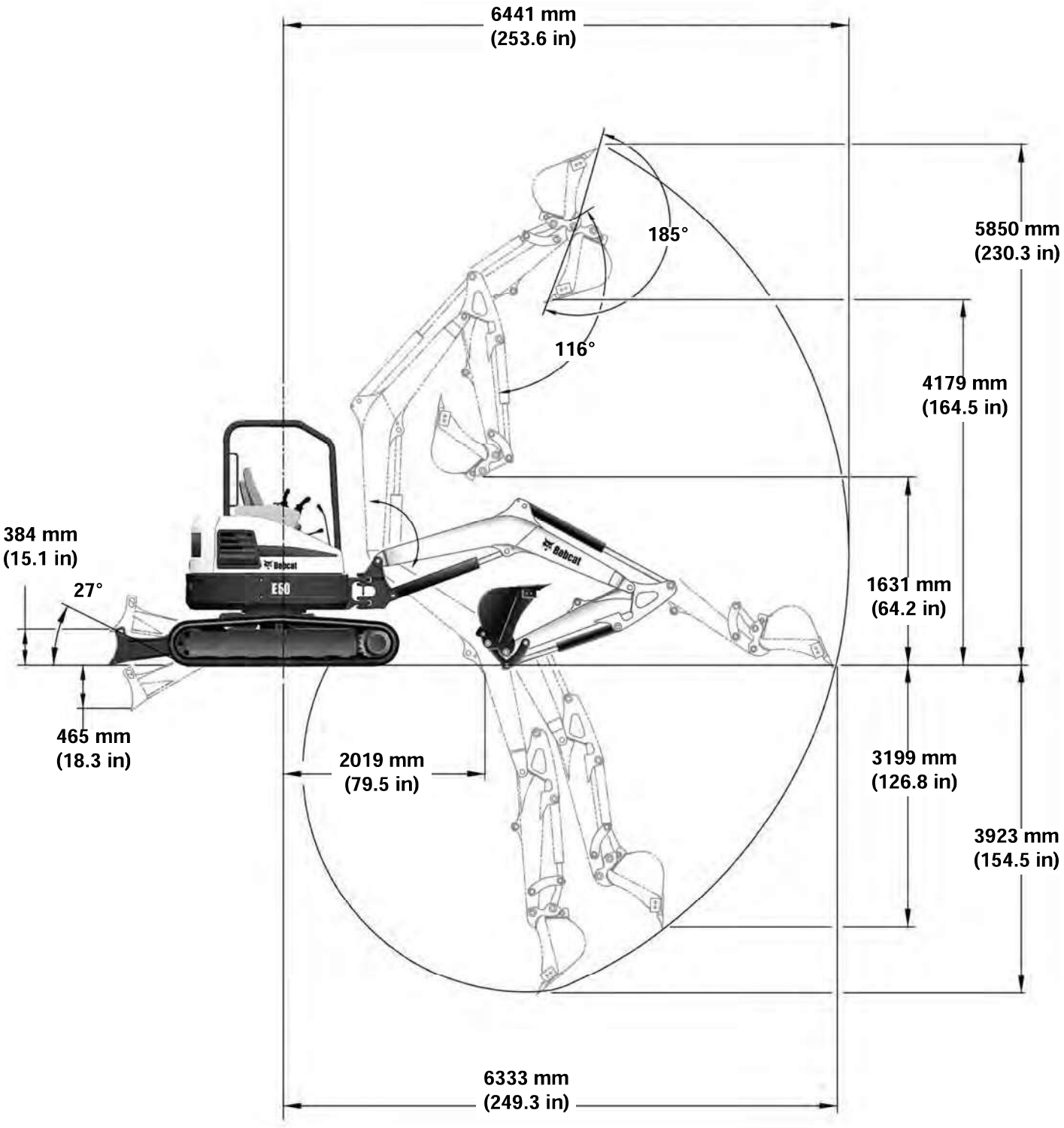
- Where applicable, specification conform to SAE or ISO standards and are subject to change without notice.



NA5067

E50 Excavator Machine Dimensions - Long Arm

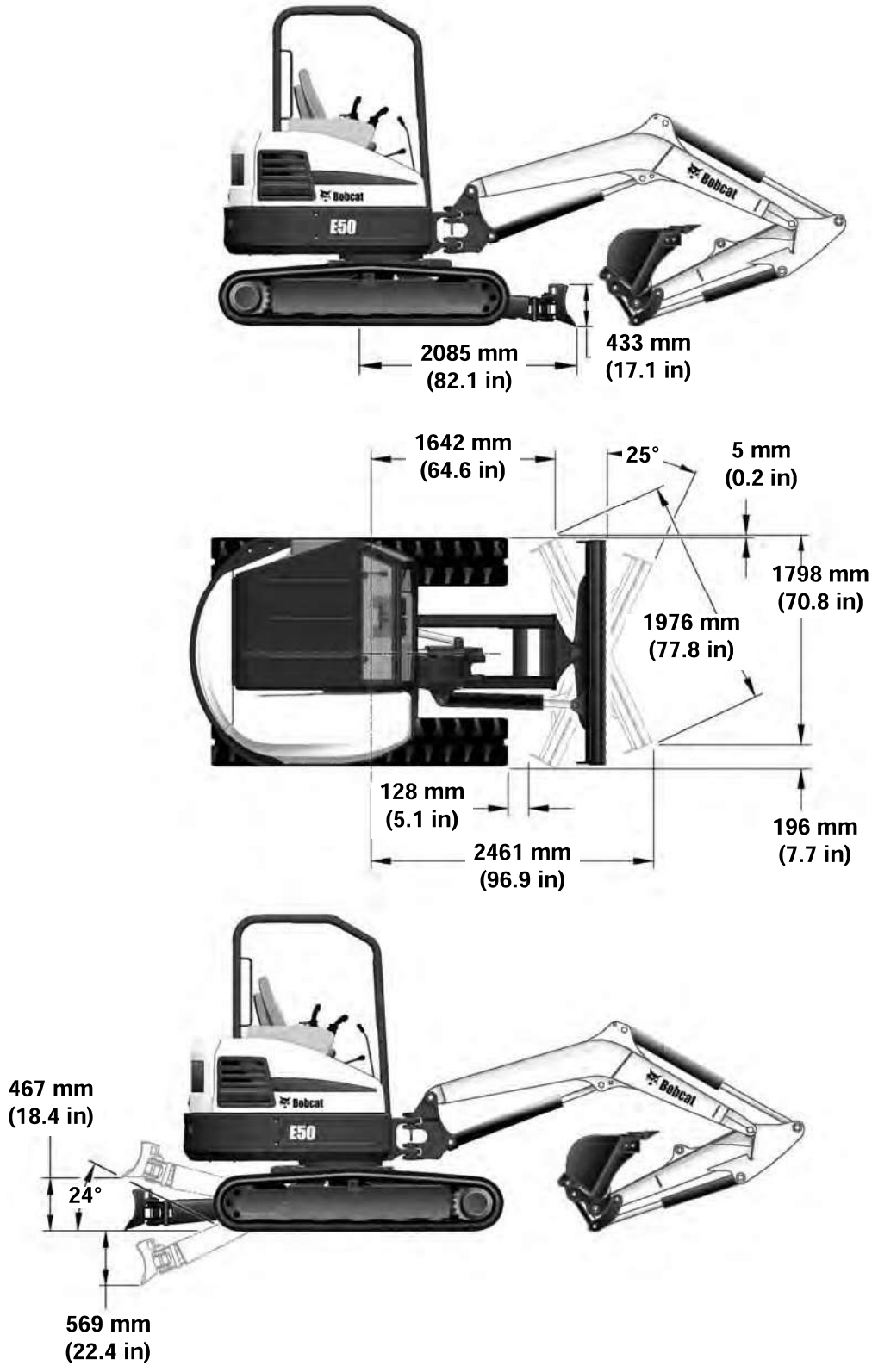
- Where applicable, specification conform to SAE or ISO standards and are subject to change without notice.



NA5067

E50 Excavator Machine Dimensions - Angle Blade

- Where applicable, specification conform to SAE or ISO standards and are subject to change without notice.



NA5030A

Performance

E50		
Operating weight (canopy w/ rubber tracks, and 610 mm (24 in) bucket)	4843 kg (10677 lb)	
If equipped with the following, add:	Steel tracks, add 131kg (289 lb); Cab w/ Heater, add 121 kg (267 lb); Cab w/ HVAC, add 140 kg (309 lb); Long Arm (with additional counterweight), add 235 kg (518 lb); Additional Counterweight 204 kg (450 lb); Angle Blade, add 157 kg (346 lb) Hydraulic Clamp, add 99 kg (218 lb) Pro Clamp System, Add 144 kg (317 lb)	
Travel Speed (Low / High)	3,1 kph (1.9 mph) / 5,0 kph (3.1 mph)	
Digging Force (per ISO 6015)		
With Standard Arm	Arm - 29997 N (6744 lbf) Bucket - 39930 N (8977 lbf)	
With Long Arm	Arm - 25580 N (5751 lbf) Bucket - 39930 N (8977 lbf)	
Boom Swing	Left 75°	Right 50°

Controls

Steering	Two hand levers (optional foot pedals)
Hydraulics	Two hand operated levers (joysticks) control boom, bucket, arm and upperstructure slew
Blade	Hand lever
Angle Blade (If Equipped)	Switch on blade lever
Two-Speed	Switch on blade lever
Boom Switch	Electric switch in left joystick
Auxiliary Hydraulics	Electric switch in right joystick
Auxiliary Pressure Release	Electric switch in right joystick - Standard Instrument Panel Display Panel Button - Deluxe Instrument panel
Engine	Engine speed control dial with auto idle feature, key type start switch
Starting Aid	Glow Plugs - activated by key switch
Brakes Travel Service & Parking Swing Service Holding	 Hydraulic lock in motor circuit Hydraulic lock on motor Spring applied - hydraulic release

Engine

Make / Model	Kubota V2403-M-DI-TE3B-BC-4
Fuel / Cooling	Diesel / Liquid
Horsepower (SAE Net) @ 2200 RPM	35,4 kW (47.5 hp)
Torque @ 1200 RPM (SAE Net)	179,5 N•m (132.4 ft-lb)
Number Of Cylinders	4
Displacement	2,433 L (148.5 in^3)
Bore / Stroke	87,1 x 102,4 mm (3.43 x 4.03 in)
Lubrication	Pressure System with Filter
Crankcase Ventilation	Closed Breathing
Air Cleaner	Dry replaceable paper dual cartridge
Ignition	Diesel-Compression
Low Idle Speed	1200 rpm +/- 75 rpm
High Idle Speed	2450 rpm
Engine Coolant	Propylene Glycol / water mixture (53% PG / 47% water)

EXCAVATOR SPECIFICATIONS (CONT'D)

Hydraulic System

Pump Type	Engine driven, single outlet, variable displacement, load sensing, torque limited, piston pump
Pump Capacity Piston Pump	138,5 Lpm (36.6 gpm)
Auxiliary Flow (Aux3)	75,7 Lpm (20.0 gpm)
Auxiliary Flow - 2nd Aux S/N: AHHE14000 - AHHE14775 Equipped with non-angle blade (Female Coupler) (Male Coupler)	 26,4 L/min (7.0 US gpm) 21,0 L/min (5.5 US gpm)
Auxiliary Flow - 2nd Aux S/N: AHHE1400 - AHHE14771 Equipped with angle blade (Female Coupler) (Male Coupler)	 26,4 L/min (7.0 US gpm) 21,0 L/min (5.5 US gpm)
Auxiliary Flow - 2nd Aux S/N: AHHE14776 & Above Equipped with non-angle blade (Female Coupler) (Male Coupler)	 45,4 L/min (12.0 US gpm) 34,1 L/min (9.0 US gpm)
Auxiliary Flow - 2nd Aux S/N: AHHE14772 & Above Equipped with angle blade (Female Coupler) (Male Coupler)	 45,4 L/min (12.0 US gpm) 34,1 L/min (9.0 US gpm)
Hydraulic Filter	Full flow replaceable, 3 micron synthetic media element
Control Valve	closed center, individually compensated
Fluid Type	Bobcat Fluid, Hydraulic / Hydrostatic 6903117 - (2.5 U.S. gal) 6903118 - (5 U.S. gal) 6903119 - (55 U.S. gal)
System Relief Pressure Slew Circuit Boom, Blade, Arm, Bucket, Boom Swing, Auxiliary Joystick Control Pressure	 24097 kPa (241 bar) (3495 psi) 25580 kPa (256 bar) (3710 psi) 2999 kPa (30 bar) (435 psi)
Auxiliary Port Relief, Male And Female Couplers	20995 kPa (210 bar) (3045 psi)
Arm Port Relief, Base End And Rod End	28999 kPa (290 bar) (4206 psi)
Boom Port Relief, Base End And Rod End	28999 kPa (290 bar) (4206 psi)
Bucket Port Relief Base End And Rod End	28999 kPa (290 bar) (4206 psi)
Blade Port Relief Base End And Rod End	26000 kPa (260 bar) (3771 psi)
Angle Blade (If Equipped) Port Relief Base End And Rod End	27000 kPa (270 bar) (3916 psi)
Main Hydraulic Filter Bypass	345 kPa (3,5 bar) (50 psi)
Case Drain	172 kPa (1,7 bar) (25 psi)

Hydraulic Cylinders

Cylinder	Bore	Rod	Stroke
Boom (cushion up)	101,6 mm (4.00 in)	57,1 mm (2.25 in)	697 mm (27.45 in)
Arm (cushion retract / extend)	88,9 mm (3.50 in)	57,1 mm (2.25 in)	757 mm (29.82 in)
Bucket	82,6 mm (3.25 in)	50,8 mm (2.00 in)	524 mm (20.63 in)
Boom Swing	95,2 mm (3.75 in)	50,8 mm (2.00 in)	491 mm (19.32 in)
Blade	101,6 mm (4.00 in)	50,8 mm (2.00 in)	195 mm (7.68 in)
Angle Blade (If equipped)	63,5 mm (2.50 in)	38,1 mm (1.50 in)	423 mm (16.65 in)

Hydraulic Cycle Times

Bucket Curl	2.6 Seconds	
Bucket Dump	1.8 Seconds	
Arm Retract	3.1 Seconds	
Arm Extend	3.1 Seconds	
Boom Raise	4.8 Seconds	
Boom Lower	4.6 Seconds	
Boom Swing Left	AG3N14000 - AG3N14520 8.8 Seconds	AG3N14521 AND ABOVE 4.4 Seconds
Boom Swing Right	AG3N14000 - AG3N14520 8.1 Seconds	AG3N14521 AND ABOVE 4.6 Seconds
Blade Raise	3.1 Seconds	
Blade Lower	2.7 Seconds	
Angle Blade Left (If equipped)	1.8 Seconds	
Angle Blade Right (If equipped)	1.8 Seconds	

Drive System

Final Drive	Each track is driven by hydrostatic axial piston motor
Type of Reduction	56.4:1 two stage planetary

Slew System

Slew Motor	Axial piston connected to a planetary drive
Slew Circle	Single row shear type ball bearing with internal gear
Slew Speed	9.0 rpm

Undercarriage

Crawler Track Design	Sealed track rollers with boxed section track roller frame, grease type track adjuster with shock absorbing recoil spring
Width of crawler	1960 mm (77.2 in)

Electrical

Starting Aid	Glow Plugs
Alternator	12 volt, 90 Amp open frame w / internal regulator
Battery	12 volt - 540 CCA @ -18°C (0°F)
Starter	12 volt; gear reduction 2.0 kW (2.7 hp)
Lights	37.5 watt (2)
Instrumentation	**Gauges:** Engine Coolant Temperature, Fuel Level. **Warning lights:** Fuel Level, Seat Belt, Engine Coolant Temperature, Engine Malfunction, Hydraulic System Malfunction, General Warning. **Indicators:** Two-Speed, Engine Preheat. **Data Display:** Operating Hours, Engine rpm, Maintenance Clock Countdown, Battery Voltage, Service Codes, Engine Preheat. **Other:** Audible Alarm, Lights. **Optional Deluxe Instrumentation Panel:** *Additional displays for: Engine rpm, Coolant Temperature and Oil Pressure; System Voltage and Hydraulic Oil Temperature. *Additional Features Included: Keyless Start, Digital Clock, Job Clock, Password Lockout, Multi-language Display, Help Screens, Diagnostic Capability and Engine / Hydraulic Systems Shutdown Function.

Capacities

Fuel Tank	79,9 L (21.1 U.S. gal)
Hydraulic Reservoir Only (Center of Sight Glass)	Tank Cap. 15,1 L (4.0 U.S. gal)
Hydraulic System (with Reservoir)	54,9 L (14.5 U.S. gal)
Cooling System	8,3 L (2.2 U.S. gal)
Engine Oil and Filter	7,1 L (7.5 qt)
Final Drive (each)	1,0 L (1.1 qt)
Air Conditioning Refrigerant (R-134a)	0,77 kg (1.7 lb)

Tracks

Type	Rubber	Steel
Width	400 mm (15.7 in)	400 mm (15.7 in)
Number Of Shoes	Single Assembly	39
Number of Track Rollers (per side)	5	5

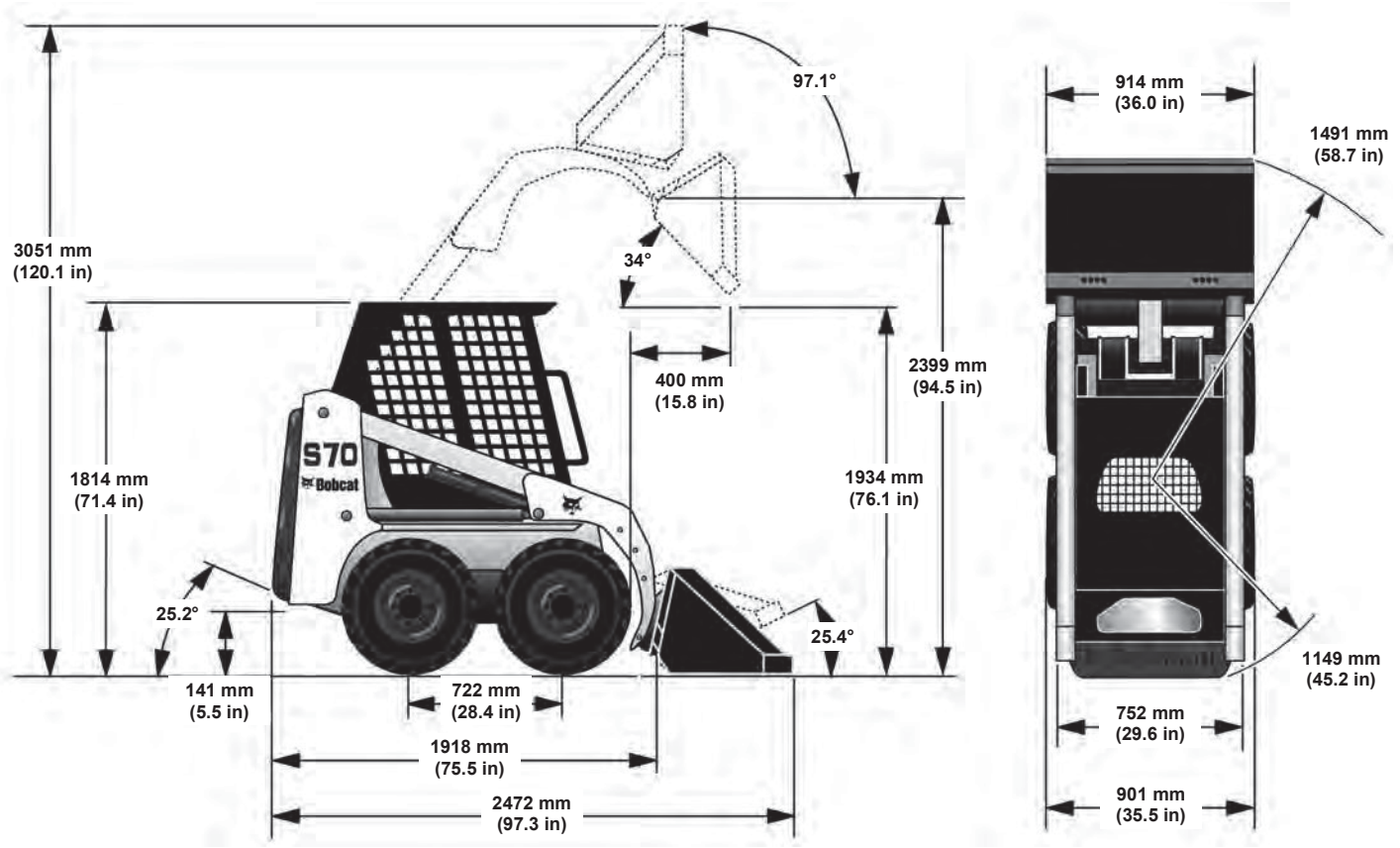
Ground Pressure

Rubber Tracks - Standard Arm Long Arm	27,2 kPa (0,272 bar) (3.95 psi) 27,9 kPa (0,280 bar) (4.05 psi)
Steel Tracks - Standard Arm Long Arm	28,5 kPa (0,285 bar) (4.14 psi) 29,3 kPa (0,293 bar) (4.25 psi)

(S70) LOADER SPECIFICATIONS

Machine Dimensions

- Dimensions are given for loader equipped with standard tires and 36 in. dirt bucket and may vary with other bucket types.
- Where applicable, specification conform to SAE or ISO standards and are subject to change without notice.



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Changes of structure or weight distribution of the loader can cause changes in control and steering response and can cause failure of the loader parts.

(S70) LOADER SPECIFICATIONS (CONT'D)

Performance

Rated Operating Capacity	318 kg (700 lb)
Tipping Load	686 kg (1512 lb)
Operating Weight	1268 kg (2795 lb)
SAE Breakout Force - Lift - Tilt	8607 N (1935 lb) 8674 N (1950 lb)
Travel Speed	0 - 9,8 km/h (0 - 6.1 mph)
Push Force	9519 N (2140 lb)

Engine

Make / Model:	
– A3W611001 & Above	Kubota / D1005-E3B-BC-3 Tier 4
– A3W711001 & Above	Kubota / D1005-E3B-BC-3 Tier 4
– B38V11001 & Above	Kubota / D1005-E4B-BC-3 Tier 4 NRTC
Fuel / Cooling	Diesel / Liquid
Horsepower:	
– ISO 9249 / SAE J1349 Net	16,8 kW (22.5 hp) @ 3000 rpm
– ISO 14396	17,2 kW (23.1 hp) @ 3000 rpm
– SAE J1995 Gross	17,5 kW (23.5 hp) @ 3000 rpm
Torque (SAE J1349 Gross)	62,8 N•m (45.6 ft-lb) @ 2200 rpm
Number of Cylinders	Three
Displacement	1001,0 cm^3 (61.08 in^3)
Bore / Stroke	76,0 mm / 73,6 mm (2.99 in / 2.90 in)
Lubrication	Gear Pump Pressure System with Filter
Crankcase Ventilation	Closed Breathing
Air Cleaner	Dry replaceable paper cartridge with separate safety element
Ignition	Diesel Compression
Air Induction	Naturally Aspirated
Low Idle	1125 - 1175 rpm
High Idle	3125 - 3175 rpm
Engine Coolant	Propylene Glycol / Water Mixture

Drive System

Main Drive	Hydrostatic 4 wheel drive
Transmission	Infinitely variable tandem hydrostatic piston pumps, driving two fully reversing hydrostatic motors.
Final Drive	Pre-stressed #60 HS endless roller chain (no master link) and sprockets in sealed chaincase with oil lubrication (Chains do not require periodic adjustments) Two chains per side with no idler sprocket
Total Engine to Wheel Reduction	31.25:1
Axle Size	37,6 mm (1.50 in), Heat treated
Wheel Bolts	Five - 9/16 in. Wheel bolts fixed to axle hubs

Controls

Vehicle Steering	Direction and speed controlled by two hand operated steering levers.
Loader Hydraulics - Lift and Tilt - Front Auxiliary Hydraulics (Std.)	 Controlled by separate foot pedals. Controlled by lateral movement of the right hand steering lever.
Engine	Hand lever speed control, key type start switch or optional keyless start, and optional engine shutdown (Rental Kit).
Starting Aid	Glow Plug - Automatically activated by Key Switch or Keyless instrumentation.
Service Brake	Two independent hydrostatic systems controlled by two hand operated steering levers.
Secondary Brake	One of the hydrostatic transmissions.
Parking Brake (Standard)	Mechanical disc, manually operated switch on front instrument panel.

Hydraulic System

Pump Type	Engine driven gear type
Pump Capacity	33,7 L/min (8.9 U.S. gpm) @ 3150 engine rpm
Filters	Full flow replaceable, 10 micron synthetic media element
System Relief at Quick Couplers	20,7 MPa (207 bar) (3000 psi)
Hydraulic Cylinders Bore Diameter: Lift Cylinder (2) Tilt Cylinder (1) Rod Diameter: Lift Cylinder (2) Tilt Cylinder (1) Stroke: Lift Cylinder (2) Tilt Cylinder (1)	Double acting; Tilt cylinder has cushioning feature on dump and rollback 50,8 mm (2.00 in) 76,2 mm (3.00 in) 31,8 mm (1.25 in) 31,8 mm (1.25 in) 555,5 mm (21.87 in) 268,2 mm (10.56 in)
Control Valve	3-Spool, open center type with spring detent for lift float and detent auxiliary hydraulic spool
Fluid Lines	SAE standard tubelines, hoses and fittings.
Fluid Type	BOBCAT FLUID, Hydraulic / Hydrostatic 6903117 - (2.5 U.S. gal) 6903118 - (5 U.S. gal) 6903119 - (55 U.S. gal)
Hydraulic Function Time: Raise Lift Arms Lower Lift Arms Bucket Dump Bucket Rollback	 3.6 Seconds 2.7 Seconds 2.1 Seconds 1.7 Seconds

Electrical

Alternator	Belt driven, 65 amperes ventilated
Battery	12 volt, 600 cold cranking amperes @ -18°C (0°F) 115 minute reserve capacity at 25 amperes
Starter	12 volt, gear type, 2,7 kW (3.62 hp)
Instrumentation	**Gauges:** Hourmeter, Engine Coolant Temperature, Voltmeter, and Fuel Level (on tank). **Warning lights:** Engine Warning, Transmission Warning, and Seat Belt. **Indicators:** BICS™ Functions.

Capacities

Engine Cooling System	5,7 L (6.0 qt)
Fuel	24,6 L (6.5 U.S. gal)
Engine Lubrication with Filter	3,7 L (3.9 qt)
Hydraulic / Hydrostatic Reservoir	5 L (5.3 qt)
Hydraulic / Hydrostatic System	15,1 L (4.0 U.S. gal)
Chaincase Reservoir	11,4 L (3.0 U.S. gal)

Tires

Standard Duty (Standard)	23 x 5.70 - 12, 4 Ply Rating
Heavy Duty (Option)	23 x 8.50 - 12, 6 Ply Rating
Recommended Pressure	Inflate tires to MAXIMUM pressure shown on the side wall of the tire. DO NOT mix brands of tires used on the same loader.

TECHNICAL DATA

Guide values for mains connection

The power cable must be dimensioned by a qualified person in accordance with national and local regulations. The mains socket to which the machine is connected must be dimensioned for the same amperage as the machine's electrical socket and extension cable, e.g. a 63 A electrical socket must be preceded by a 63 A fuse.

Engine - 15 kW

Nominal voltage from power source	Min. voltage at machine	Cable area	Starting current		Motor output	Setting thermal overload relay	Max. cable length*
V	V	mm^2/AWG	A		kW	A	m
400	380	4	75	50 Hz	15,0	27,0	177/581
400	380	6	75		15,0	27,0	266
400	380	10	75		15,0	27,0	444
460	440	4	75	60 Hz	15,0	24,0	200
460	440	6	75		15,0	24,0	300
460	440	10	75		15,0	24,0	500

*The cable lenght is calculated with respect to a voltage drop of 20 V during operation. Type of power source and wiring from power source to power outlet affects possible cable length.

The hydraulic system pressure

Type of pressure		Pressure, bar
Pump pressure	Tool, max	250
The pressure in the pipes between pump and main stop valve. The pressure varies between standby pressure and max. pressure depending on which hydraulic functions are being used.	Rotating function	180
	Outrigger down/up	250/130
	Arm functions	200
	External hand tool	50-250 (default 140)
Standby pressure*		20+/-1

* The pressure that the pump delivers when no function is activated and the circulation valve is shut.

Hydraulic fluid and lubricant

Hydraulic fluid

Quality	Minimum starting temperature, °C/°F	Max. temperature, °C/°F	Ideal working temperature, °C/°F
Mineral oil ISO VG32	-20/-4	75/167	35-60/95-140
Mineral oil ISO VG46 (Standard)	-10/14	85/185	45-70/13-158
Mineral oil ISO VG68	-5/23	90/194	55-80/131-176

Always ask the machine manufacturer before using a type of hydraulic fluid other than those mentioned above.

The quality of hydraulic fluid that the machine was supplied with is indicated on the sticker next to the filling pump.

NOTICE! The machine can be damaged if different types of hydraulic fluid are mixed. Check which quality of hydraulic fluid the hydraulic system contains before refilling or changing.

Lubricant

Component	Quality	Standard
Oil gearbox drive motor	SAE 80W-90	API GL 5
All lubrication points with grease nipples	NLGI 2	

Preset limit values

Description	Temperature, °C/°F
Oil temperature too high.	90/194
Oil temperature too low.	-5/23

Technical data

General	
Rotation speed, rpm	6
Transport speed max., km/h / mph	3/1,9
Angle of inclination, max.	30°
Hydraulic system	
Volume hydraulic system, l/gal	40/10
Pump type	Load sensing axial piston pump with variable displacement
Pump flow max.*, l/min / gal/min	52/14
Electric motor	**15 kW**
Power, kW	15 (50 Hz)
	15 (60 Hz)
Speed, rpm	2920 (50 Hz)
	3520 (60 Hz)
Voltage, V	380-420 (50 Hz)
	440-480 (60 Hz)
Current, A	27 (50 Hz)
	24,3 (60 Hz)
Control system	
Control type	Remote control
Signal transmission	Bluetooth/cable
Weight	
Without tool, kg / lb	985/2172
Tools	
Rec. max. weight, kg / lb	200/441

*Maximum pump flow and system pressure cannot be taken out at the same time, the motor will be overloaded. 60 Hz has limited displacement.

Noise emissions

Noise emissions in the environment measured as sound power (L_{WA}) in conformity with EC directive 2000/14/EC. The difference between the guaranteed and the measured noise level is a measurement of dispersion and variations in the declared value.

Machine without tool	
Sound power level, measured dB(A)	92
Sound power level, guaranteed L_{WA} dB(A)	93
Machine with tool (hydraulic hammer)	
Sound power level, measured dB(A)	113
Sound power level, guaranteed L_{WA} dB(A)	114

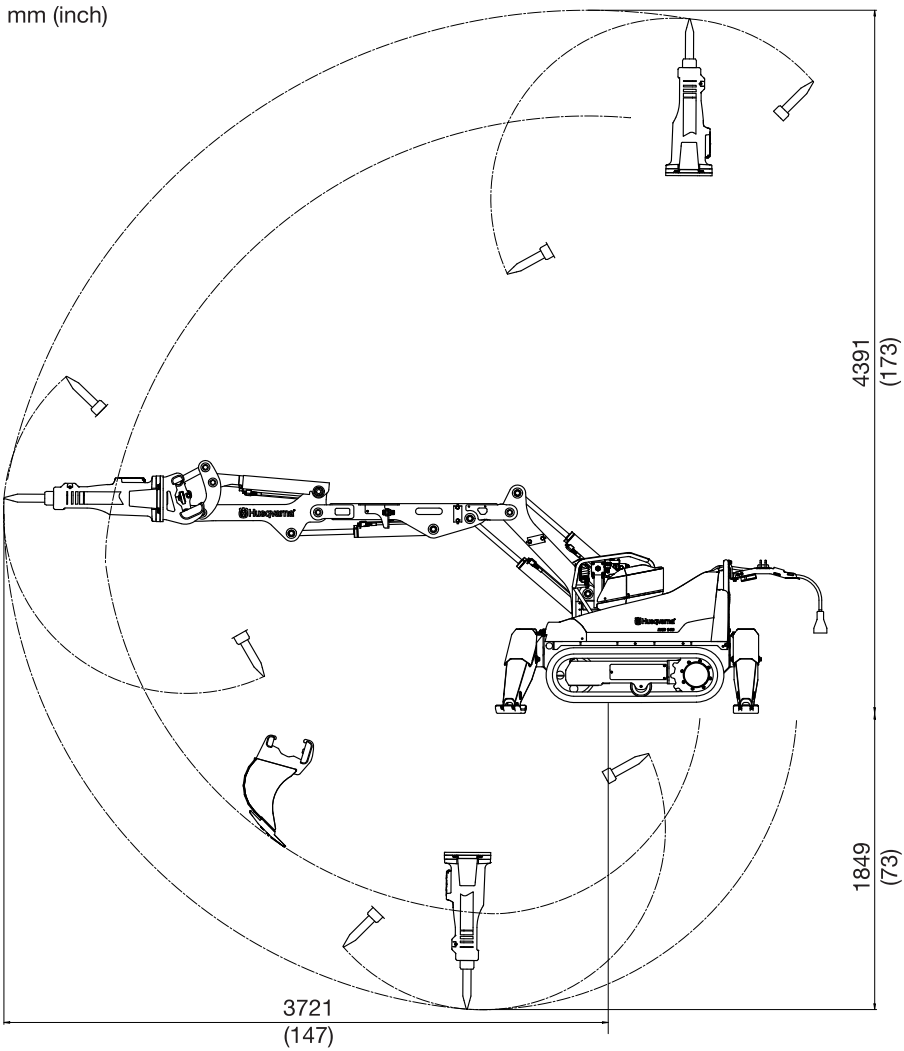
Sound level

Reported data for sound pressure level has a typical statistical dispersion (standard deviation) of 2 dB(A).

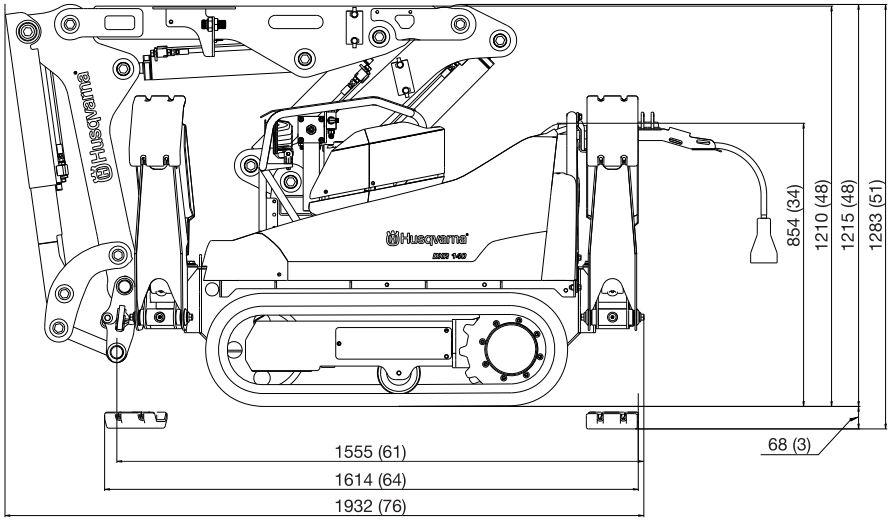
Sound level 10 m from the machine's tools*, dB(A)	87

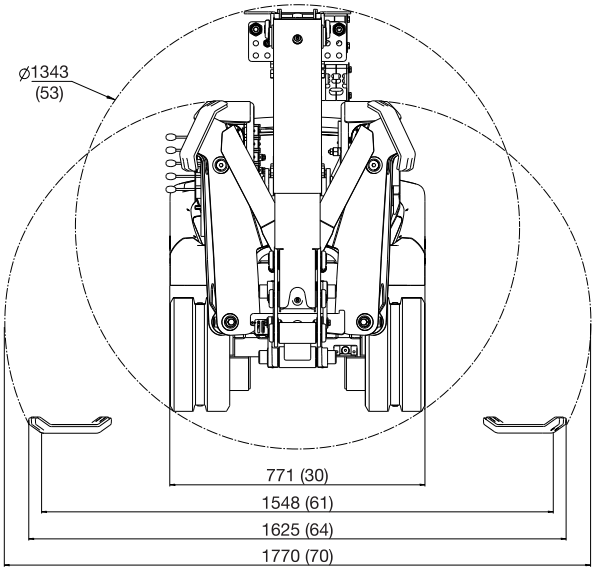
* The stated value refers to work with a hydraulic hammer. Other types of recommended tools create a considerably lower noise level.

Range and transport diagram



mm (inch)


854 (34)
1210 (48)
1215 (48)
1283 (51)
68 (3)
1555 (61)
1614 (64)
1932 (76)


ø1343
(53)
771 (30)
1548 (61)
1625 (64)
1770 (70)

EC DECLARATION OF CONFORMITY

EC Declaration of Conformity

(Applies to Europe only)

Husqvarna AB, SE-561 82 Huskvarna, Sweden, tel: +46-36-146500, declares under sole responsibility that the demolition robot **Husqvarna DXR140** dating from 2016 serial numbers and onwards (the year is clearly stated on the rating plate, followed by the serial number), complies with the requirements of the COUNCILíS DIRECTIVE:

- of April 16, 2014 relating to ”Radio Equipment” **2014/53/EU**.
- of May 17, 2006 ”relating to machinery” **2006/42/EC**.
- of February 26, 2014 ”relating to electromagnetic compatibility” **2014/30/EU**.
- of February 26, 2014 ”relating to electrical equipment designed for use within certain voltage limits” **2014/35/EU**.
- of May 8, 2000 ”relating to the noise emissions in the environment” **2000/14/EC**.
- of June 8, 2011 on the ”restriction of use of certain hazardous substances” **2011/65/EU**.

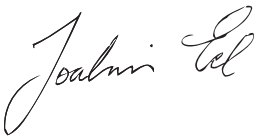
For information relating to noise emissions, see the Technical data chapter.

The following standards have been applied: **EN ISO 12100:2010, EN 61000-6-2:2005, EN 61000-6-4:2007,ETSI EN 301 489-17 V2.1.1:2009, ETSI EN 301 489-1 V1.8.1:2008**

Notified body: 0404, SMP Svensk Maskinprovning AB, Box 7035, SE-750 07 Uppsala, Sweden, has performed voluntary type examination in accordance with the machinery directive (2006/42/EC) on behalf of Husqvarna AB. The certificate has the number: SEC/15/2442

In addition, SMP, Svensk Maskinprovning AB, Box 7035, SE-750 07 Uppsala, Sweden, has certified conformity with annex V of the Council's Directive of May 8, 2000 ”relating to the noise emissions in the environment” 2000/14/EC. The certificate has the number: 01/000/002.

Gothenburg, 15 June 2016



Joakim Ed

Global R & D Director

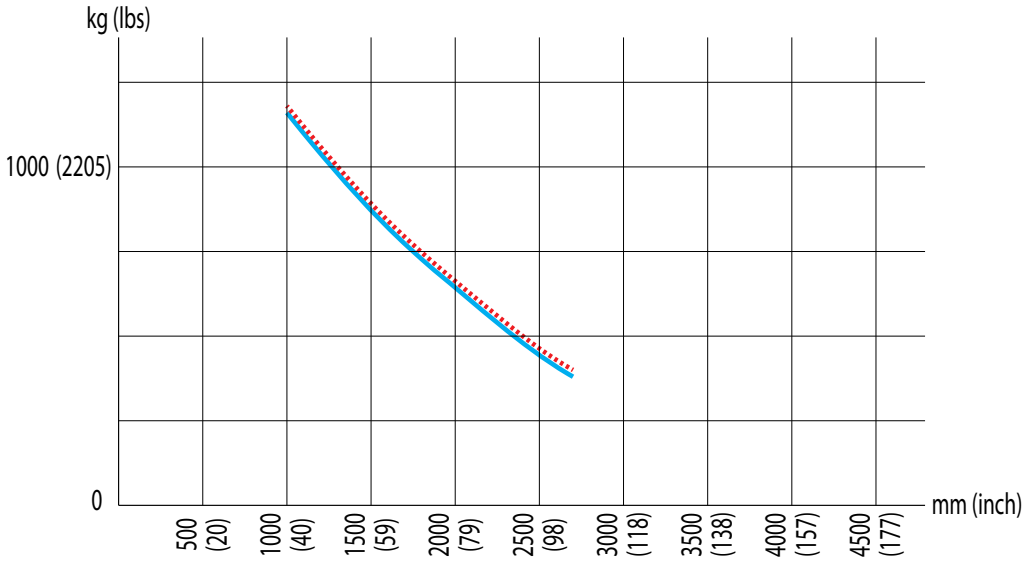
Construction Equipment Husqvarna AB

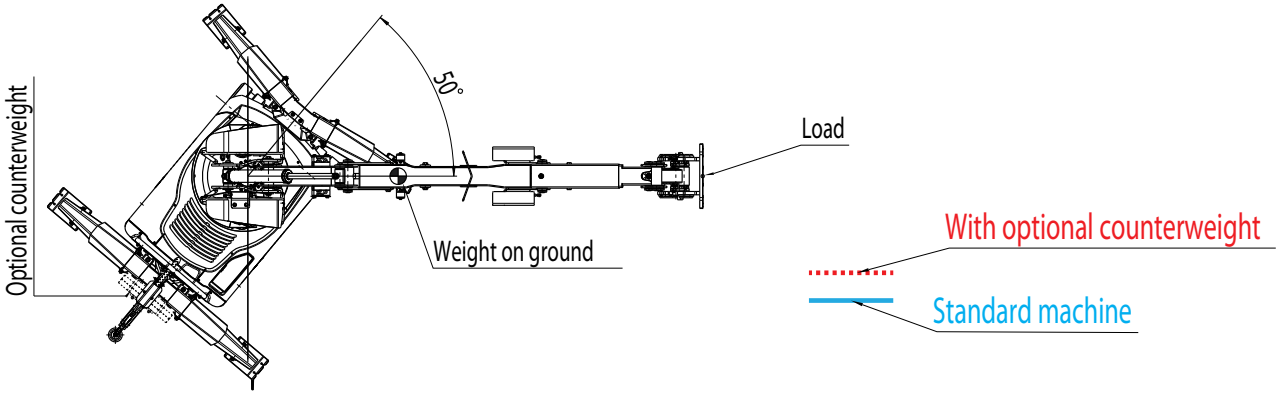
(Authorized representative for Husqvarna AB and responsible for technical documentation.)

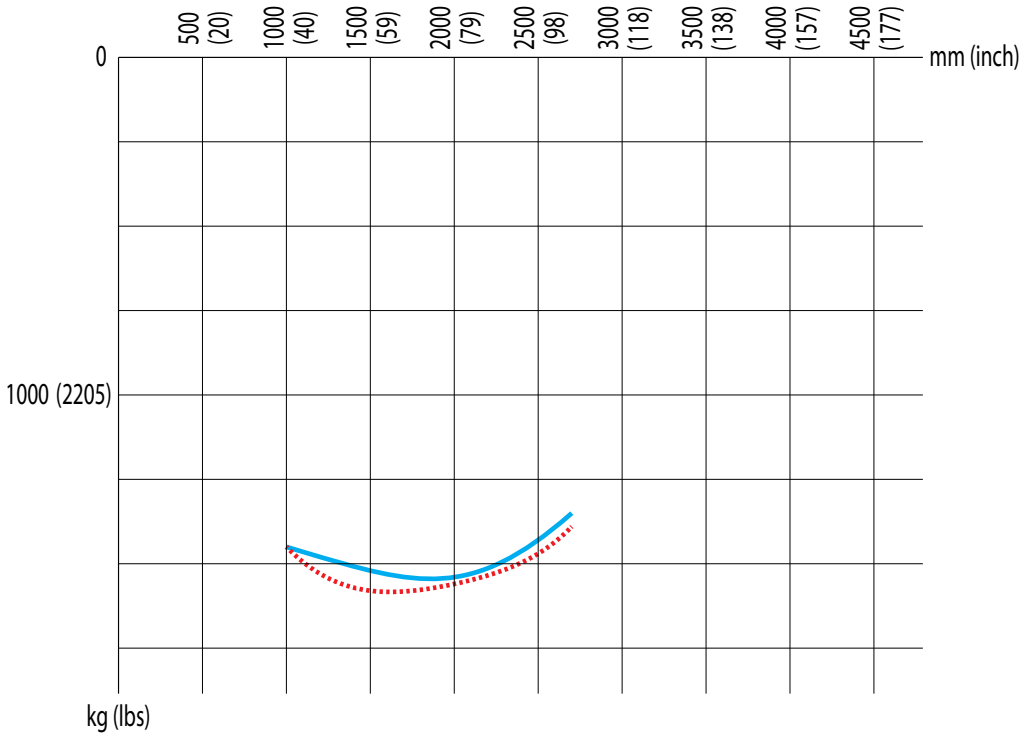
LOAD AND WEIGHT ON GROUND DIAGRAMS DXR140

3. On outriggers – diagonal DXR140 - weight on ground will appear on single outrigger.

Load





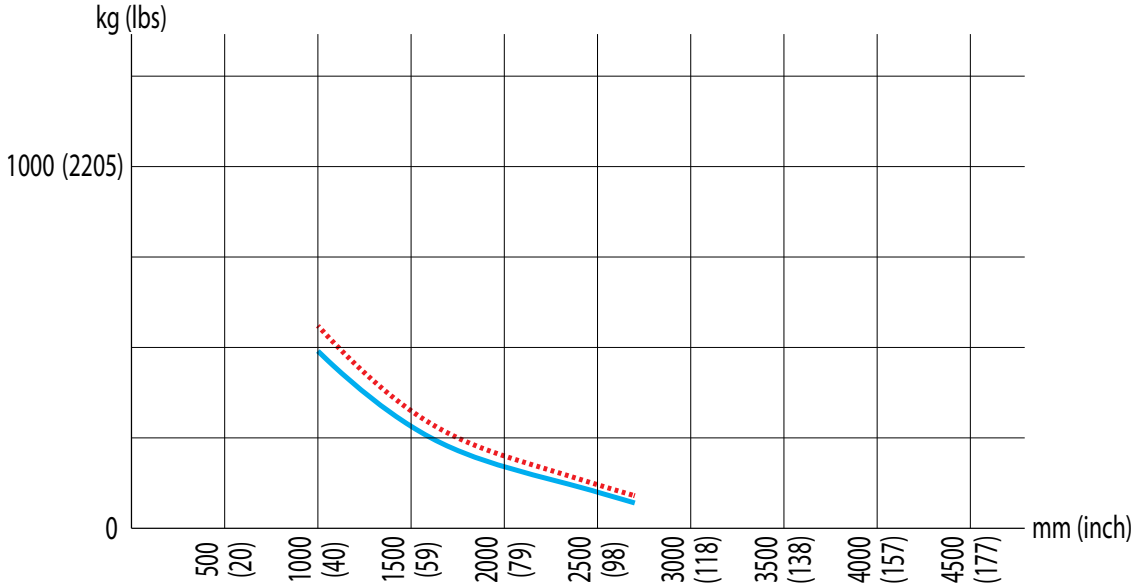


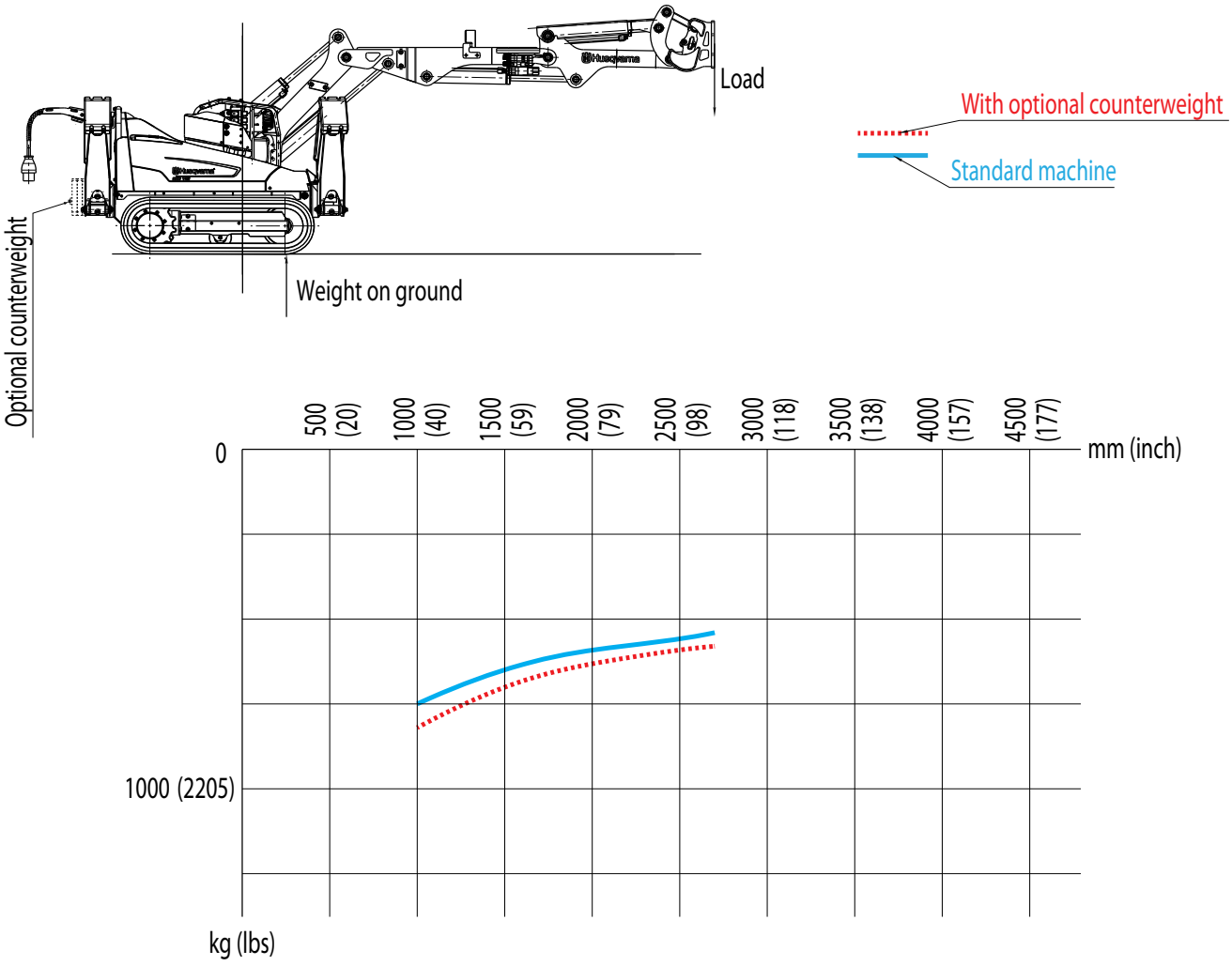
Weight on ground

LOAD AND WEIGHT ON GROUND DIAGRAMS DXR140

4. On tracks - forward DXR140 - weight on ground will appear on front end of both tracks.

Load



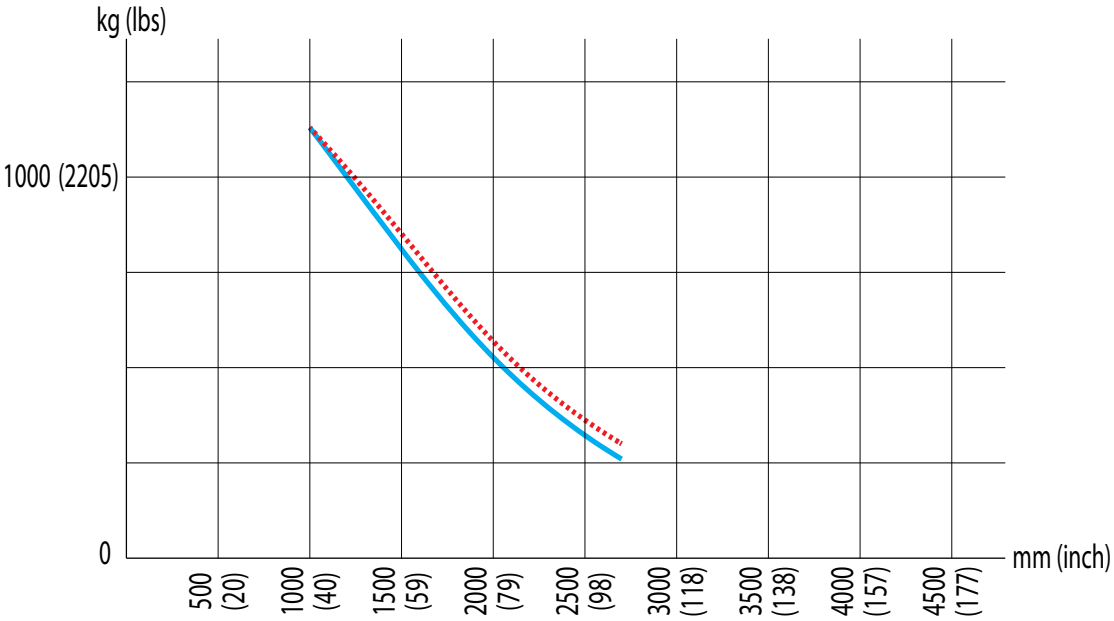


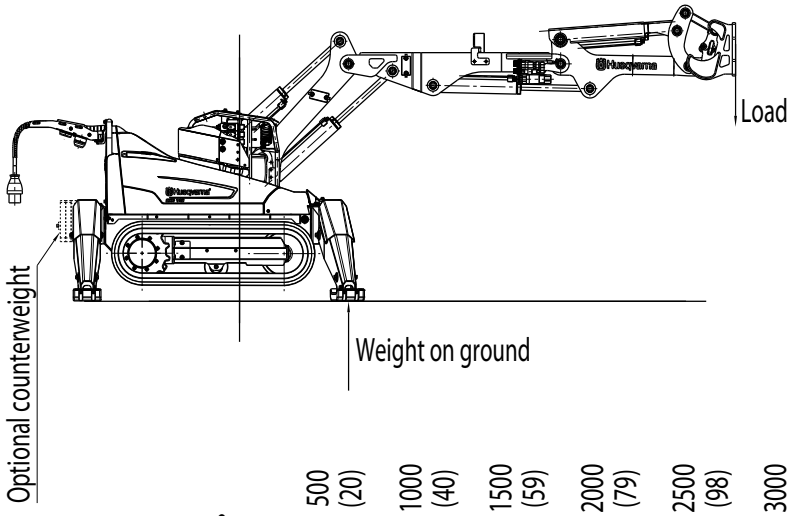
Weight on ground

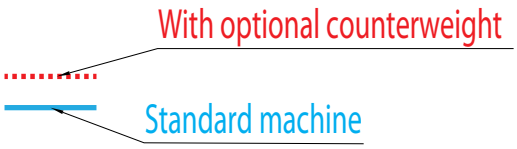
LOAD AND WEIGHT ON GROUND DIAGRAMS DXR140

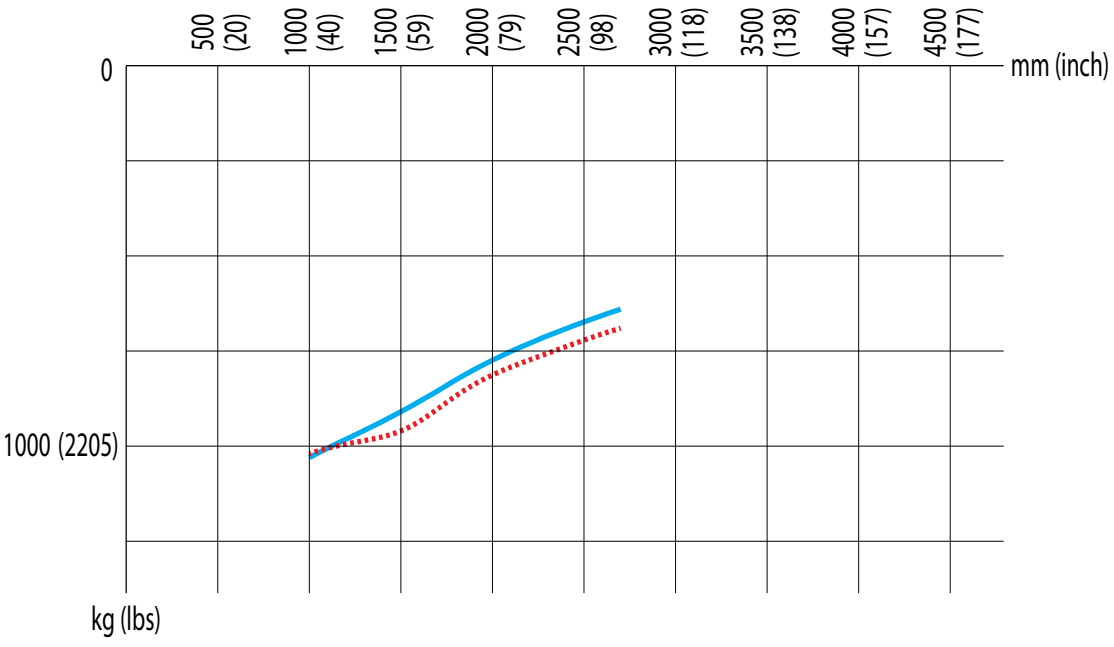
1. On outriggers – forward DXR140 - weight on ground will appear on two outriggers.

Load





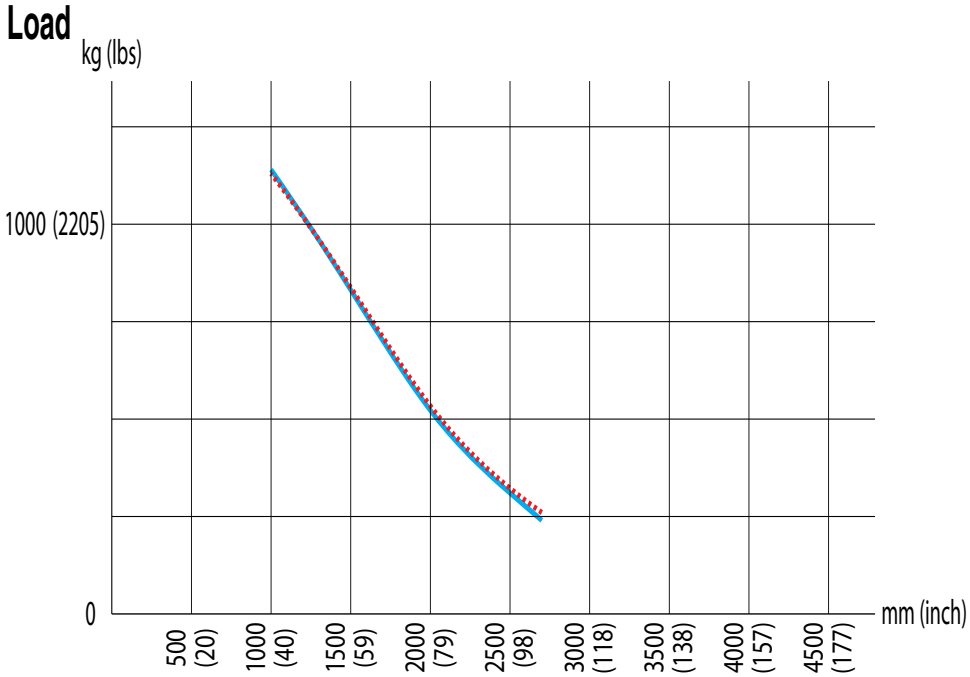


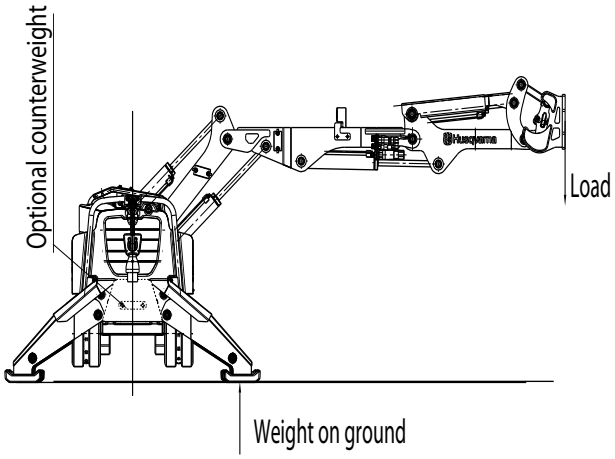


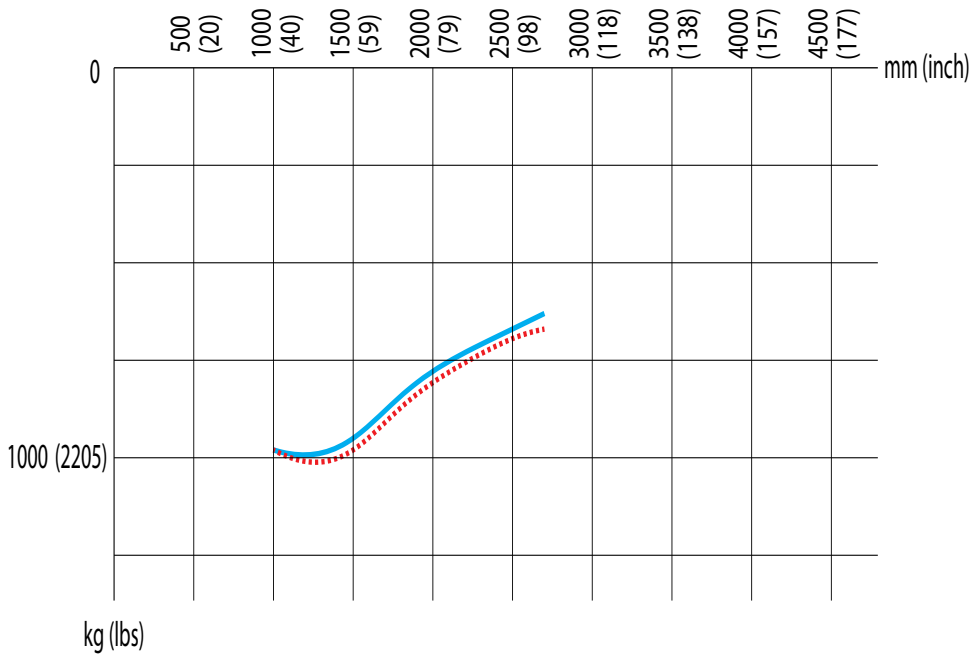
Weight on ground

LOAD AND WEIGHT ON GROUND DIAGRAMS DXR140

2. On outriggers – side DXR140 - weight on ground will appear on two outriggers.







Weight on ground

Notification Summary

Read Only

To make changes to this Notification please click the 'Amend' button below.

DEMOLITION: Notification of Intent to do Demolition Work	Licence Details	
Reference Number: 941R-00328593-01	**Licence Name:** Noble Works Australia Pty Ltd	
Status: Lodged Pending	**Licence No:** 212245	**Class(es):** DE2
Date Lodged: 24/11/2021 04:23:35	**Expiry Date:** 6/09/2023	
Start Date of Work: 29/11/2021	**State Issued:** NSW	
Finish Date of Work: 28/02/2022	**Registered Business Name:** Noble Works Australia Pty Ltd	
	A.B.N: 52133963032	
	Daytime Contact Number: 0422200482	

Amend Withdraw

Tasks:	Details:	Action Required:
Applicant Details	Noble Works Australia Pty Ltd	Done
Work Site Owner	Hindmarsh Construction Australia Pty Ltd	Done
Site Details	126A Kareena Rd, Caringbah, NSW 2229	Done
Supervisor	Multiple Supervisors Added	Done
Type Of Work - Demolition	A selection has been made - see details	Done
Safe Work Method Statements	Details have been entered - see details	Done
Declaration	ARRON KNOX, MANAGER	Done

Comments(0) Attachments(0) Notification Output(0)

RESTRICTED DEMOLITION LICENCE

Issued under the *Occupational Health and Safety Regulation 2001(NSW).* This licence is not transferable.

Licence: AD212245

Licence period: From: 07/09/2015 To: 06/09/2023

Licence holder name: Noble Works Australia Pty Ltd

ABN: 52 133 963 032

ACN: 133 963 032

Address: 47 George Street
CLYDE NSW 2142

Description of the work that can be undertaken under this licence

Demolition work excluding

- Demolition of chemical installations
- Demolition above 15 metres in height
- Demolition of pre and post tensioned structures
- Demolition using a tower crane on site
- Demolition involving floor propping
- Demolition using explosives
- Demolition using a mobile crane with a rated capacity greater than 100 tonnes

Licence holder obligations

A nominated supervisor must be present at the site at all times when licenced demolition work is carried out.

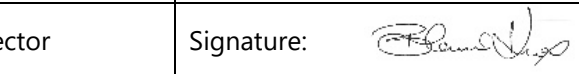
This licence must be displayed on site at all times.

Demolition of a structure or part of a structure that is loadbearing or otherwise related to the physical integrity of the structure or that is at least six metres in height must be notified to SafeWork NSW at least five days prior to the work commencing.

The licence holder must notify SafeWork NSW in writing of any changes to the licence or supervisor details within 14 days.

SW08029 0318

SAFE WORK METHOD STATEMENT FOR HIGH RISK CONSTRUCTION WORK

SWMS Title:	Stage 1 - Demolition Works		Revision Date:	10/11/2021	Revision No:	2	Date submitted: to PC:	10/11/2021
Project:	Sutherland Hospital		Workplace Location (if applicable):		Kingsway & Kareena Rd, Caringbah NSW 2229		
PCBU Name and ABN:	Noble Works Australia Pty Ltd 52 133 963 032		Principal Contractor Name and ABN:		Hindmarsh Construction Australia Pty Ltd 15 126 578 176		
Address and Phone:	47 George St, Clyde, NSW 1300 705 782		ABN, Address and Phone:		Suite 2, Level 27, 100 Miller St, North Sydney, 2060 (02) 9274 1100		
Works supervisor:	Robert Healy		Contact Number:		0406 636 752		
Scope of work: (Provide a brief description of work activity/ task)			Demolition of Buildings by hand and with Plant				
SWMS Reviewed by:	Name: Arron Knox	Position: Manager	Signature:		Contact No: 0400 371 225	Date	10/11/2021
SWMS implemented and monitored by:	Name: Blain Knox	Position: Director	Signature: 		Contact No: 0422 200 482	Date	10/11/2021

Provide details on how the SWMS will be implemented and monitored	☑ Task observations	☐ Compliance inspections	☐ Audits	☑ Toolbox talks / Prestarts and consultation with workers.

Select the specific 'High Risk Construction Work' that will be undertaken.					
☑ Risk of a person falling more than 2 metres	☐ Work on a telecommunication tower	☐ Demolition of load-bearing structure	☑ Work on or near chemical, fuel or refrigerant lines	☑ Work on or near energised electrical installations or services	☐ Work in an area that may have a contaminated or flammable atmosphere
☐ Likely to involve disturbing asbestos	☐ Temporary load-bearing support for structural alterations or repairs	☐ Work in or near a confined space	☐ Tilt-up or precast concrete elements	☑ Work on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians	☑ Work in an area with movement of powered mobile plant
☐ Work in or near a shaft or trench deeper than 1.5 m or a tunnel	☐ Use of explosives	☑ Work on or near pressurised gas mains or piping	☐ Work in areas with artificial extremes of temperature	☐ Work in or near water or other liquid that involves a risk of drowning	☐ Diving work
☑ Falling Objects more than 3 metres					

SAFE WORK METHOD STATEMENT FOR HIGH RISK CONSTRUCTION WORK

Project Specific High Risk Construction Work	Work Activities/ Tasks Identify the work activities/ tasks in sequence specific to the High Risk Construction Work.	Potential Hazards and Risks Hazard = Source of harm Risk = Likelihood and consequence	Hazard and Risk Control Measures Describe what will be done to control the hazard and high risk. What will you do to make the activity as safe as possible? Start by trying to eliminate the risk, and then move down the hierarchy of controls
Personal Protective Equipment (PPE)	All Works	Injury Death	- The Minimum PPE requirement onsite at all times is Hard Hat, Hi-Viz and Steel Cap Boots. - Additional PPE including dust mask, ear protection, eye protection and gloves is required when undertaking specific work tasks requiring the operation of hand/power tools or working in the area with hand/power tools and machinery. Working at heights requires fall protection.
Work in an area with the movement of powered mobile plant	**Demolition Works** - Demolition of Porte Cochere with excavator and EWP - Demolition of concrete areas with DXR Demolition Robot - Removal of trees **Excavation Works** - Hammer up and load out asphalt carpark - Excavate carpark - Level out dirt mound	**Hazards** - Crush between plant and slab underside - Plant roll over - Operator error - Plant malfunction **Risks** - Struck by plant - Crushed by plant	- Toolbox talk / Pre start to communicate hazards - Radios to be used as a communication tool by spotters, pickers, operators and labourers to aid in prevention of dangerous incidence with plant. **Environment** - Barriers installed to section off area where mobile plant is to be used **Plant** - All plant fitted with safety devices as per plant risk assessments **Operator** - Operate plant as per Operator's manual - Operator to stay aware of overhead structures and hanging material - Plant to be inducted to site with documentation (risk assessment etc.) - Complete Daily visual checks as per manufacturers operating manual and record in daily log book - Trained and ticketed operator on plant only **Ground workers** - Spotter to direct movement of plant in areas where vision is compromised - Competent spotter assisting operator where unsure of services **Machine Refuelling Method** - Refuel well away from work areas where possible to avoid risk of spilling fuel in places where hot works may take place. - Ensure the refuelling point is suitable and well-ventilated. - Ensure the machine is shut off. - Allow time for machinery to cool down if possible.

			- Ensure you are using the correct fuel - Make sure all ignition sources are removed while refuelling, and ensure that no smoking will occur nearby while refuelling - Check the safety data sheet and labelling of fuel / oil canisters and ensure required instructions are followed or are able to be followed. - Confirm that all fittings, hoses, terminals and tanks are in good condition and free of leaks. - Avoid spilling or splashing fuel (for example, use fuel containers with a flexi pourer) - If decanting: • use a suitable pump (never decant by mouth) • only pour in to a container on the ground or on a solid surface • wear eye protection Thoroughly wash your hands and face after refuelling.
Working around existing/temp electrical services	All works	- Electrocution - Electric shock	Toolbox talk / Pre start to communicate hazards. - Liaise with Primary Contractor regarding isolation and disconnection status - Liaise with Primary Contractor regarding location of underground services - Electrical services must be isolated or identified (tagged). All temporary power/lighting to be identified (tagged) - All services are to be treated as "LIVE" where uncertain - No services to be cut, removed or touched unless clearly identified as isolated/disconnected - Treat all untraceable and unidentified cables as live and inform site supervisor/primary contractor - Do not touch cables marked "LIVE" - When working around cables marked as "LIVE" suitable controls such as shielding, moving and securing cables out of work area or moving work area to be implemented before work commences. - Work is to cease immediately if any unidentified service is uncovered/discovered
Work on or near pressurised gas mains or piping.	All works	- Gas Explosion - Gas disruption - Inhalation of gas	Toolbox talk / Pre start to communicate hazards. - Liaise with Primary Contractor regarding isolation and disconnection status - Liaise with Primary Contractor regarding location of underground services

			- Electrical services must be isolated or identified (tagged). All temporary power/lighting to be identified (tagged) - All services are to be treated as "LIVE" where uncertain - No services to be cut, removed or touched unless clearly identified as isolated/disconnected - Treat all untraceable and unidentified cables as live and inform site supervisor/primary contractor - Do not touch cables marked "LIVE" - When working around cables marked as "LIVE" suitable controls such as shielding, moving and securing cables out of work area or moving work area to be implemented before work commences. - Work is to cease immediately if any unidentified service is uncovered/discovered.If gas lines are disrupted, work to cease immediately and area to be evacuated
Work on or near chemical, fuel or refrigerant lines	All works	- Explosion - Fire - Disruption	- Toolbox talk / Pre start to communicate hazards - Liaise with Primary Contractor regarding isolation and disconnection status - Liaise with Primary Contractor regarding location of underground services - Chemical/fuel/refrigerant services must be isolated or identified (tagged). All temporary power/lighting to be identified (tagged) - All services are to be treated as "LIVE" where uncertain - No services to be cut, removed or touched unless clearly identified as isolated/disconnected - Treat all untraceable and unidentified lines as live and inform site supervisor/primary contractor - Care shall be taken when undertaking Work on or near Pressurised Gas Distribution Mains or Piping that contain natural gas so as to reduce the risk of damage and consequently a leakage of natural gas. - If gas lines are disrupted, work to cease immediately and area to be evacuated

Risk of a person falling more than 2 metres	- Demolition of Porte Cochere with excavator and EWP	- Fall from heights - Injury - Death	Toolbox talk / Pre start to communicate hazards and daily methodologies including any changes to site conditions that may alter demolition process. - No work is to be carried out on a live edge without a handrail or approved fall prevention - All workers on roofs to hold Safely Working at Heights ticket **Scaffold:** - Snappy Scaffs and mobile scaffold to be erected as per manufactures instructions and by a ticketed person - Inspect Scaffold for damage/defects before erecting - Workers are to remain within scaffold handrails at all times - Do not climb on handrails - Access Mobile scaffolds via access ladder only - Workers are to remain within scaffold handrails at all times **Ladders:** - Ladders must meet Australian Standards - Inspect ladder for damage/defects before usage - Always set ladders up on a flat stable surface. Consider leg levers, anti-slip gutter guards and stabilisers when appropriate. - Always maintain three points of contact with ladder - Never lean or reach away from ladder when using - Only carry small items up or down a ladder to allow you to maintain three points of contact - Never exceed the working load limit of the ladder, remember the weight of tools/materials - If you're using an extension ladder, secure it at the top, bottom or both. If this isn't possible then have someone hold the ladder while in use. If you're using an A-frame ladder, make sure it's fully open and locked. - Extension ladders should be angled at a ratio of 1:4. That is, position the base of the ladder 1 meter away from the structure for every 4 meters of height. - Do not climb past the second-top rung of a ladder, and never straddle the top of an A-frame ladder. When climbing down, face the ladder and climb to the bottom rung before stepping off **Safety Harness Fitting:**

			- Inspect the harness for damage/defects before use - Open all buckles on the harness - Grab harness by the back D-Ring, grab the left strap with your left hand and the right strap with your right hand and shake to allow and tangled straps to fall into place - Slip the straps over your shoulders so the back D-Ring is in the middle of the back between the shoulder blades. Make sure the D-Ring is large enough to accommodate the lanyard or self-retracting line. Proper positioning of the D-Ring is key to make sure the worker is suspended upright in case of fall. - Pull the end of one leg strap between the legs and secure to the opposite end. Repeat this step with the other leg. If the harness has a belt, connect it after the leg straps - Here are some of the common buckle styles: o Tongue buckles – pass the webbing though the buckle and insert the tongue through the grommet. o Parachute buckles - pass the webbing under the buckle, over the roller, and down between the roller and frame. Pull the end webbing to tighten. At least three inches of webbing must extend past the buckle. o Pass-style buckles - pass the male buckle through the female buckle and pull the free end of the webbing to tighten o Quick-connect buckles - insert the tab of the buckle into the receptor of the quick connect buckle until you hear a click - Connect the chest strap and position it in the mid-chest area, then tighten shoulder straps to make sure they don't fall off in the event of an accident. - After connecting all the buckles, adjust the straps so that the harness fits snug, but still allows a full range of movement. Test by sliding your hands under the webbing and make a fist. If you can pull the hand out too easily, the strap is a bit too loose. Pass excess webbing under the loop. - When selecting an anchor point consider the following: o The types of forces that the anchor point is required to withstand o The type of anchor points your lanyard can safely connect to o The type of work you are preparing to perform **Whilst working with harness:**

			- Make sure your harness fits properly - Always stay connected when using safety harness - Guard or cover all holes, this includes skylights or othjer openings on buildings - NEVER disconnect from the lifeline - NEVER work near unprotected openings in roofs or exposed skylights - NEVER use defective/damaged equipment **Elevated Work Platforms** - Determine whether use of EWP can be avoided ie: use of Scaffold. - Ensure separation of plant and people by use of barricades and cones. - Ensure EWP has an operator protective device/pressure sensing device to prevent crush injury. - Ensure alternative height access equipment is readily available and of suitable type to retrieve workers if the EWP being used cannot be safely lowered. - Edge protection/wheel stops (if required) must be in place (by others). - An approved safety harness with lanyard secured to the proper attachment bar should be worn while operating a boom lift. - Locate and identify any overhead hazards ie: Live Services (power, gas, water etc.) and ensure they are avoided at all times. - All materials, tools and equipment taken on the scissor lift shall be properly secured to prevent falling while operating. - Ensure EWP is listed on equipment register. - Workers EWP license to be given to Builder/Building Management at site induction, prior to working. - Equipment must be inducted & certificates provided verifying maintenance conducted & suitability for task. Electrical equipment to be tested & tagged. - Carry out a visual inspection of EWP prior to daily use. - Ensure person/s using EWP are licensed and daily log book is filled out - License to be always carried with operator when using EWP - Check for overhead electrical hazards. Treat all wiring as live until confirmed otherwise. Tempest supervisor to organise licenced electrician (Tempest subcontractor for mechanical cabling, subcontractor for other services) to identify, isolate and remove cables or identify and label them as live prior to works near them occurring. If cables are identified as remaining live suitable

			controls, such as shielding, moving and securing cables out of the way or moving works away from cables to be put in place before works proceed. - Check equipment for serviceability, including warning devices and emergency button release. - Inspect area prior to establishment. - Ensure correct EWP is chosen for work at hand ie: all terrain if require, wind velocity rating. - Protection of structural penetrations must be in place (by others). - Ensure area is well ventilated. - Check for obvious hazards in area; firm and level ground, overhead obstructions (live cables). - Ensure tools and equipment on EWP are properly secured. - Clean mud, grass etc. from boots to prevent slippage. - Loads are not to be carried on the hand rails unless they have been specifically designed for the purpose and approved by the manufacturer. - All personnel to be familiar with Rescue Plan prior to machinery use. - Assess climatic conditions prior to use, especially on high level floors. Do not operate in high wind or rain conditions. - Ensure maximum lifting heights and weights are not exceeded. - All guard rails/access doors shall be closed before lifting commences. - No person shall be permitted to get on or off the EWP when in a raised position. - Never climb on the outside of the scissor lift. - Never drop tools, equipment or materials from the EWP. - The EWP shall be used as an access platform only. Materials, equipment and heavy tools should not be carried. - Do not position ladders, steps or similar access items on the platform to provide additional reach. - Restore equipment to safe condition following use. - Ensure all removable operating devices (keys, control pads) are stored separately. - PPE to be worn at all times.

Falling Objects more than 3 metres	- Demolition of Porte Cochere with excavator and EWP	Fall from heights Injury Death	Toolbox talk / Pre start to communicate hazards - Hard Hats to be worn at all times - Ensure all tools and materials are safely stored - Workers to be deemed competent in the safe lifting/slinging of materials - Exclusion zone to be in place prior to works commencing Workers are not to work above each other on the scaffold
Work in or adjacent to a road, railway, shipping lane or other traffic corridor that is in use by traffic other than pedestrians.	- Loading and unloading of machinery - Loading out of demolished and excavated material	Workers being struck by vehicles in adjacent live road or traffic corridor. Vehicles in adjacent road or traffic corridor being struck by falling material or machines	- No loading or unloading will be undertaken outside designated loading zone. - No loading or unloading of trucks unless trained road traffic controller(s) are in place to direct vehicle traffic and pedestrians during loading and unloading works. - All material being loaded onto trucks will be strapped; no free loads will be transported or loaded. - Only workers directly involved in loading and unloading will be allowed in the loading and unloading zone. - Prior to releasing straps driver to ensure load has not shifted during transport - No loading of machines to be undertaken during high traffic times - Have spotter during loading/unloading of machines and materials

		-	-
		-	-

Noble Works Australia Pty Ltd
p: 1300 705 782
e: info@nobleworks.com.au

ABN: 52 133 963 032
Licence No: AD212245

Emergency Management

- Adequate numbers of first aid trained staff are on site
- First aiders are trained and competent in managing injuries associated with demolition until emergency services arrive
- All rescue equipment is in good condition, available for use and in close proximity to the work site.
- Workers have access to:
  - First aid kit/supplies
  - M/SDS
  - Communication devices (check mobile phones will have service)
  - Suitable fire protection equipment

Emergency evacuation assembly point: TBA	
Police / Fire / Ambulance - 000	***If mobile phone is out of range dial - 112***
First Aid Officer: Robert Healy	Contact Number: 0406 636 752
Qualification: First Aid, Basic Emergency Life Support, Cardiopulmonary Resucitation	Expiry date: 21 May 2023
☒ First Aid Kit	☒ Falls Rescue Equipment *(list items)* • Harness & Static Line
☒ Communication System	
☒ Fire Extinguisher	

Key personnel (24-hour contact)

Name/s	Email	Contact number
Blain Knox		**0422 200 482**
Robert Healy		**0406 636 752**
Arron Knox		**0400 371 225**

Nearby facilities/neighbours

Facilities/neighbours	Contact name/s	Email	Contact number
	TBA	TBA	TBA
	TBA	TBA	TBA
	TBA	TBA	TBA

Have fire and emergency authorities been notified of	☐ commencement date	☐ type of work	☐ likely hazards

SAFE WORK METHOD STATEMENT FOR HIGH RISK CONSTRUCTION WORK

RECORD OF CONSULTATION AND INDUCTION INTO SAFE WORK METHODS

By signing this record, I acknowledge that consultation has been provided and I have been given the opportunity to contribute to the identification of safety hazards associated with this work, and to the formulation of work methods that will enable the work activity to be undertaken safely. I also acknowledge I have been instructed into the safe work methods, and understand them. I have the appropriate competency, qualification, and inductions required to undertake the work detailed in this SWMS.

Ref #	First Name	Surname	Job Description Trade/Classification	Certificate, Licence – Number & Expiry Date	Employed by	SWMS Rev #	Signature	Date of Induction
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								

1. The SWMS must be prepared for all specific to Project High Risk Construction Work, including the project environment considering the specific work activities, work-crew, plant, equipment and materials.
2. The workers and supervisors involved in carrying out the work activity must be consulted in identifying the safety hazards and risks to assist in determining the safe work methods.
3. Any significant change to the work process or sequence or to the type of plant or materials used is to trigger a review of this SWMS as is any LTI/MTI, Near Miss, Safety breach or Notice served by a Regulatory.
4. Changes are not to be made to the safe work methods prescribed in this SWMS without first consulting with the specific work team. Changes are to be documented, reviewed and approved before instructing the workers involved into the changes.
5. PCBU's HRCW SWMS will be reviewed against the specific project Hazard and Risk Register
6. This HRCW SWMS is to be reviewed and monitored to evaluate the effectiveness of controls as detailed in the specific project HSE Plan (i.e. periodic)
7. The HRCW SWMS must be written so that it is comprehensible to those who read it (understood by the workgroup /demographic)
   Note: Emergency procedures may be required to undertake High Risk Construction Work. When applicable workers need to be inducted and trained into the specific Emergency procedures.

Noble Works Australia Pty Ltd
Hazardous chemical register

IF A SUBSTANCE HAS A DIAMOND LABEL IT MUST BE INCLUDED IN THIS REGISTER

This Hazardous chemical register is a list of all hazardous chemicals used, handled, or stored at by Noble Works Australia Pty Ltd at either our storage yard or to be used on site. A current safety data sheet (SDS) is available workers for all substances listed below. An SDS will tell you how to use and manage each hazardous chemical safely. If a new potentially hazardous chemical is to be used by an employee, the supplier should provide a SDS on request and the office must be notified ASAP to amend this document.
Note: Chemicals not classified as hazardous chemicals do not require SDSs and do not need be included in this register.

Revision date:	**November 2021**	**Updated by:**	**Lucas Kowe**

Date on & off site	**Product Name**	**Type of Application**	**Emergency Phone Number**	**SDS issue date** (must be <5 years)	**Quantity on Site**	**Risk Class** (See Section 5.6 of this plan)
	Diesel *BP*	Fuel	1800 638 556	07/04/2017	2 x 20L	Cat 4 Flammable Liquid, Cat 2 Corrosive, Irritant, Acute Toxicity
	Unleaded Petrol *BP*	Fuel	1800 638 556	01/09/2016	2 x 20L	Cat 1 Flammable Liquid, Cat 2 Corrosive, Irritant
	Oxygen/Acetylene *Airliquide*	Welding	1800 812 588	20/12/2016	2 x Size D Cylinder	Cat 1 Oxidising Gas; Compressed Gas
	Hydrochloric Acid *Bondall*	General	1800 810 123	01/05/2016	2 x 5L (Dilute)	Cat 1 Corrosive, Irritant
	Methylated Spirits *Diggers*	General	13 11 26	20/02/2017	2 x 4L	Cat 2 Flammable Liquid, Irritant
	Acetone *Diggers*	General	13 11 26	22/05/2017	2 x 4L	Cat 2 Flammable Liquid, Irritant
	Mineral Turpentine *Diggers*	General	13 11 26	18/05/2017	2 x 4L	Cat 3 Flammable Liquid, Irritant, Acute Toxicity, Aquatic Toxicity
	Cement *Boral*	General	1800 555 477	03/01/2020	Varies	Cat 2 Corrosive, Irritant
	WD-40	General	1800 024 973	29/09/2019	< 4L	Class 3 Flammable Liquid, Poison, Irritant, Compressed Gas

SAFETY DATA SHEET

Automotive Diesel Fuel

Section 1. Identification

GHS product identifier Automotive Diesel Fuel

Other means of identification G10, BP 10 ppm diesel fuel,Ultra Low Sulphur diesel Fuel, Automotive Diesel Fuel AD 20 , AD40, ALPINE DIESEL, Biodiesel B5

Product code 0000002718

SDS no. 0000002718

Historic SDS no. AD0K1

Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/ mixture Fuel for compression ignition diesel engines.

Manufacturer

Supplier

BP Australia Pty Ltd
Level 17, 717 Bourke Street
Docklands, Victoria 3008
ABN 53 004 085 616

www.bp.com.au

Technical Helpline Number: 1300 139 700

EMERGENCY TELEPHONE NUMBER 1800 638 556

Section 2. Hazard(s) identification

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION/IRRITATION - Category 2
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bone marrow, liver and thymus) - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word DANGER

Hazard statements

H227 - Combustible liquid.
H332 - Harmful if inhaled.
H315 - Causes skin irritation.
H351 - Suspected of causing cancer.
H304 - May be fatal if swallowed and enters airways.
H373 - May cause damage to organs through prolonged or repeated exposure. (bone marrow, liver, thymus)

Precautionary statements

General

P103 - Read label before use.
P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

Section 2. Hazard(s) identification

Prevention

P201 - Obtain special instructions before use.
P260 - Do not breathe vapour.
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
P273 -Avoid release to the environment.

Response

P314 - Get medical attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical attention.
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
P302 + P352 + P362-2 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse.
P332 + P313 - If skin irritation occurs: Get medical attention.

Storage

P405 - Store locked up.
P403 - Store in a well-ventilated place.
P235 - Keep cool.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.

Other hazards which do not result in classification

This material may contain significant quantities of polycyclic aromatic hydrocarbons, some of which have been shown by experimental studies to induce skin cancer.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition and ingredient information

Substance/mixture Mixture

May contain Fatty Acid Methyl Esters (FAME). May also contain small quantities of proprietary performance additives. Contains small quantities of polycyclic aromatic hydrocarbons (PAHs).

Ingredient name	% (w/w)	CAS number
Fuels, diesel	> 95	68334-30-5
Alkanes, C10-20-branched and linear	0 - 20	928771-01-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Inhalation

If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Section 4. First aid measures

Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Clean shoes thoroughly before reuse. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Get medical attention.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis.
Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments

No specific treatment.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Combustible liquid. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

Combustion products may include the following:
carbon dioxide
carbon monoxide
other hazardous substances.

Section 5. Firefighting measures

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Hazchem code

3z

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Avoid contact of spilt material and runoff with soil and surface waterways. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Do not breathe vapour or mist. Avoid exposure -

Section 7. Handling and storage

obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

As a precaution, tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Fuels, diesel	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (measured as total hydrocarbons) 8 hours. Issued/Revised: 1/2007 Form: Inhalable fraction and vapor

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is

Section 8. Exposure controls and personal protection

important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves.

Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Recommended: Nitrile gloves.

Skin protection

Use of protective clothing is good industrial practice.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: overall

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory

Section 8. Exposure controls and personal protection

equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Recommended: If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist.

Refer to standards: Respiratory protection:AS/NZS 1715 and AS/NZS 1716
Gloves:AS/NZS 2161.1
Eye protection:AS/NZS 1336 and AS/NZS 1337

Section 9. Physical and chemical properties

Appearance

Physical state Liquid.

Colour Water white to straw including fluorescent green, blue or yellow.

Odour Mild

Odour threshold Not available.

pH Not available.

Melting point Not available.

Boiling point 180 to 380°C (356 to 716°F)

Flash point Closed cup: >61.5°C (>142.7°F) [Pensky-Martens.]

Evaporation rate Not available.

Flammability (solid, gas) Not applicable. Based on - Physical state

Lower and upper explosive (flammable) limits Lower: 0.5%
Upper: 7.5%

Vapour pressure 0.1 kPa (0.755 mm Hg)

Vapour density Not available.

Relative density 0.83

Density 820 to 850 kg/m³ (0.82 to 0.85 g/cm³) at 15°C

Solubility Not available.

Partition coefficient: n-octanol/water Not available.

Auto-ignition temperature 240°C (464°F)

Decomposition temperature Not available.

Viscosity Kinematic: 2 to 4.5 mm^2/s (2 to 4.5 cSt) at 40°C

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

Incompatible materials Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	LC50 Inhalation Dusts and mists	Rat	4.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Oral	Rat	17900 mg/kg	-
	LD50 Oral	Rat	7600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Fuels, diesel	Skin - Irritation	Rabbit	-	-	-
	Skin - Irritation	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-

Skin Causes skin irritation.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Fuels, diesel	skin	Guinea pig	Not sensitising
	skin	Guinea pig	Not sensitising

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Fuels, diesel	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Positive
	Equivalent to OECD 476	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative
	not guideline	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative

Conclusion/Summary Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	Positive - Dermal - Unspecified	Mouse	-	2 years

Conclusion/Summary Suspected of causing cancer.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Fuels, diesel	-	-	Negative	Rat	Dermal	20 days
	-	-	Negative	Rat	Dermal	10 days
	-	-	Negative	Rat	Dermal	10 days

Conclusion/Summary Development: Not classified. Based on available data, the classification criteria are not met.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Fuels, diesel	Category 2	Not determined	bone marrow, liver and thymus

Aspiration hazard

Name	Result
Fuels, diesel	ASPIRATION HAZARD - Category 1
Alkanes, C10-20-branched and linear	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Inhalation Harmful if inhaled.

Skin contact Causes skin irritation.

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact Adverse symptoms may include the following:
irritation
redness

Ingestion Adverse symptoms may include the following:
nausea or vomiting

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eye contact Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Inhalation Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Skin contact As with all such products containing potentially harmful levels of polycyclic aromatic hydrocarbons, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

General May cause damage to organs through prolonged or repeated exposure. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.

Section 11. Toxicological information

Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	1.895 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Fuels, diesel	EL50 >1000 mg/l Nominal Fresh water	Micro-organism	40 hours
	NOELR 3.217 mg/l Nominal Fresh water	Micro-organism	40 hours
	Acute EL50 22 mg/l Nominal Fresh water	Algae	72 hours
	Acute EL50 210 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute EL50 68 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute ErL50 78 mg/l Nominal Fresh water	Algae	72 hours
	Acute LL50 65 mg/l Nominal Fresh water	Fish	96 hours
	Acute LL50 21 mg/l Nominal Fresh water	Fish	96 hours
	Acute NOELR 10 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 1 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 46 mg/l Nominal Fresh water	Daphnia	48 hours
	Chronic NOEL 0.083 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 0.2 mg/l Nominal Fresh water	Daphnia	21 days

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Partially biodegradable.

Product/ingredient name	Test	Result	Dose	Inoculum
Fuels, diesel	OECD 301 F	60 % - Readily - 28 days	30 mg/l	-
	OECD 301 F	57.5 % - Not readily - 28 days	25 mg/l	-
	Equivalent to EPA OTS 796. 3100	35 % - Not readily - 28 days	5 mg/l	-

Conclusion/Summary Non-persistent per IMO criteria

Section 12. Ecological information

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

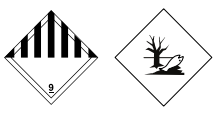
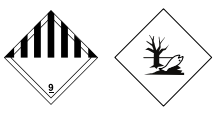
Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Special Precautions for Landfill or Incineration Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuels, diesel)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuels, diesel)
Transport hazard class(es)	-	9 	9 
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.

Section 14. Transport information

Additional information	**Remarks** Combustible liquid Class C1 (AS 1940). **Hazchem code** 3Z **Initial emergency response guide** 47	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Emergency schedules (EmS)** F-A, S-F	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user Not available.

Transport in bulk according to Annex II of Marpol and the IBC Code

Proper shipping name MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gas oils, including ship's bunkers

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not scheduled

Consumer products - This product is exempt per Appendix A of the SUSMP.
Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International lists

National inventory

REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.
Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	Not determined.
Japan inventory (ENCS)	Not determined.
Korea inventory (KECI)	Not determined.
Philippines inventory (PICCS)	Not determined.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.
United States inventory (TSCA 8b)	All components are listed or exempted.

Section 16. Any other relevant information

History

Date of printing	07/04/2016
Date of issue/Date of revision	07/04/2016
Date of previous issue	07/04/2016
Version	1
	Product Stewardship

Key to abbreviations

ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOHSC = National Occupational Health and Safety Commission
STEL = Short term exposure limit
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations
TWA = Time weighted average
VOC = Volatile Organic Compound
SADT = Self-Accelerating Decomposition Temperature
Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 4, H227	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Carc. 2, H351	Calculation method
STOT RE 2, H373 (bone marrow, liver and thymus)	Calculation method
Asp. Tox. 1, H304	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

BORAL CEMENT
Safety Data Sheet

www.boral.com.au

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **GENERAL PURPOSE CEMENT**

Synonym(s) BERRIMA SL • BLUE CIRCLE GENERAL PURPOSE CEMENT • BLUE CIRCLE HIGH EARLY STRENGTH CEMENT • BLUE CIRCLE OFF WHITE CEMENT • BLUE CIRCLE ® SOUTHERN WHITE CEMENT • GP CEMENT • HE CEMENT • HIGH EARLY STRENGTH CEMENT • KOORAGANG GP • MALDON GP • OFF WHITE CEMENT • SHRINKAGE LIMITED CEMENT • SL CEMENT • SOUTHERN WHITE CEMENT • TYPE GP • TYPE HE • TYPE SL • TYPE SR • WHITE CEMENT • ISO-MENT • HARDIES CEMENT • HES CEMENT • CRÈME CEMENT • BRIGHTONLITE • SUNLITE

1.2 Uses and uses advised against

Use(s) BINDING AGENT • CONCRETE • CONSTRUCTION • GROUT • INDUSTRIAL APPLICATIONS • MANUFACTURE OF CEMENTS • MASONRY • MORTAR • SOIL STABILISATION

1.3 Details of the supplier of the product

Supplier name **BORAL CONSTRUCTION MATERIALS LTD.**

Address Level 3, 40 Mount Street, Nth Sydney, NSW, 2060, AUSTRALIA

Telephone (02) 9220 6300

Email sds@rmt.com.au

Website http://www.boral.com.au

1.4 Emergency telephone number(s)

Emergency 1800 555 477 (8am – 5pm WST)

Emergency (A/H) 13 11 26 (Poisons Information Centre)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS classification(s)
Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 2
Serious Eye Damage / Eye Irritation: Category 2A
Skin Corrosion/Irritation: Category 2
Specific Target Organ Systemic Toxicity (Single Exposure): Category 3

2.2 Label elements

Signal word **WARNING**

Pictogram(s)

Hazard statement(s)

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Prevention statement(s)

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment is advised - see first aid instructions.
P362	Take off contaminated clothing and wash before re-use.

Storage statement(s)

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal statement(s)

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
CALCIUM OXIDE	1305-78-8	215-138-9	<3%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	<1%
HEXAVALENT CHROMIUM	18540-29-9	-	<0.002%
PORTLAND CEMENT	65997-15-1	266-043-4	>87.5%
FLY ASH	68131-74-8	268-627-4	<7.5%
GROUND BLAST FURNACE SLAG	65996-69-2	-	<7.5%
LIMESTONE (CALCIUM CARBONATE)	1317-65-3	215-279-6	<7.5%
GYPSUM	13397-24-5	603-783-2	<5%
MAGNESIUM OXIDE	1309-48-4	215-171-9	<3%

Ingredient Notes

1. Depending upon the source material, may contain varying amounts of respirable quartz (crystalline silica).
2. Chromium VI is a trace impurity in Portland Cement (< 20 ppm).

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

First aid facilities Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed

Irritating to the eyes, skin and respiratory system. Chronic over exposure to silica quartz dust may result in silicosis (lung disease). Principal symptoms of silicosis are coughing and breathlessness. Some individuals may exhibit an allergic response upon exposure to this product, possibly due to the trace amounts of chromium present. Crystalline silica and hexavalent chromium compounds are classified as carcinogenic to humans (IARC Group 1).

4.3 Immediate medical attention and special treatment needed

Treat as for moderate to strong alkali and symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic gases if strongly heated.

5.3 Advice for firefighters
No fire or explosion hazard exists.

5.4 Hazchem code
None allocated.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from moisture, incompatible substances and foodstuffs. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end use(s)
No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters
Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Calcium carbonate (Limestone, Marble, Whiting)	SWA (AUS)	--	10	--	--
Calcium oxide	SWA (AUS)	--	2	--	--
Chromium (VI) compounds (as Cr)	SWA (AUS)	--	0.05	--	--
Gypsum (Calcium sulphate)	SWA (AUS)	--	10	--	--
Magnesium oxide (fume)	SWA (AUS)	--	10	--	--
Portland Cement	SWA (AUS)	--	10	--	--
Quartz (respirable dust)	SWA (AUS)	--	0.1	--	--

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses or dust-proof goggles when handling material to avoid contact with eyes.
Hands	Wear PVC, rubber or cotton gloves when handling material to prevent skin contact.
Body	Wear long sleeved shirt and full-length trousers.
Respiratory	Where an inhalation risk exists wear a Class P1 (Particulate) respirator, dependent on a site specific risk assessment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	FINE WHITE TO DARK GREY POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	> 1200°C
Evaporation rate	NOT AVAILABLE
pH	11 to 13
Vapour density	NOT AVAILABLE
Specific gravity	2.9 to 3.2
Solubility (water)	< 10 g/L
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Density	1100 kg/m³ to 1500 kg/m³ (Bulk)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Hazardous polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), ethanol, acids (e.g. hydrofluoric acid) and interhalogens (e.g. chlorine trifluoride). Water contact may increase product temperature 2°C to 3°C.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	No known toxicity data is available for this product. Based on available data, the classification criteria are not met.
Skin	Irritating to the skin. Contact with powder or wetted form may result in irritation, rash and dermatitis.
Eye	Irritating to the eyes. Contact may result in irritation, lacrimation, pain, redness, corneal burns and possible permanent damage.
Sensitization	This product is not classified as a skin or respiratory sensitiser. However, some individuals may exhibit an allergic response upon exposure to cement, possibly due to trace amounts of chromium.
Mutagenicity	Insufficient data available to classify as a mutagen.
Carcinogenicity	This product contains crystalline silica which is classified as carcinogenic to humans (IARC Group 1). However, there is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis. Therefore, preventing the onset of silicosis will also reduce the cancer risk. Hexavalent chromium compounds are classified as carcinogenic to humans (IARC Group 1), however due to the trace amounts present, the criteria for classification is not met.
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT – single exposure	Irritating to the respiratory system. Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties.
STOT – repeated exposure	Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness. In the wet state, the likelihood of an inhalation hazard is reduced.
Aspiration	This product is a solid and aspiration hazards are not expected to occur.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

May be harmful to the aquatic environment due to the alkaline nature of the product. This product is non-toxic to aquatic organisms when present as a cured solid.

12.2 Persistence and degradability

Product is persistent and would have a low degradability.

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate.

12.4 Mobility in soil

A low mobility would be expected in a landfill situation.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	None Allocated	None Allocated	None Allocated
14.2 Proper Shipping Name	None Allocated	None Allocated	None Allocated
14.3 Transport hazard class	None Allocated	None Allocated	None Allocated
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards No information provided

14.6 Special precautions for user

Hazchem code None Allocated

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes

Xi	Irritant
Xn	Harmful

Risk phrases

R36/37/38	Irritating to eyes, respiratory system and skin.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases

S22	Do not breathe dust.
S24/25	Avoid contact with skin and eyes.
S36/37	Wear suitable protective clothing and gloves.

Inventory listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

16. OTHER INFORMATION

Additional information

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

Revision history

Revision	Description
2.0	Converted to GHS
1.0	Initial Release

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

The information presented herein is based on data considered to be accurate as of the date of preparation of this SDS. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorisation given or implied to practice any patented invention without a licence. In addition, no responsibility can be assume by the vendor for any damage or injury resulting from abnormal use, without a risk assessment for safe use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the products.

This Safety Data Sheet (SDS) applies only to the formulated material as supplied by Boral Cement. It does not apply where the formulation has been altered. In this case a new SDS may be required to reflect the modified material. Contact Boral Cement for further information.

Printed documents are uncontrolled. Refer to www.boral.com.au regularly for a more recent copy of the SDS where it exists.

Prepared by

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Revision: 2
SDS date: 21 January 2015

[End of SDS]

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Safety Data Sheet

1. IDENTIFICATION OF PRODUCT AND SUPPLIER

1. Product identifiers

Product name : HYDROCHLORIC ACID SOLUTION

2. Other means of identification

Muriatic acid, Spirit of salts, Hydrogen chloride solution, HCl

3. Recommended use of the product and restrictions on use

Swimming pool chemical, pH neutraliser, General chemical – boiler scale removal, ore reduction, pickling and metal cleaning, laboratory reagent

4. Details of supplier of the safety data sheet

Company : Bondall Pty Ltd

Street address : 113 Belmont Ave, Belmont, Western Australia 6104

Telephone : +61 8 6272 3815

Fax : +61 8 9277 4068

5. Emergency telephone number

Telephone : 1800 810 123

2. HAZARDS IDENTIFICATION

1. GHS Classification

Corrosive to metals (Category 1)
Skin corrosion (Category 1)
Serious eye damage (Category 1)
Specific target organ toxicity - single exposure (Category 3), Respiratory system

GHS Label elements, including precautionary statements

Pictogram :

Signal word : Danger

Hazard statement(s)

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

Precautionary statement(s)
Prevention

P234	Keep only in original container.
P261	Avoid breathing fume/ gas/ mist/ vapours/ spray.

P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363	Wash contaminated clothing before re-use.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see First Aid Measures on Safety Data Sheet).
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P390	Absorb spillage to prevent material damage.

Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.

2. Other hazards

None.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Classification	Concentration (%)
Hydrochloric acid	7647-01-0	Met. Corr. 1; Skin Corr. 1; Eye Dam. 1; STOT SE 3; H290; H314; H335	10 - 35
Water	7732-18-5	-	Balance

For the full text of the H-Statements mentioned in this section, see Section 16

4. FIRST AID MEASURES

1. Description of First Aid measures

General advice

Contact the Poisons Information Centre (Phone: Australia 131 126; New Zealand 0800 764 766) or consult a doctor/physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

In case of skin contact

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. Continue to wash skin and hair with plenty of water (and soap if material is insoluble) until advised to stop by the Poisons Information Centre or a doctor.

In case of eye contact
In case of eye contact, check for and remove any contact lenses. Immediately rinse thoroughly with plenty of running water until advised to stop by a Poisons Information Centre or doctor, or for at least 15 minutes, keeping eyelids open. Consult a doctor/physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek immediate medical assistance.

2. Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in Section 2.2 and/or Section 11.

3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically. Can cause corneal burns

4. First Aid facilities
Eye wash facilities and safety shower should be available.

5. FIRE FIGHTING MEASURES

1. Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

2. Special hazards arising from the chemical
Hydrogen chloride gas.

3. Special protective equipment and precautions for fire fighters
Wear self-contained breathing apparatus for firefighting if necessary.

4. Hazchem code
2R

6. ACCIDENTAL RELEASE MEASURES

1. Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see Section 8.

2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. If contamination of sewers or waterways has occurred, advise local emergency services. Observe all local and national regulations.

3. Methods and materials for containment and cleaning up
Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Neutralise with lime or soda ash. Collect and seal in properly labelled containers or drums for disposal. Wash area down with excess water.

7. HANDLING AND STORAGE

1. Precautions for safe handling
Avoid skin and eye contact and breathing in vapour, mists and aerosols. Keep out of reach of children. Always add the acid to water, never the reverse.

2. Conditions for safe storage, including any incompatibilities
Store in cool place and out of direct sunlight. Store away from incompatible materials described in Section 10. Store away from foodstuffs. Do not store in aluminium containers. Do not store in galvanised containers. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Dangerous Goods Class 8 Corrosive by the criteria of the ADG Code and must be stored and handled in accordance with the relevant regulations.

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Chemical Name	Reference	TWA – Peak Limitation		STEL		Carcinogen Category	Notices
		ppm	mg/m^3	ppm	mg/m^3		
Hydrochloric acid (7647-01-0)	ASCC	5	7.5			-	-

As published in "*Workplace Exposure Standards for Airborne Contaminants, December 2011"* by SWA.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Biological Limits
None allocated for this product.

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements

Personal protective equipment (PPE)

The selection of PPE is dependent on a risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods and environmental factors.

Eye/face protection
Tightly fitting safety glasses, full face-shield (where appropriate). See Australian Standards (AS/NZS 1336 & 1337).

Skin protection
Wear protective gloves, protective clothing and safety footwear and splash apron appropriate for the risk of exposure. See Australian Standards (AS 2161 & 2919 and AS/NZS 2210). Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. See Australian Standards (AS/NZS 1715 & 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form : Liquid Colour : Clear, colourless to slightly yellow
Odour:	Pungent
Odour Threshold:	No data available

pH:	<1
Melting Point:	< -20ºC
Boiling Point/Range:	98ºC (for 28% concentration)
Decomposition Temperature:	Not available
Evaporation Rate:	No data available
Flash Point:	Not applicable
Flammability Limits:	Not applicable
Specific Gravity:	1.14 (for 28% concentration) 1.16 (for 32% concentration)
Vapour Density (air=1):	1.3
Vapour Pressure:	2 kPa
% Volatiles:	100
Solubility in water:	Miscible with water

10. STABILITY AND REACTIVITY

1. **Reactivity**
   Corrosive to many metals with the liberation of extremely flammable hydrogen gas.
2. **Chemical stability**
   Stable under recommended storage conditions.
3. **Possibility of hazardous reactions**
   Reacts with oxidising agents and sodium hypochlorite liberating toxic chlorine gas.
4. **Conditions to avoid**
   Keep away from heat and sources of ignition. Protect from moisture. Avoid dust generation. Avoid exposure to direct sunlight.
5. **Incompatible materials**
   Incompatible with alkalis, oxidising agents, sodium hypochlorite, permanganates, cyanides and many metals.
6. **Hazardous decomposition products**
   Hydrogen chloride and chlorine gases.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available (Hydrochloric acid)
Inhalation: no data available (Hydrochloric acid)

However, for constituent HYDROGEN CHLORIDE:
LD_{50} Oral, rabbit is 900 mg/kg
LC_{50} Inhalation, rat is 3124 ppm/1h

Skin corrosion/irritation
Skin – Rabbit : Result : Causes burns

Serious eye damage/eye irritation
Eyes – Rabbit : Result : Corrosive to eyes

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. (Hydrochloric acid)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Hydrochloric acid)

Reproductive toxicity
No data available.

Specific target organ toxicity (STOT) - single exposure
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. (Hydrochloric acid)

Specific target organ toxicity (STOT) - repeated exposure
No data available

Aspiration hazard
No data available (Hydrochloric acid)

Health Effects
No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Eye contact : A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury..

Skin contact : Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns.

Ingestion : Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.

Inhalation : Breathing in mists or aerosols will produce respiratory irritation

11.2 Information on possible routes of exposure
The substance can be absorbed into the body by inhalation of its aerosol, ingestion, skin and/or eye contact.

11.3 Additional Information
RTECS: MW4025000

12. ECOGICAL INFORMATION

12.1 Ecotoxicity
Avoid contaminating waterways.

Toxicity to fish:
LC_{50} (Gambusia affinis, mosquito fish) = 282 mg/L, 96h

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods and containers
Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.

13.3 Special precautions for landfill or incineration
Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Classified as a Dangerous Goods by the criteria of the ADG Code for transport by road or rail
Classified as a Dangerous Goods by the criteria of the IMDG Code for transport by sea
Classified as a Dangerous Goods by the criteria of the IATA Code for transport by air

14.1 UN number
ADG : 1789 **IMDG :** 1789 **IATA :** 1789

14.2 Proper shipping name
ADG : HYDROCHLORIC ACID
IMDG : HYDROCHLORIC ACID
IATA : HYDROCHLORIC ACID

14.3 Transport hazard class
ADG : 8 Corrosive **IMDG :** 8 Corrosive **IATA :** 8 Corrosive

14.4 Packing group
ADG : II **IMDG :** II **IATA :** II

14.5 Environmental hazards
ADG : No **IMDG Marine Pollutant :** No **IATA :** No

14.6 Special precautions for users No data

14.7 Hazchem code
ADG : 2R **IMDG EMS :** F-A, S-B

14.8 Dangerous goods initial emergency response guide (SAA/SNZ HB76:2010) 40

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
S6 Poison

Carcinogen classification under WHS Regulations 2011, Schedule 10
Not listed

Notification status
AICS On the inventory, or in compliance with the inventory.

16. OTHER INFORMATION

Key / legend to abbreviations and acronyms used in the MSDS

ADG	Australian Dangerous Goods
ASCC	Australian Safety and Compensation Council
DEC	Department of Environment and Conservation
GHS	Globally Harmonised System of Classification & Labelling of Chemicals
NOHSC	National Occupational Health and Safety Commission
RTECS	Registry of Toxic Effects of Chemical Substances.
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
Eye Dam.	Serious eye damage
Met. Corr.	Corrosive to metals
Skin Corr.	Skin corrosion
STOT SE3	Specific target organ toxicity (single exposure) - Category 3
TWA	Time weighted average
STEL	Short term exposure level
SWA	Safe Work Australia
Peak Limitations	A ceiling concentration that should not be exceeded over a measurement period, which should be as short as possible, but not exceeding 15 minutes
LD_{50}	Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation
LC_{50}	Lethal concentration that kills 50% of an animal population within a specified time
TD Lo	The lowest dose of a substance known to have produced signs of toxicity

RTECS	Registry of Toxic Effects of Chemical Substances
g/L	Grams per litre
g/cm^3	Grams per cubic centimetre
mg/m^3	Milligrams per cubic metre
mg/kg	Milligrams per kilogram
pH	Relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline
WHS	Work Health and Safety

Literature references

"Workplace Exposure Standards for Airborne Contaminants, December 2011" by SWA Work Health and Safety Regulations 2011

"Registry of Toxic Effects of Chemical Substances". Ed. D. Sweet, US Dept. of Health & Human Services: Cincinatti, 2012.

Reason(s) for Issue:

Revised primary SDS
Alignment to GHS requirements

Disclaimer

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Identifier	**METHYLATED SPIRITS**
Other Names	Ethanol, Ethyl Alcohol, IMS
Manufacturer's Product Code	15000
Recommended Use	Solvent, Fuel, Cleaning Solvent

Details of Supplier/Manufacturer

Company:	Recochem Inc. ABN: 69 010 485 999
Address:	1809 Lytton Road, Lytton, Queensland 4178
Phone:	(07) 3308 5200 Fax: (07) 3308 5201
Website:	www.recochem.com.au

Emergency Telephone Numbers

Business Hours:	(07) 3308 5200
After Hours:	1300 131 001
Poisons Information:	Australia: 13 11 26 New Zealand: 0800 764 766

SECTION 2 HAZARDS IDENTIFICATION

Hazardous chemical	*according to classification by Safe Work Australia*
Dangerous goods	*according to the Australian Code for the Transport of Dangerous Goods by Road and Rail*

Signal Word	**DANGER**

GHS Classification	Pictogram	Hazard statement
Flammable Liquids, Category 2	 FLAME	H225 Highly flammable liquid and vapour
Serious Eye Damage/Irritation, Category 2A	 EXCLAMATION MARK	H319 Causes serious eye irritation

Precautionary statements:

GENERAL	
P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children
P103	Read label before use
PREVENTATIVE	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilation/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P264	Wash thoroughly after handling
P280	Wear protective gloves/eye protection/face protection
RESPONSE	
P303 + P361 + P353	IF ON SKIN (or hair): Take off contaminated clothing and wash before reuse. Rinse skin with water/shower
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313	If eye irritation persists: Get medical advice/attention
P370 + P378	In case of fire: Use foam/water spray/fog for extinction
STORAGE	
P403 + P235	Store in a well-ventilated place. Keep cool
DISPOSAL	
P501	Dispose of contents/container in accordance with local regulations

SECTION 3 COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients Names and Proportions

Chemical Entity	CAS Number	Proportion (%)
Ethanol	64-17-5	>= 95
Demin. Water	7732-18-5	<= 5

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

Inhalation:	Remove victim from exposure if safe to do so. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. Remove contaminated clothing.
Skin Contact:	If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water and follow by washing with soap if available.
Eye Contact:	If in eyes, hold eyes open, flood with water for at least 15 minutes. If symptoms persist transport to nearest medical facility for additional treatment.
Ingestion:	If swallowed, do NOT induce vomiting. Transport to nearest medical facility for additional treatment.

Symptoms caused by exposure

Inhalation:	May cause irritation to the respiratory system. Inhalation of the vapour may result in drunkenness (as per effects of ingestion). Early symptoms may occur at airborne levels of 1000 to 5000ppm.
Skin:	May include burning sensation and/or a dried/cracked appearance. Prolonged contact may cause defatting of skin which can lead to dermatitis.

Eye:	May include burning sensation, redness, swelling and/or blurred vision.
Ingestion:	Can cause drunkenness or harmful central nervous system effects. The deliberate ingestion of ethanol (50-100ml) may cause inebriation such that safety is impaired. Effects of a small intake may include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, and fatigue. Ingestion of a large amount may lead to severe acute intoxication, tremours, convulsion, loss of consciousness, coma, respiratory arrest and death.

Medical attention and special treatment

Treat symptomatically.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing equipment

Alcohol stable foam, water spray or fog. Dry chemical powder, carbon dioxide for small fires only. Do not use water in a jet.

Specific hazards arising from the chemical

Carbon monoxide and/or carbon dioxide may be evolved.

Special protective equipment and precautions for fire fighters

Wear full protective clothing and self-contained breathing apparatus. Hazchem code •2YE.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with spilled or released material. Shut off leaks, if possible without personal risks. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Remove all sources of ignition in the surrounding area. Take precautionary measure against static discharge. Ensure electrical continuity by bonding and earthing all equipment.

Environmental precautions

Use appropriate containment to avoid environmental contamination. Prevent from spreading and entering waterway using sand, earth or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Ventilate contaminated area thoroughly.

Methods and materials for containment and cleaning up

For small spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

For larger spills (> 1 drum), transfer by means such as a vacuum truck to a salvage tank for recovery or disposal. Do not flush residues with water. Retain as contaminated waste. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Highly flammable product. Avoid breathing vapours. Handle and open containers with care in a well-ventilated area. Ensure that the workplace is ventilated such that the Occupational Exposure limit is not exceeded. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in contaminated areas. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by earthing all equipment. Flameproof equipment necessary in area where chemical is being used. Vapours may accumulate in low or confined areas.

Conditions for safe storage, including any incompatibilities

Bulk storage tanks should be bunded. Store in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Do not store near strong oxidants.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control measures

From National Occupational Health & Safety Commission (NOHSC) Worksafe Australia - Ethanol: 1880mg/m³ (1000ppm) TWA (8hr)

Biological monitoring

No biological limit allocated.

Engineering controls

Ensure that adequate ventilation is provided. Maintain air concentrations below recommended exposure standards. Avoid generating and inhaling mists and vapours. Keep containers closed when not in use.

Individual protection measures

Eye and face protection:	Wear safety goggles.
Skin protection:	Use solvent resistant gloves, nitrile for longer term protection or PVC and neoprene for incidental splashes.
Respiratory protection:	If work practices do not maintain airborne level below the exposure standard, use appropriate respiratory protection equipment. When using respirators, select an appropriate combination of mask and filter. Select a filter for organic gases and vapours (boiling point > 65°C). Respirators should comply with AS1716 or an equivalent approved by a state/territory authority.
Thermal hazards:	Not applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless clear liquid
Odour:	Alcoholic
Odour threshold (ppm):	Data not available
pH:	Data not available
Melting point/freezing point (°C):	-117
Initial boiling point and boiling range (°C):	78
Flash point (°C):	13 (Abel)
Evaporation rate (Butyl acetate = 1):	Data not available
Flammability:	Highly flammable
Upper/lower flammability or explosive limits (%):	3.5 - 19.0
Vapour pressure (mmHg @ 20°C):	44
Vapour density (air = 1, @ 15°C):	1.59
Density (g/ml @ 15°C):	0.79 - 0.81
Solubility:	Data not available
Partition coefficient: n-octanol/water:	Data not available
Auto-ignition temperature (°C):	392
Decomposition temperature (°C):	Data not available
Kinematic viscosity (mm^2/s @ 20°C):	Data not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions of use.

Chemical stability

Stable under normal conditions of use.

Possibility of hazardous reactions

Stable under normal conditions of use.

Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials

Strong oxidising agents.

Hazardous decomposition products

Burning can produce carbon monoxide and/or carbon dioxide.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:	Low toxicity in animals - LD50 Oral (rat) : 7060mg/kg LC50 Inhalation (rat, 6h) : 5900mg/m^3
Skin corrosion/irritation:	Mild irritant. Prolonged contact may cause defatting of skin which can lead to dermatitis.
Serious eye damage/irritation:	Vapours may irritate the eyes. Liquid or mists may severely irritate or damage the eyes.
Respiratory or skin sensitisation:	Not expected to be a sensitiser.
Germ cell mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to impair fertility.
Specific Target Organ Toxicity (STOT) – single exposure:	Data not available.
Specific Target Organ Toxicity (STOT) – repeated exposure:	Long term exposure by swallowing or repeated inhalation, may cause degenerative changes in the liver, kidneys, gastrointestinal tract and heart muscle.
Aspiration hazard:	Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity:

Fish –	Expected to be harmful
Aquatic invertebrate –	Expected to be harmful
Algae –	Expected to be toxic
Microorganisms –	Expected to be harmful

Chronic toxicity:

Fish –	Data not available

Aquatic invertebrate –	Data not available
Algae –	Data not available
Microorganisms –	Data not available

Persistence and degradability
Biodegradable.

Bioaccumulative potential
Data not available.

Mobility in soil
Miscible with water.

Other adverse effects
Data not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Ensure waste disposal conforms to local waste disposal regulations.

SECTION 14 TRANSPORT INFORMATION

UN number:	1170
Proper shipping name:	Ethanol
Australian Dangerous Goods class:	3
Australian Dangerous Goods packing group:	II
Hazchem code:	•2YE

SECTION 15 REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), Poisons Schedule:	5
Australian Inventory of Chemical Substances (AICS):	Listed
Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76):	14

SECTION 16 OTHER INFORMATION

Date of preparation:	20/02/2017
Revision number:	7
Changes in this revision:	Updated hazard classification

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Identifier	**MINERAL TURPENTINE**
Other Names	Petropine, Thinners/Turps
Manufacturer's Product Code	16010
Recommended Use	Paint solvent, paint thinner, solvent

Details of Supplier/Manufacturer

Company:	Recochem Inc. ABN: 69 010 485 999
Address:	1809 Lytton Road, Lytton, Queensland 4178
Phone:	(07) 3308 5200 Fax: (07) 3308 5201
Website:	www.recochem.com.au

Emergency Telephone Numbers

Business Hours:	(07) 3308 5200
After Hours:	1300 131 001
Poisons Information:	Australia: 13 11 26 New Zealand: 0800 764 766

SECTION 2 HAZARDS IDENTIFICATION

Hazardous chemical	*according to classification by Safe Work Australia*
Dangerous goods	*according to the Australian Code for the Transport of Dangerous Goods by Road and Rail*

Signal Word	**DANGER**

GHS Classification	Pictogram	Hazard statement
Flammable Liquids, Category 3	 FLAME	H226 Flammable liquid and vapour
Aspiration Hazard, Category 1	 HEALTH HAZARD	H304 May be fatal if swallowed and enters airways
Specific Target Organ Toxicity (Repeated exposure), Category 1		H372 Causes damage to organs (central nervous system) through prolonged or repeated exposure

Skin Corrosion/Irritation, Category 2	 EXCLAMATION MARK	H315 Causes skin irritation
Serious Eye Damage/Irritation, Category 2A		H319 Causes serious eye irritation
Specific Target Organ Toxicity (Single exposure), Category 3		H335 May cause respiratory irritation
Chronic Aquatic Toxicity, Category 2	 ENVIRONMENT	H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

GENERAL	
P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children
P103	Read label before use
PREVENTATIVE	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilation/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P260	Do not breathe mist/vapours/spray
P261	Avoid breathing mist/vapours/spray
P264	Wash thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P273	Avoid release to the environment
P280	Wear protective gloves/eye protection/face protection
RESPONSE	
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353	IF ON SKIN (or hair): Take off contaminated clothing and wash before reuse. Rinse skin with water/shower
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P314	Get medical advice/attention if you feel unwell
P331	Do NOT induce vomiting
P332 + P313	If skin irritation occurs: Get medical advice/attention
P337 + P313	If eye irritation persists: Get medical advice/attention
P362	Take off contaminated clothing and wash before reuse
P370 + P378	In case of fire: Use foam/water spray/fog for extinction
P391	Collect spillage

STORAGE	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed
P403 + P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
DISPOSAL	
P501	Dispose of contents/container in accordance with local regulations

SECTION 3 COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients Names and Proportions

Chemical Entity	CAS Number	Proportion (%)
Solvent naphtha (petroleum), light aromatic	64742-95-6	< 40
Naphtha (petroleum), hydrodesulphurized heavy	64742-82-1	< 70
With components:		
1,2,4 Trimethylbenzene	95-63-6	< 20
1,3,5 Trimethylbenzene	108-67-8	< 15
Xylene, Mixed Isomers	1330-20-7	< 15
1,2,3 Trimethylbenzene	526-73-8	< 5
n-Propylbenzene	103-65-1	< 5
Cumene	98-82-8	< 5
Note – product contains < 0.1% benzene		

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

Inhalation:	Remove victim from exposure if safe to do so. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin Contact:	If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water and follow by washing with soap if available.
Eye Contact:	If in eyes, hold eyes open, flood with water for at least 15 minutes. If irritation persists seek medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Symptoms caused by exposure

Inhalation:	Breathing of high vapour concentrations may cause central nervous system depression.
Skin:	May include itching and redness.
Eye:	May include burning and temporary redness.
Ingestion:	May cause mild gastrointestinal irritation.

Medical attention and special treatment

Treat symptomatically.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing equipment

Foam, water spray or fog. Dry chemical powder or carbon dioxide for small fires only. Do not use water in a jet.

Specific hazards arising from the chemical

Carbon monoxide may be evolved if incomplete combustion occurs. Will float and can be reignited on surface water. Vapour is heavier than air, can spread along ground and distant ignition is possible.

Special protective equipment and precautions for fire fighters

Wear full protective clothing and self-contained breathing apparatus. Hazchem code 3Y.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with spilled or released material. Shut off leaks, if possible without personal risks. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Remove all sources of ignition in the surrounding area. Take precautionary measure against static discharge. Ensure electrical continuity by bonding and earthing all equipment.

Environmental precautions

Use appropriate containment to avoid environmental contamination. Prevent from spreading and entering waterway using sand, earth or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Ventilate contaminated area thoroughly.

Methods and materials for containment and cleaning up

For small spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

For larger spills (> 1 drum), transfer by means such as a vacuum truck to a salvage tank for recovery or disposal. Do not flush residues with water. Retain as contaminated waste. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Flammable product. Avoid breathing vapours. Handle and open containers with care in a well-ventilated area. Ensure that the workplace is ventilated such that the Occupational Exposure limit is not exceeded. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in contaminated areas. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by earthing all equipment.

Conditions for safe storage, including any incompatibilities

Store in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Do not store near aerosols, strong oxidants and corrosives.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control measures

In the absence of data from National Occupational Health & Safety Commission (NOHSC) Worksafe Australia, use: Aromatic solvents 169-185, HSPA 100mg/m^3 TWA (8hr).

Biological monitoring

No biological limit allocated.

Engineering controls

Ensure that adequate ventilation is provided. Maintain air concentrations below recommended exposure standards. Avoid generating and inhaling mists and vapours. Keep containers closed when not in use.

Individual protection measures

Eye and face protection:	Wear safety goggles.
Skin protection:	Use solvent resistant gloves, nitrile for longer term protection or PVC and neoprene for incidental splashes.

Respiratory protection:	If work practices do not maintain airborne level below the exposure standard, use appropriate respiratory protection equipment. When using respirators, select an appropriate combination of mask and filter. Select a filter for organic gases and vapours (boiling point > 65°C). Respirators should comply with AS1716 or an equivalent approved by a state/territory authority.
Thermal hazards:	Not applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless/Pale yellow liquid
Odour:	Aromatic
Odour threshold (ppm):	Data not available
pH:	Data not available
Melting point/freezing point (°C):	Data not available
Initial boiling point and boiling range (°C):	Typical 148 - 200
Flash point (°C):	31 (Abel)
Evaporation rate (Butyl acetate = 1):	Data not available
Flammability:	Flammable
Upper/lower flammability or explosive limits (%):	0.01 - 7.00
Vapour pressure (kPa @ 20°C):	Typical 0.5
Vapour density (air = 1, @ 15°C):	4.35
Density (g/ml @ 15°C):	Typical 0.78 - 0.82
Solubility (kg/m^3):	Not miscible with water
Partition coefficient: n-octanol/water:	Data not available
Auto-ignition temperature (°C):	Typical 300
Decomposition temperature (°C):	Data not available
Kinematic viscosity (mm^2/s @ 40°C):	Data not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity

Stable under normal conditions of use.

Chemical stability

Stable under normal conditions of use.

Possibility of hazardous reactions

Stable under normal conditions of use.

Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials

Strong oxidising agents.

Hazardous decomposition products

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids, gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:	Expected to be of low toxicity - LD50 Oral (rat) > 2000mg/kg
Skin corrosion/irritation:	Mild irritant. Prolonged contact may cause defatting of skin which can lead to dermatitis.
Serious eye damage/irritation:	Mild irritant.
Respiratory or skin sensitisation:	Not expected to be a sensitiser.
Germ cell mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to impair reproduction.
Specific Target Organ Toxicity (STOT) – single exposure:	Data not available
Specific Target Organ Toxicity (STOT) – repeated exposure:	Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss. Central nervous system: repeated exposure affects the nervous system.
Aspiration hazard:	Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity:

Fish –	Expected to be toxic: 1 < LC/EC/IC50 <= 10mg/l
Aquatic invertebrate –	Expected to be toxic: 1 < LC/EC/IC50 <= 10mg/l
Algae –	Expected to be toxic: 1 < LC/EC/IC50 <= 10mg/l
Microorganisms –	Expected to be toxic: 1 < LC/EC/IC50 <= 10mg/l

Chronic toxicity:

Fish –	Data not available
Aquatic invertebrate –	Data not available
Algae –	Data not available
Microorganisms –	Data not available

Persistence and degradability

Readily biodegradable. Oxidises by photo-chemical reactions in air.

Bioaccumulative potential

Has the potential to bioaccumulate.

Mobility in soil

Floats on water.

Other adverse effects

Data not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Ensure waste disposal conforms to local waste disposal regulations.

SECTION 14 TRANSPORT INFORMATION

UN number:	1300
Proper shipping name:	Turpentine Substitute
Australian Dangerous Goods class:	3
Australian Dangerous Goods packing group:	III
Hazchem code:	3Y

SECTION 15 REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), Poisons Schedule:	5
Australian Inventory of Chemical Substances (AICS):	Listed
Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76):	14

SECTION 16 OTHER INFORMATION

Date of preparation:	18/05/2017
Revision number:	8
Changes in this revision:	Updated hazard classification

Safety Data Sheet

Oxygen, Compressed Gas

Date of first issue: 06/10/2009 Revised date: 20/12/2016 Supersedes: 20/12/2016 Version: 5.1

SDS reference: AL605

Danger

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : Oxygen, Aligal 3, Lasal 2003

SDS no : AL605

Chemical description : Oxygen

CAS-No. : 7782-44-7

EC-No. : 231-956-9

EC Index-No. : 008-001-00-8

Registration-No. : Listed in Annex IV / V REACH, exempted from registration.

Chemical formula : O2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.
Test gas/Calibration gas.
Welding, cutting, heating and brazing.
Shield gas for welding processes.
Use for manufacture of electronic/photovoltaic components.
Water treatment.
Laser gas.
Laboratory use.
Food applications.
Contact supplier for more information on uses.

Uses advised against : Consumer use.

1.3. Details of the supplier of the safety data sheet

Company identification : Air Liquide Australia Limited
Level 9 / 380 St. Kilda Road
3004 Melbourne VIC Australia
+61 3 9697 9888
ALAEnquiries@AirLiquide.com

1.4. Emergency telephone number

Emergency telephone number : 1800 812 588

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to WHS Regulation

Physical hazards	Oxidising Gases, Category 1	H270
	Gases under pressure : Compressed gas	H280

2.2. Label elements

Classification according to WHS Regulation

Hazard pictograms :

GHS03 GHS04

Signal word : Danger

Hazard statements : H270 - May cause or intensify fire; oxidiser..
H280 - Contains gas under pressure; may explode if heated..

Precautionary statements

- Prevention : P220 - Keep away from combustible materials.
P244 - Keep valves and fittings free from oil and grease..
- Response : P370+P376 - In case of fire: stop leak if safe to do so..
- Storage : P403 - Store in a well-ventilated place..

2.3. Other hazards

: None.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to WHS Regulation
Oxygen	(CAS-No.) 7782-44-7 (EC-No.) 231-956-9 (EC Index-No.) 008-001-00-8 (Registration-No.) *1	100	Ox. Gas 1, H270 Press. Gas (Comp.), H280

Contains no other components or impurities which will influence the classification of the product.

**1: Listed in Annex IV / V REACH, exempted from registration.*

**2: Registration deadline not expired.*

**3: Registration not required: Substance manufactured or imported < 1t/y.*

Full text of R-phrases see section 16. Full text of H-statements see section 16.

3.2. Mixtures : Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
Remove victim to uncontaminated area.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

: Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.
Refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

: None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Supports combustion.
Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : None.

5.3.
5.3. Advice for fire-fighters

Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.
If possible, stop flow of product.
Use water spray or fog to knock down fire fumes if possible.
Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

Hazchemcode : 2S

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Try to stop release.
Evacuate area.
Monitor concentration of released product.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Eliminate ignition sources.
Ensure adequate air ventilation.
Act in accordance with local emergency plan.
Stay upwind.

6.2. Environmental precautions

: Try to stop release.

6.3. Methods and material for containment and cleaning up

: Ventilate area.

6.4. Reference to other sections

: See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product	:	The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularily) checked for leaks before use. Do not smoke while handling product. Keep equipment free from oil and grease. Use no oil or grease. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Use only oxygen approved lubricants and oxygen approved sealings. Use only with equipment cleaned for oxygen service and rated for cylinder pressure. Avoid suck back of water, acid and alkalis. Do not breathe gas.
Safe handling of the gas receptacle	:	Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.

7.2. Conditions for safe storage, including any incompatibilities

: Observe all regulations and local requirements regarding storage of containers.
Containers should not be stored in conditions likely to encourage corrosion.
Container valve guards or caps should be in place.
Containers should be stored in the vertical position and properly secured to prevent them from falling over.
Stored containers should be periodically checked for general condition and leakage.
Keep container below 50°C in a well ventilated place.
Segregate from flammable gases and other flammable materials in store.
Store containers in location free from fire risk and away from sources of heat and ignition.
Keep away from combustible materials.

7.3. Specific end use(s)

: None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL (Occupational Exposure Limits) : No data available.

DNEL (Derived-No Effect Level) : No data available.

PNEC (Predicted No-Effect Concentration) : No data available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

: Provide adequate general and local exhaust ventilation.
Systems under pressure should be regularly checked for leakages.
Avoid oxygen rich (>23,5%) atmospheres.
Gas detectors should be used when oxidising gases may be released.
Consider the use of a work permit system e.g. for maintenance activities.

8.2.2. Individual protection measures, e.g. personal protective equipment

: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:
PPE compliant to the recommended EN/ISO standards should be selected.

• Eye/face protection : Wear safety glasses with side shields.
Standard EN 166 - Personal eye-protection - specifications

• Skin protection

- Hand protection : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risk.

- Other : Consider the use of flame resistant safety clothing.
Standard EN ISO 14116 - Limited flame spread materials.
Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

• Respiratory protection : None necessary.

• Thermal hazards : None in addition to the above sections

8.2.3. Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

- Physical state at 20°C / 101.3kPa : Gas.
- Colour : Colourless.

Odour	:	No odour warning properties.
Odour threshold	:	Odour threshold is subjective and inadequate to warn of overexposure.
pH value	:	Not applicable for gases and gas mixtures.
Molar mass	:	32 g/mol
Melting point	:	-219 °C
Boiling point	:	-183 °C
Flash point	:	Not applicable for gases and gas mixtures.
Critical temperature [°C]	:	-118 °C
Evaporation rate (ether=1)	:	Not applicable for gases and gas mixtures.
Flammability range	:	Non flammable.
Vapour pressure [20°C]	:	Not applicable.
Vapour pressure [50°C]	:	Not applicable.
Relative density, gas (air=1)	:	1.1
Relative density, liquid (water=1)	:	1.1
Solubility in water	:	39 mg/l

Partition coefficient n-octanol/water [log Kow]	:	Not applicable for inorganic gases.
Auto-ignition temperature	:	Non flammable.
Decomposition point [°C]	:	Not applicable.
Viscosity [20°C]	:	No reliable data available.
Explosive Properties	:	Not applicable.
Oxidising Properties	:	Oxidiser.
- Coefficient of oxygen equivalency (Ci)	:	1

9.2. Other information

Other data : No additional information available

SECTION 10: Stability and reactivity

and reactivity

10.1. Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

: Stable under normal conditions.

10.3. Possibility of hazardous reactions

: Violently oxidises organic material.

10.4. Conditions to avoid

: Avoid moisture in installation systems.

10.5. Incompatible materials

: May react violently with combustible materials.
May react violently with reducing agents.
Keep equipment free from oil and grease.
Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bar) oxygen lines in case of combustion.
For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

: None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	No known toxicological effects from this product.
Skin corrosion/irritation	:	No known effects from this product.
Serious eye damage/irritation	:	No known effects from this product.
Respiratory or skin sensitisation	:	No known effects from this product.
Germ cell mutagenicity	:	No known effects from this product.
Carcinogenicity	:	No known effects from this product.
Toxic for reproduction : Fertility	:	No known effects from this product.
Toxic for reproduction : unborn child	:	No known effects from this product.
STOT-single exposure	:	No known effects from this product.
STOT-repeated exposure	:	No known effects from this product.
Aspiration hazard	:	Not applicable for gases and gas mixtures.

SECTION 12: Ecological information

12.1. Toxicity

Assessment : No ecological damage caused by this product.

12.2. Persistence and degradability

Assessment : No ecological damage caused by this product.

12.3. Bioaccumulative potential

Assessment : No data available.

12.4. Mobility in soil

Assessment : Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

12.5. Results of PBT and vPvB assessment

Assessment : No data available.

12.6. Other adverse effects

: No known effects from this product.

Effect on the ozone layer : None.

Effect on global warming : None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contact supplier if guidance is required.
May be vented to atmosphere in a well ventilated place.
Do not discharge into any place where its accumulation could be dangerous.
Ensure that the emission levels from local regulations or operating permits are not exceeded.
Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods.
Return unused product in original cylinder to supplier.

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 04 *: Gases in pressure containers (including halons) containing dangerous substances.

13.2. Additional information

: External treatment and disposal of waste should comply with applicable local and/or national regulations

SECTION 14: Transport information

14.1. UN number

UN-No. : 1072

14.2. UN proper shipping name

Transport by road/rail (ADG) : OXYGEN, COMPRESSED

Transport by air (ICAO-TI / IATA-DGR) : Oxygen, compressed

Transport by sea (IMDG) : OXYGEN, COMPRESSED

14.3. Transport hazard class(es)

Labelling :

2.2 : Non-flammable, non-toxic gases
5.1 : Oxidizing substances

Transport by road/rail (ADG)

Class : 2
Hazchemcode : 2S
Hazard identification number : 25
Tunnel Restriction : E - Passage forbidden through tunnels of category E

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 2.2 (5.1)

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.2 (5.1)
Emergency Schedule (EmS) - Fire : F-C
Emergency Schedule (EmS) - Spillage : S-W

14.4. Packing group

Transport by road/rail (ADR/RID) : Not applicable
Transport by air (ICAO-TI / IATA-DGR) : Not applicable
Transport by sea (IMDG) : Not applicable

14.5. Environmental hazards

Transport by road/rail (ADR/RID) : None.
Transport by air (ICAO-TI / IATA-DGR) : None.
Transport by sea (IMDG) : None.

14.6. Special precautions for user

Packing Instruction(s)

Transport by road/rail (ADR/RID) : P200
Transport by air (ICAO-TI / IATA-DGR)
Passenger and Cargo Aircraft : 200
Cargo Aircraft only : 200
Transport by sea (IMDG) : P200

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers:
- Ensure there is adequate ventilation.
- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

HAZCHEMCODE : 2S

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

: A CSA does not need to be carried out for this product.

SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 453/2010.

Abbreviations and acronyms : ATE - Acute Toxicity Estimate. CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. EINECS - European Inventory of Existing Commercial Chemical Substances. CAS# - Chemical Abstract Service number. PPE - Personal Protection Equipment. LC50 - Lethal Concentration to 50 % of a test population. RMM - Risk Management Measures. PBT - Persistent, Bioaccumulative and Toxic. vPvB - Very Persistent and Very Bioaccumulative. STOT- SE : Specific Target Organ Toxicity - Single Exposure. CSA - Chemical Safety Assessment. EN - European Standard. UN - United Nations. ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road. IATA - International Air Transport Association. IMDG code - International Maritime Dangerous Goods. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail. WGK - Water Hazard Class. STOT - RE : Specific Target Organ Toxicity - Repeated Exposure.

Training advice : Ensure operators understand the hazard of oxygen enrichment.

Full text of H-statements

Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.

DISCLAIMER OF LIABILITY : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Details given in this document are believed to be correct at the time of going to press.
Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

End of document

SAFETY DATA SHEET

Unleaded 91

Section 1. Identification

GHS product identifier Unleaded 91

Other means of identification regular unleaded petrol

Product code 0000002733

SDS no. 0000002733

Historic SDS no. 875; 0000002889

Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/ mixture Use only as a motor fuel for spark ignition engines. NOT for aviation use. Should NOT be used as a solvent nor cleaning agent.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Manufacturer

Supplier

BP Australia Pty Ltd
Level 17, 717 Bourke Street
Docklands, Victoria 3008
ABN 53 004 085 616

www.bp.com.au

Technical Helpline Number: 1300 139 700

EMERGENCY TELEPHONE NUMBER 1800 638 556

Section 2. Hazard(s) identification

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 1
SKIN CORROSION/IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word DANGER

Hazard statements

H224 - Extremely flammable liquid and vapour.
H315 - Causes skin irritation.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging the unborn child.
H304 - May be fatal if swallowed and enters airways.
H336 - May cause drowsiness or dizziness.

Precautionary statements

Section 2. Hazard(s) identification

General

P103 - Read label before use.
P102 - Keep out of reach of children.
P101 - If medical advice is needed, have product container or label at hand.

Prevention

P201 - Obtain special instructions before use.
P261 - Avoid breathing vapour.
P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P273 - Avoid release to the environment.

Response

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P235 - Keep cool.
P405 - Store locked up.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.

Other hazards which do not result in classification

Contains Benzene. Prolonged or repeated exposure to benzene can cause anaemia and other blood diseases, including leukaemia.

Section 3. Composition and ingredient information

Substance/mixture

Mixture

A complex mixture of volatile hydrocarbons containing paraffins, naphthenes, olefins and aromatics with carbon numbers predominantly between C4 and C12. May contain oxygenates. May also contain small quantities of proprietary performance additives.

Ingredient name	% (w/w)	CAS number
Gasoline	>90	86290-81-5
Contains:		
Benzene	<1	71-43-2
tert-butyl methyl ether(MTBE)	<1	1634-04-4
2-methylpropan-2-ol	<1	75-65-0
diisopropyl ether	<1	108-20-3
Polycyclic aromatic hydrocarbons (PAHs)	<1	mixture

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Inhalation

If inhaled, remove to fresh air. Get medical attention.

If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Section 4. First aid measures

Skin contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Clean shoes thoroughly before reuse. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Get medical attention.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Specific treatments

No specific treatment.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Extremely flammable liquid and vapour. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Liquid will float and may reignite on surface of water.

Hazardous thermal decomposition products

Combustion products may include the following:
carbon dioxide
carbon monoxide
other hazardous substances.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Hazchem code

3YE

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

Methods and material for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use explosion-protected equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use explosion-protected equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Do not fill container while it is in or on a vehicle. Static electricity may ignite vapour and cause fire. Place container on ground when filling and keep nozzle in contact with container.

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Take precautionary measures against electrostatic discharges. Avoid contact of spilt material and runoff with soil and surface waterways. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not

Section 7. Handling and storage

in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid exposure during pregnancy. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is explosion-protected (i.e. will not produce sparks).

Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	**ACGIH TLV (United States).** TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/ Revised: 5/1996 STEL: 1480 mg/m³ 15 minutes. Issued/ Revised: 5/1996
Benzene	**Safe Work Australia (Australia).**

	TWA: 3.2 mg/m³ 8 hours. Issued/Revised: 4/2003 TWA: 1 ppm 8 hours. Issued/Revised: 4/2003
Polycyclic aromatic hydrocarbons (PAHs)	**Safe Work Australia (Australia).** TWA: 0.2 mg/m³ 8 hours.
diisopropyl ether	**Safe Work Australia (Australia).** STEL: 1300 mg/m³ 15 minutes. Issued/ Revised: 5/1995 STEL: 310 ppm 15 minutes. Issued/ Revised: 5/1995 TWA: 1040 mg/m³ 8 hours. Issued/Revised: 5/1995 TWA: 250 ppm 8 hours. Issued/Revised: 5/1995
2-methylpropan-2-ol	**Safe Work Australia (Australia).** STEL: 455 mg/m³ 15 minutes. Issued/ Revised: 5/1995 STEL: 150 ppm 15 minutes. Issued/ Revised: 5/1995 TWA: 303 mg/m³ 8 hours. Issued/Revised: 5/1995 TWA: 100 ppm 8 hours. Issued/Revised: 5/1995
tert-butyl methyl ether(MTBE)	**Safe Work Australia (Australia).** STEL: 275 mg/m³ 15 minutes. Issued/ Revised: 4/2002 STEL: 75 ppm 15 minutes. Issued/Revised: 4/2002 TWA: 92 mg/m³ 8 hours. Issued/Revised: 4/2002 TWA: 25 ppm 8 hours. Issued/Revised: 4/2002

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Recommended: splash goggles

Skin protection

Section 8. Exposure controls and personal protection

Hand protection

Wear chemical resistant gloves.

Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Recommended: Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals.
Wear a chemically resistant multi-layer laminate inner glove inside an outer nitrile glove. The purpose of the outer glove is to protect the inner glove from cuts and mechanical damage. The presence of aromatic hydrocarbons in the product will significantly shorten the length of time that nitrile gloves will provide protection. Do not re-use nitrile gloves if exposed to aromatic hydrocarbons.

Skin protection

Use of protective clothing is good industrial practice.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: overall

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: nitrile rubber

Respiratory protection

Use with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/ vapour/aerosol/particulates) that may arise when handling the product.
The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application.
Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.
Recommended: full-face mask

Section 8. Exposure controls and personal protection

Recommended: Avoid breathing of vapours, mists or spray. Select and use respirators in accordance with AS/NZS 1715/1716. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist (Type P1) filters. Filter capacity and respirator type depends on exposure level.

Refer to standards: Respiratory protection:AS/NZS 1715 and AS/NZS 1716
Gloves:AS/NZS 2161.1
Eye protection:AS/NZS 1336 and AS/NZS 1337

Section 9. Physical and chemical properties

Appearance

Physical state Liquid. Clear and Bright

Colour Pale Yellow. to Pale Red.

Odour Hydrocarbon.

Odour threshold Not available.

pH Not available.

Melting point Not available.

Boiling point >30 to 210°C (>86 to 410°F)

Flash point Closed cup: <-40°C (<-40°F)

Evaporation rate Not available.

Flammability (solid, gas) Not applicable. Based on - Physical state

Lower and upper explosive (flammable) limits Lower: 1.4%
Upper: 7.6%

Vapour pressure 30.1 to 100.3 kPa (225.6 to 752 mm Hg)

Vapour density Not available.

Relative density Not available.

Density 710 to 750 kg/m³ (0.71 to 0.75 g/cm³)

Solubility insoluble in water.

Partition coefficient: n-octanol/water Not available.

Auto-ignition temperature >350°C (>662°F)

Decomposition temperature Not available.

Viscosity Kinematic: 0.4 to 0.55 mm^2/s (0.4 to 0.55 cSt) at 40°C

Remarks Reid vapor pressure (RVP): 55 to 100 kPa (40 °C)

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.

Incompatible materials Reactive or incompatible with the following materials: oxidising materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LC50 Inhalation Vapour	Rat	>7630 mg/m³ Nominal	4 hours
	LC50 Inhalation Vapour	Rat	>5610 mg/m³ analytical	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
diisopropyl ether	LC50 Inhalation Vapour	Rat	40.5 mg/m³	1 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	8470 mg/kg	-
2-methylpropan-2-ol	LD50 Oral	Rabbit	3559 mg/kg	-
	LD50 Oral	Rat	2743 mg/kg	-
tert-butyl methyl ether (MTBE)	LC50 Inhalation Vapour	Rat	85 mg/l	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Gasoline	Skin - Irritant	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-
tert-butyl methyl ether (MTBE)	Skin - Irritation	Rabbit	-	-	-
	Eyes - Non-irritating to the eyes.	Rabbit	-	-	-

Skin Causes skin irritation.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Gasoline	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative
tert-butyl methyl ether (MTBE)	EU B 13/14	Experiment: In vitro Subject: Non-mammalian species	Negative
	OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative
	OECD 476	Experiment: In vitro Subject: Non-mammalian species	Negative
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative
	Equivalent to OECD 486	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative

	Equivalent to EPA OPPTS 870.5385	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative
	Equivalent to EPA OPPTS 798.5385	Experiment: In vivo Subject: Unspecified Cell: Somatic	Negative

Conclusion/Summary May cause genetic defects.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	Negative - Inhalation - Unspecified	Rat	-	113 weeks
	Negative - Dermal - Unspecified	Mouse	-	102 weeks
tert-butyl methyl ether (MTBE)	Positive - Inhalation - Unspecified	Rat	-	2 years

Conclusion/Summary May cause cancer

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Gasoline	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	14 days
tert-butyl methyl ether (MTBE)	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	9 days

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	Not applicable.	Narcotic effects
Benzene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
diisopropyl ether	Category 3	Not applicable.	Narcotic effects
tert-butyl methyl ether(MTBE)	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Benzene	Category 1	Not determined	blood system

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1

Information on likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Inhalation Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact Causes skin irritation.

Section 11. Toxicological information

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations

Ingestion Adverse symptoms may include the following:
nausea or vomiting
reduced foetal weight
increase in foetal deaths
skeletal malformations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eye contact Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Inhalation Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Skin contact Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

General Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious central nervous system effects, including unconsciousness, and possibly death.

Carcinogenicity May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity May cause genetic defects.

Teratogenicity Suspected of damaging the unborn child.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Other information Gasoline - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related

kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital).
Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline: Additional toxicity information on the components:

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.
Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Toluene: Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children

of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Foetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired colour vision and decreased performance in some neurobehavioural tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

Xylenes: Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapour becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.

Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.

Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.

Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

Ethylbenzene - The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100 to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice.
NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits.

Section 11. Toxicological information

Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Gasoline	Acute EC50 15.41 mg/l Nominal Fresh water	Micro-organism	40 hours
	Acute EL50 3.1 mg/l Nominal Fresh water	Algae	72 hours
	Acute EL50 3.7 mg/l Nominal Fresh water	Algae	96 hours
	Acute EL50 4.5 mg/l Nominal Fresh water	Daphnia	48 hours
	Acute LL50 10 mg/l Nominal Fresh water	Fish	96 hours
	Acute LL50 8.2 mg/l Nominal Fresh water	Fish	96 hours
	Acute NOELR 0.5 mg/l Nominal Fresh water	Algae	72 hours
	Acute NOELR 0.5 mg/l Nominal Fresh water	Daphnia	48 hours
	Chronic EL50 10 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic EL50 >40 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic EL50 10 mg/l Nominal Fresh water	Fish	21 days
	Chronic LL50 5.2 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic NOELR 16 mg/l Nominal Fresh water	Daphnia	21 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Fish	14 days
	Chronic NOELR 2.6 mg/l Nominal Fresh water	Fish	21 days
	Chronic PNEC >0.4 mg/kg	soil, plants	-
tert-butyl methyl ether(MTBE)	Acute EC50 472 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 200 mg/l Marine water	Crustaceans	96 hours
	Acute LC50 672 mg/l Fresh water	Fish	96 hours
	Acute LC50 574 mg/l Marine water	Fish	96 hours
	Chronic NOEC 26 mg/l Marine water	Crustaceans	28 days
	Chronic NOEC 51 mg/l Fresh water	Daphnia	21 days

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Expected to be biodegradable. Non-persistent per IMO criteria

Product/ingredient name	Test	Result	Dose	Inoculum

Section 12. Ecological information

tert-butyl methyl ether(MTBE)	not guideline	100 % - 1.25 days	-	-
	Modelled data	61 to 69 % - 151 days	-	-
	OECD 301 D	9.24 % - Not readily - 28 days	-	-
	OECD 301 D	1.8 % - Not readily - 28 days	-	-
	OECD 301 D	0 % - Not readily - 28 days	-	-
	Modelled data	0 % - 250 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Gasoline	-	-	Inherent

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Gasoline	2 to 7	-	high
Benzene	2.13	11	low
diisopropyl ether	2.4	-	low
2-methylpropan-2-ol	0.317	-	low
tert-butyl methyl ether(MTBE)	1.04	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Special Precautions for Landfill or Incineration No additional special precautions identified.

Section 14. Transport information

Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	MOTOR SPIRIT or GASOLINE or PETROL	MOTOR SPIRIT or GASOLINE or PETROL MARINE POLLUTANT	MOTOR SPIRIT or GASOLINE or PETROL
Transport hazard class(es)	3 	3 	3 
Packing group	II	II	II
Environmental hazards	No.	Yes.	No.
Additional information	**Hazchem code** 3YE **Initial emergency response guide** 14	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-E,S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user Not available.

Transport in bulk according to Annex II of Marpol and the IBC Code **Proper shipping name** MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gasoline and spirits

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not scheduled. When packed in containers having capacity of greater than 20 litres.

S5. When packed in containers having capacity of less than 20 litres.

Consumer products - This product is exempt per Appendix A of the SUSMP.
Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

Model Work Health and Safety Regulations - Scheduled Substances

Ingredient name	Schedule
No listed substance	-

International lists

National inventory

REACH Status For the REACH status of this product please consult your company contact, as identified in Section 1.

Australia inventory (AICS) Contact local supplier or distributor.

Canada inventory At least one component is not listed.

China inventory (IECSC) At least one component is not listed.

Japan inventory (ENCS) At least one component is not listed.

Korea inventory (KECI) At least one component is not listed.

Section 15. Regulatory information

Philippines inventory (PICCS)	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	Not determined.
United States inventory (TSCA 8b)	Not determined.

Section 16. Any other relevant information

History

Date of printing	01/09/2016
Date of issue/Date of revision	01/09/2016
Date of previous issue	29/06/2016
Version	3
	Product Stewardship

Key to abbreviations

ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOHSC = National Occupational Health and Safety Commission
STEL = Short term exposure limit
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations
TWA = Time weighted average
VOC = Volatile Organic Compound
SADT = Self-Accelerating Decomposition Temperature
Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

Procedure used to derive the classification

Classification	Justification
Flam. Liq. 1, H224	Expert judgment
Skin Irrit. 2, H315	Expert judgment
Muta. 1B, H340	Expert judgment
Carc. 1B, H350	Expert judgment
Repr. 2, H361 (Unborn child)	Expert judgment
STOT SE 3, H336	Expert judgment
Asp. Tox. 1, H304	Expert judgment

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Any other relevant information

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

Safety Data Sheet

1 – Product Identifier & Identity for the Chemical

Manufacturer: WD-40 Company Australia Pty Ltd **Address: 41 Rawson Street (Level 2, Suite 23) Epping NSW, 2121, Australia** **Telephone:** **Information:** +61 2 9868 2200 **Emergency only:** 1800 862 115 **Poisons Information Centre:** **Australia:** 13 11 26 **New Zealand:** 0800 764 766 **New Zealand Contact Details:** **Name: Eproducts New Zealand Limited** **Address: 7D Orbit Drive Albany New Zealand** **Telephone:** **Information:** 09 916 6750 **Emergency only:** 0800 425 459	**Product Name: WD-40 Aerosol** **Chemical Name:** Mixture **Product Use:** Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion **Restriction on Use:** None Identified **SDS Date Of Preparation:** 19 September 2019 **This SDS applies to unit code(s):** 61001, 61002, 61003, 61004, 61006, 61009, 61022, 61031, 61035, 61090, 61092, 61093, 61564, 62003, 62007, 62008, 62105

2 – Hazards Identification

Classification of the Hazardous Chemical (in accordance with WHS Regulation)

Health	Environmental	Physical
Aspiration Toxicity Category 1	Not Classified	Flammable Aerosol Category 1 Gas Under Pressure: Compressed Gas

Label Elements

Contains: Distillates (Petroleum), hydrotreated light

Danger!
H222 Extremely flammable aerosol.
H280 Contains gas under pressure: may explode if heated.
H304 May be fatal if swallowed and enters airways.

Prevention
P210 Keep away from heat, sparks, open flames and hot surfaces.-No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Pressurized container: Do not pierce or burn, even after use.

Response
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor or physician.
P331 Do NOT induce vomiting.
Storage
P410+P412+P403 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.
P405 Store locked up.
Disposal
P501 Dispose of contents and container in accordance with local and national regulations.

Other Hazards that do not Result in Classification: None

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	Substance Classification
Distillates (Petroleum), hydrotreated light	64742-47-8	30-60%	Flam. Liq. Cat 4 (H227) Asp. Tox. Cat 1 (H304)
Petroleum Base Oils	Mixture	10-<30%	Not Hazardous
Naptha(petroleum), hydrotreated heavy	64742-48-9	5-15%	Flam. Liq. Cat 3 (H226) Asp. Tox. Cat 1 (H304) STOT SE Cat 3 (H336)
Carbon Dioxide	124-38-9	<5%	Not Hazardous

See Section 16 for full text of GHS Classification and H phrases

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call a Poisons Information Center (phone 13 11 26 from anywhere in Australia or 0800 764 766 in New Zealand) immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.
Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.
Most Important Symptoms: Prolonged skin contact may cause drying of the skin. Inhalation may cause headache, dizziness, nausea and other symptoms of central nervous system depression. Accidental ingestion may cause gastrointestinal effects with irritation, nausea, vomiting, dizziness, coma and death. Aspiration into the lungs during ingestion or vomiting may cause lung damage.
Indication of Immediate Medical Attention and Special Treatment, if Needed: Immediate medical attention is required for ingestion.

5 – Fire Fighting Measures

Suitable Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Specific Hazards Arising from the Chemical: Extremely flammable aerosol. Contents under pressure. Keep away from ignition source and open fire. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. A vapor and air mixture can create an explosion hazard in confined spaces.
Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Use shielding to protect against bursting containers. Cool fire-exposed containers with water.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Eliminate all sources of ignition and ventilate area. Wear appropriate protective clothing (see Section 8).
Environmental Precautions: Report spills to authorities as required.
Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Intentional misuse by deliberately concentrating vapors and inhaling can be harmful or fatal. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Conditions for Safe Storage, including any incompatibilities: Store in a cool, dry ventilated area away from incompatible materials. Protect from physical damage. Do not store in direct sunlight, near open flames or above temperatures greater than 50°C.

8 – Exposure Controls /Personal Protection

Chemical	Occupational Exposure Limits	Biological Limit Value
Distillates (Petroleum), hydrotreated light	1200 mg/m3 TWA Supplier Recommended (total hydrocarbons)	None Established
Petroleum Base Oils	5 mg/m3 TWA AU OEL (as oil mist, refined mineral) 5 mg/m3 TWA, 10 mg/m3 STEL NZ OEL (as oil mist, mineral) 5 mg/m3 TWA ACGIH TLV (inhalable) (as mineral oil)	None Established
Naptha(petroleum), hydrotreated heavy	5 mg/m3 TWA AU OEL (as oil mist, mineral) 5 mg/m3 TWA, 10 mg/m3 STEL NZ OEL (as oil mist, mineral) 5 mg/m3 TWA ACGIH TLV (inhalable) (as mineral oil)	None Established
Carbon Dioxide	5000 ppm TWA, 30000 ppm STEL ACGIH TLV/AU/NZ OEL	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product
Appropriate Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray product away from your face.
Skin Protection: Avoid prolonged or repeated skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear an approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash hands after handling.
Other Protective Equipment: None required.

9 – Physical and Chemical Properties

Appearance and Odor:	Aerosol spray with a pleasant scent	Partition Coefficient of n-octanol/water:	Not determined
Odor Threshold:	Not determined	Auto-ignition temperature:	Not determined
pH:	Not determined	Decomposition Temperature:	Not determined
Melting/Freezing Point:	Not applicable	Viscosity:	Not determined
Boiling Point / Range:	150-205°C (302-401°F) Naptha(petroleum), hydrotreated heavy	Specific Heat Value:	Not determined
Flash Point:	69°C (156.2°F) (Concentrate)	Particle Size:	Not applicable
Evaporation Rate (Butyl Acetate = 1):	Not determined	VOC:	Not determined
Flammability (solid, gas):	Not applicable	Percent Volatile:	Not determined
Flammable Limits:	LEL 0.6% UEL 7.0%	Saturated Vapor Concentration:	Not determined
Vapor Pressure:	Not determined	Release of invisible flammable vapors and gases:	Yes
Vapor Density (air = 1):	Not determined	Aerosol Protection Level (NFPA 30B):	3
Relative Density (Water = 1):	Not determined	Solubility:	Insoluble in water

10 – Stability and Reactivity

Reactivity: Non-reactive
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Avoid extreme heat, flames and other sources of ignition. Avoid physical damage to aerosol can.
Incompatible Materials: Strong oxidizers and strong acids.
Hazardous Decomposition Products: Oxides of carbon and nitrogen, and unburned hydrocarbons.

11 – Toxicological Information

Health Hazards:
Ingestion: Swallowing is an unlikely route of exposure for an aerosol product. Swallowing large amounts may produce gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Eye Contact: Liquid sprayed into eyes may cause irritation. May cause redness, stinging, swelling, and tearing.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Inhalation: Mist or vapor can irritate the throat and lungs. High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Chronic Exposure: None known.
Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

Acute Toxicity Values:
Distillates (Petroleum), hydrotreated light: Oral rat LD50- >5000 mg/kg, Inhalation rat LC50->5 mg/L/4 hr, Skin rabbit LD50- >5000 mg/kg
Petroleum Base Oils: Acute Toxicity Estimates: Oral > 5,000 mg/kg, Dermal >2,000 mg/kg
Naptha(petroleum), hydrotreated heavy: Oral rat LD50- >5000 mg/kg, Skin rabbit LD50- >5000 mg/kg.

Skin Corrosion/Irritation: No data available for mixture. Based on the ingredients, this product is not expected to be a skin irritation.
Serious Eye Damage/Irritation: No data available for mixture. Based on the ingredients, this product is not expected to be an eye irritant.
Respiratory or Skin Sensitization: This product is not expected to cause sensitization.
Germ Cell Mutagenicity: None of the components have been found to be mutagenic.
Carcinogenicity: None of the components are listed as a carcinogen or suspected carcinogen by IARC, NTP, ACGIH, US OSHA or the EU CLP.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Specific Target Organ Toxicity:
Single Exposure: No data available.
Repeated Exposure: No data available.
Aspiration Hazard: Based on the ingredients, this product is expected to present an aspiration hazard and may be harmful if the contents are swallowed.

12 – Ecological Information

Ecotoxicity:
If applied to leaves may kill grasses and small plants by interfering with respiration and transpiration. This product is not toxic to fish but may coat gill structures resulting in suffocation.

Persistence and Degradability: No data available.
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
Other Adverse Effects: None Known

13 - Disposal Considerations

Safe Handling and Disposal Method: Aerosol containers should not be punctured, compacted in home trash compactors or incinerated.
Disposal of Contaminated Packaging: Empty containers may be disposed of through normal waste management options.
Environmental Regulations: Dispose of all waste product, absorbents, and other materials in accordance with applicable Federal, state and local regulations.

14 – Transportation Information

IMDG Shipping Name: Aerosols
IMDG Hazard Class: 2.1
UN Number: UN1950
Marine Pollutant: No

IATA Shipping Name: Aerosols, Flammable

IATA Hazard Class: 2.1
UN Number: UN1950

ADG Shipping Name: Aerosols
ADG Hazard Class: 2.1
UN Number: UN1950
Hazchem (Emergency Action) Code: 2YE

Special Precautions for User: WD-40 Company does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

Montreal Protocol (Ozone Depleting Substances): None present
The Stockholm Convention (Persistent Organic Pollutants): None present
The Rotterdam Convention (Prior Informed Consent): Not applicable
Basel Convention: Not applicable
International Convention for the Prevention of Pollution from Ships (MARPOL): Not applicable
Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP): Not applicable

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory.

New Zealand:
HSNO Approval Number: HSR002515
Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Classified as Dangerous Good for transport purposes.

HSNO Hazard Classes: 2.1.2A, 6.1E

New Zealand Inventory: All the ingredients comply with the HSNO regulations.

16 – Other Information

REVISION DATE: 19 September 2019 SUPERSEDES: 5 July 2018

Prepared By: Industrial Health & Safety Consultants, Inc.

Full Text of GHS Classification and H Phrases from Section 3:
Asp. Tox. Cat 1 Aspiration Toxicity Category 1
Flam. Liq. Cat 3 Flammable Liquid Category 3
Flam. Liq. Cat 4 Flammable Liquid Category 4
STOT SE Cat 3 Specific Target Organ Toxicity Single Exposure Category 3
H226 Flammable liquid and vapor.
H227 Combustible liquid.
H304 May be fatal if swallowed and enters airways.
H336 May cause drowsiness or dizziness.

List of Abbreviations or Acronyms:
ACGIH American Conference of Industrial Hygienists
ADG Australian Dangerous Goods
AICS Australian Inventory of Chemical Substances
AU Australia
EC Effective Concentration
EU European Union

GHS Globally Harmonized System of Classification and Labelling of Chemicals
HSNO Hazardous Substances and New Organisms
IARC International Agency of Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
LC Lethal Concentration
LD Lethal Dosage
LEL Lower Explosive Limit
NTP National Toxicology Program
NZ New Zealand
OEL Occupational Exposure Limits
US OSHA United States Occupational Safety and Health Administration
PEL Permissible Exposure Limit
SDS Safety Data Sheet
STEL Short Term Exposure Limit
TWA Time-Weighted Average
UEL Upper Explosive Limit
VOC Volatile Organic Compounds
WHS Work Health and Safety

REVIEWED BY: *I. Kowalski* TITLE: Manager Regulatory Affairs

2042400/ No.0169303

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Identifier	**ACETONE**
Other Names	2-Propanone, Dimethyl Ketone
Manufacturer's Product Code	16255
Recommended Use	Solvent

Details of Supplier/Manufacturer

Company:	Recochem Inc. ABN: 69 010 485 999
Address:	1809 Lytton Road, Lytton, Queensland 4178
Phone:	(07) 3308 5200 Fax: (07) 3308 5201
Website:	www.recochem.com.au

Emergency Telephone Numbers

Business Hours:	(07) 3308 5200
After Hours:	1300 131 001
Poisons Information:	Australia: 13 11 26 New Zealand: 0800 764 766

SECTION 2 HAZARDS IDENTIFICATION

Hazardous chemical	*according to classification by Safe Work Australia*
Dangerous goods	*according to the Australian Code for the Transport of Dangerous Goods by Road and Rail*

Signal Word	**DANGER**

GHS Classification	Pictogram	Hazard statement
Flammable Liquids, Category 2	 FLAME	H225 Highly flammable liquid and vapour
Serious Eye Damage/Irritation, Category 2A	 EXCLAMATION MARK	H319 Causes serious eye irritation
Specific Target Organ Toxicity (Single exposure), Category 3		H336 May cause drowsiness or dizziness
Non-GHS (Safe Work Australia)		AUH066 Repeated exposure may cause skin dryness or cracking

Precautionary statements:

GENERAL	
P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children
P103	Read label before use
PREVENTATIVE	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilation/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing mist/vapours/spray
P264	Wash thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/eye protection/face protection
RESPONSE	
P303 + P361 + P353	IF ON SKIN (or hair): Take off contaminated clothing and wash before reuse. Rinse skin with water/shower
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P337 + P313	If eye irritation persists: Get medical advice/attention
P370 + P378	In case of fire: Use foam/water spray/fog for extinction
STORAGE	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed
P403 + P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
DISPOSAL	
P501	Dispose of contents/container in accordance with local regulations

SECTION 3 COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients Names and Proportions

Chemical Entity	CAS Number	Proportion (%)
Acetone	67-64-1	> 99

SECTION 4 FIRST AID MEASURES

Description of necessary first aid measures

Inhalation:	Keep victim calm and remove to fresh air if safe to do so. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
Skin Contact:	If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water and follow by washing with soap if available. Transport to nearest medical facility for additional treatment if necessary.
Eye Contact:	If in eyes, hold eyes open, flood with water for at least 15 minutes. Seek immediate medical assistance.
Ingestion:	If swallowed, do NOT induce vomiting. Transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Symptoms caused by exposure

Inhalation:	Breathing of high vapour concentrations may cause central nervous system depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continuous inhalation may result in unconsciousness and death.
Skin:	May include burning sensation and/or a dried/cracked appearance.
Eye:	May include burning sensation, redness, swelling and/or blurred vision.
Ingestion:	May include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath and/or fever

Medical attention and special treatment

Treat symptomatically.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing equipment

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Specific hazards arising from the chemical

A highly flammable liquid. Carbon monoxide and/or carbon dioxide may be evolved. May form flammable vapour mixture with air. Avoid all ignition sources. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Heating can cause expansion or decomposition leading to violent rupture of containers. Containers exposed to intense heat from fires should be cooled with large quantities of water.

Special protective equipment and precautions for fire fighters

Wear full protective clothing and self-contained breathing apparatus. Hazchem code •2YE.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid contact with spilled or released material. Shut off leaks, if possible without personal risks. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Remove all sources of ignition in the surrounding area. Take precautionary measure against static discharge. Ensure electrical continuity by bonding and earthing all equipment.

Environmental precautions

Use appropriate containment to avoid environmental contamination. Prevent from spreading and entering waterway using sand, earth or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Ventilate contaminated area thoroughly.

Methods and materials for containment and cleaning up

For small spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

For larger spills (> 1 drum), transfer by means such as a vacuum truck to a salvage tank for recovery or disposal. Do not flush residues with water. Retain as contaminated waste. Allow any residues to evaporate or use an appropriate absorbent material and dispose of safely.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Highly flammable product. Avoid breathing vapours. Handle and open containers with care in a well-ventilated area. Ensure that the workplace is ventilated such that the Occupational Exposure limit is not exceeded. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Do not eat, drink or smoke in contaminated areas. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by earthing all equipment. Flameproof equipment necessary in area where chemical is being used. Vapours may accumulate in low or confined areas.

Conditions for safe storage, including any incompatibilities

Bulk storage tanks should be bunded. Store in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Do not store near strong oxidants.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control measures

From National Occupational Health & Safety Commission (NOHSC) Worksafe Australia - Acetone: 1185mg/m^3 (500ppm) TWA (8hr), STEL 2375mg/m^3 (1000ppm)

Biological monitoring

No biological limit allocated.

Engineering controls

Ensure that adequate ventilation is provided. Avoid generating and inhaling mists and vapours. Keep containers closed when not in use.

Individual protection measures

Eye and face protection:	Wear safety goggles.
Skin protection:	Use solvent resistant gloves, nitrile for longer term protection or PVC and neoprene for incidental splashes.
Respiratory protection:	If work practices do not maintain airborne level below the exposure standard, use appropriate respiratory protection equipment. When using respirators, select an appropriate combination of mask and filter. Select a filter for organic gases and vapours (boiling point > 65°C). Respirators should comply with AS1716 or an equivalent approved by a state/territory authority.
Thermal hazards:	Not applicable.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear colourless liquid
Odour:	Characteristic
Odour threshold (ppm):	Data not available
pH:	Not applicable
Melting point/freezing point (°C):	-95
Initial boiling point and boiling range (°C):	56
Flash point (°C):	-18 (closed cup)
Evaporation rate (Butyl acetate = 1):	5.6
Flammability:	Highly flammable
Upper/lower flammability or explosive limits (%):	2.15 - 13.0
Vapour pressure (mbar @ 20°C):	186
Vapour density (air = 1):	2
Density (g/ml @ 20°C):	0.79
Solubility:	Miscible with water

Partition coefficient: n-octanol/water:	0.2
Auto-ignition temperature (°C):	465
Decomposition temperature (°C):	Data not available
Kinematic viscosity (mm^2/s @ 20°C):	Data not available

SECTION 10 STABILITY AND REACTIVITY

Reactivity
Stable under normal conditions of use.

Chemical stability
Stable under normal conditions of use.

Possibility of hazardous reactions
Stable under normal conditions of use.

Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials
Strong oxidising agents, reducing agents, acids, alkalis.

Hazardous decomposition products
Burning can produce carbon monoxide and/or carbon dioxide.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:	Low toxicity - LD50 Oral (rat) > 2000 mg/kg LC50 Inhalation (rat, 4h) > 20 mg/l
Skin corrosion/irritation:	Skin - rabbit, Result – Irritating to skin (48h). May cause skin irritation. Will have a degreasing effect on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis
Serious eye damage/irritation:	Moderate to severe eye irritant. High concentrations of 500-1000ppm are irritating to eyes
Respiratory or skin sensitisation:	Not expected to be a sensitiser
Germ cell mutagenicity:	Not expected to be mutagenic
Carcinogenicity:	Not expected to be carcinogenic
Reproductive toxicity:	Not expected to impair reproduction
Specific Target Organ Toxicity (STOT) – single exposure:	May cause drowsiness or dizziness
Specific Target Organ Toxicity (STOT) – repeated exposure:	Central nervous system: repeated exposure affects the nervous system. Effects seen at high doses only
Aspiration hazard:	Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity:

Fish –	Low toxicity: LC/EC/IC50 > 1000mg/l
Aquatic invertebrate –	Low toxicity: LC/EC/IC50 > 1000mg/l
Algae –	Low toxicity: LC/EC/IC50 > 1000mg/l
Microorganisms –	Low toxicity: LC/EC/IC50 > 1000mg/l

Chronic toxicity:

Fish –	Data not available
Aquatic invertebrate –	Data not available
Algae –	Data not available
Microorganisms –	Data not available

Persistence and degradability

Readily biodegradable.

Bioaccumulative potential

Not expected to bioaccumulate significantly.

Mobility in soil

Miscible with water. If product enters soil, it will be mobile and may contaminate groundwater.

Other adverse effects

Data not available.

SECTION 13 DISPOSAL CONSIDERATIONS

Ensure waste disposal conforms to local waste disposal regulations.

SECTION 14 TRANSPORT INFORMATION

UN number:	1090
Proper shipping name:	Acetone
Australian Dangerous Goods class:	3
Australian Dangerous Goods packing group:	II
Hazchem code:	•2YE

SECTION 15 REGULATORY INFORMATION

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP), Poisons Schedule:	5
Australian Inventory of Chemical Substances (AICS):	Listed
Dangerous Goods Initial Emergency Response Guide (SAA/SNZ HB76):	14

SECTION 16 OTHER INFORMATION

Date of preparation:	22/05/2017
Revision number:	6
Changes in this revision:	Corrected typos

This SDS summarises product safety information at the date of issue, to the best of our knowledge, as a general guide. Recochem cannot anticipate or control the conditions under which the product is used, so prior to usage each user must assess and control the risks associated with their use of the product. Users should also consult the relevant legislation governing the use and storage of this product. We make no warranties, express or implied, and assume no liability in connection with any use of information contained within this document. If clarification or further information is needed, the user should contact Recochem on (07) 3308 5200.

Noble Works Australia Pty Ltd Disconnection/Isolation of Services Status Report Form

Date:	**Client:**	**Project:**

- Before demolition starts it is important that all services and utilities are disconnected or isolated. This includes but is not limited to gas, water, drainage, electricity, phone and internet. The safety of our workers (and others) is paramount, additionally there is the potential interruptions to neighboring properties or damage to the infrastructure in general.
- The completion of this form is to be undertaken by the relevant competent and authorized person(s).
- **Service locations are to be clearly identified along with their status (live, isolated or removed) in accoradance with AS/NZS 3012**
- This document must be reviewed and signed by trades prior to commencement of works by Noble Works Australia Pty Ltd.

Electrical

Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.

Electrical Services Trade Sign Off

Company	Name	Signature	Date

Mechanical

Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.

Mechanical Services Trade Sign Off

Company	Name	Signature	Date

Hydraulic/Gas			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Hydraulic/Gas Services Trade Sign Off			
Company	Name	Signature	Date

Fire			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Fire Services Trade Sign Off			
Company	Name	Signature	Date

Water/Drainage			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Water/Drainage Services Trade Sign Off			
Company	Name	Signature	Date

Telecommunications (phone and internet)			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Services Trade Sign Off			
Company	Name	Signature	Date

Other (Specify)			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Services Trade Sign Off			
Company	Name	Signature	Date

Other (Specify)			
Reference relevant drawings/sketches, provide description of existing and or terminated/decommissioned services and location of isolation points.			
Services Trade Sign Off			
Company	Name	Signature	Date