

# Concrete Walkways Trackside And In Tunnels

Issue date: 19/10/10  
Review date: 14/06/13

<b>SWMS number:</b> SMS-06-SW-0970	<b>SWMS Name:</b> Concrete Walkways Trackside And In Tunnels			<b>SWMS Team:</b> Civil Construction Review Team
<b>Custodian (Position):</b> Services Manager Civil	<b>Assumptions:</b> Site specific risks are addressed and assessed in pre- work briefing			
<b>Approver (Position):</b> Civil Electrical Works Manager Infrastructure Renewals	<b>Plant/Equipment/Tools:</b> <ul style="list-style-type: none"> <li>Crane, Lifting Equipment, Excavator / Hi-Rail Excavator, Backhoe, Bobcat, Hydraulic Equipment, Dumper, Concrete Boom, Concrete Truck, Trolley, Hi-rail Truck, Hi-rail Agitator</li> <li>Barricades, Demarcation Fencing, Signs, Plywood, Safety Tape, Markers, Shoring, Benching</li> <li>Straps, Ties, Dunnage, Pallets, Formwork, Construction Equipment, Pipe Glue, Curing compound, bond breaker, sealants, Concrete, Reinforcement, Ballast, Power Tools, Oxy-Acetylene Equipment, Rigging Tools, Podger, Pelican Pick</li> <li>No-Spill Fuel Cans, Spill Response Kit, Watercart, Fire Extinguisher, Silt Fencing, Hay Bales, Bungs, Sediment Cloth</li> <li>(When in Tunnels) Oxygen Monitor, Plant fitted with Catalytic Converters, Electric Fans</li> <li>Emergency Evacuation Air Horn</li> <li>Lighting Towers, Light Stands</li> <li>Generator</li> <li>Demo Saw</li> </ul>	<b>Records/Reporting:</b> <ul style="list-style-type: none"> <li>Worksite Protection Plan</li> <li>Pre-work Brief</li> <li>Electrical Test Tags</li> <li>Sit Specific Management Plan</li> <li>Daily Plant Checklist</li> <li>Hot Work Permit (During Total Fire Ban)</li> <li>Fire Brigade</li> <li>Environmental Protection Plan</li> <li>Services searches</li> <li>Confined Spaces Checklist</li> <li>Electrical Permits</li> <li>Hazardous Substance Register</li> <li>MSDS</li> <li>Excavation Plans</li> <li>Worksite Traffic Control Plans</li> </ul>	<b>Permits/licences required:</b> <ul style="list-style-type: none"> <li>Confined Spaces Certificate</li> <li>Electrical Permit Holder</li> <li>Dogman Certificate</li> <li>Crane / Excavator / Hi-Rail Excavator / Backhoe / Bobcat / Dumper / Concrete Boom Operator Certificate</li> <li>Traffic Control</li> <li>Hi-rail Certificate</li> <li>P.O</li> </ul>	<b>Content reviewed by</b> <b>Technical expert (SME) and RailCorp safety professional</b> (position including Div/Group) Services Manager Civil and Safety facilitator, Safety Support Services Division.
<b>Applicable Standards, Codes of Practice and guidance:</b> <ul style="list-style-type: none"> <li>OH&amp;S Act 2000</li> <li>OH&amp;S Regulation 2001</li> <li>Rail Safety Regulation 2003</li> <li>RailCorp Network Rules &amp; Procedures</li> <li>RailCorp Safety Management System.</li> <li>MSDS for all chemicals and hazardous Substances used on site</li> <li>AS/NZS 2865:2001 Safe Working in a Confined Space</li> <li>HB 213:2003 Guidelines for Safe Working in a Confined Space</li> <li>OH&amp;S REG. 2001 Part 4.3 DIV. 5 CH. 50 TO 55 / DIV. 9 CH. 66 TO 78</li> <li>Working near Overhead Power Lines</li> <li>National Code of Practice for Manual Handling [NOHSC:2005]</li> <li>AS 2550.5-2002 Cranes, hoists and winches - Safe use - Mobile cranes</li> <li>EC14 – Guide to Electrical Workers' Safety Equipment</li> <li>WorkCover NSW Plant Guide</li> <li>WorkCover Code of Practice Excavation 2000</li> <li>AS 1674.1 – Safety in welding processes</li> </ul>	<b>Inspection requirements</b>	<b>Service schedule:</b> Nil	<b>Training/Qualifications required:</b> <ul style="list-style-type: none"> <li>Construction Industry Induction</li> <li>RISI (Rail Industry Safety Induction)</li> </ul>	<b>PPE required:</b> <ul style="list-style-type: none"> <li>Safety Boots</li> <li>High Visibility Vests</li> <li>Hardhats</li> <li>Protective Clothing</li> <li>Safety Glasses / Goggles</li> </ul> <p>And as specified below.</p> <ul style="list-style-type: none"> <li>Ear Muffs / Ear Plugs</li> <li>Welding Spats / Goggles / Face Shields</li> <li>Gloves</li> <li>During all Site Works a FIRST AIDER MUST be Present</li> </ul>

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1	Delivery Of Materials	Traffic/ Pedestrians	B+	Provide traffic control	C+	Team leaders work group leaders RTA ticketed traffic controllers	Traffic management plan workplace Work-on/near roads sms-06-gd-0372
		Contact With Live O/H Wiring Or Other Services	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Struck By Load	B+	Keep clear of suspended loads, reversing beepers. Ticketed operators. Exercise due care	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Failure Of Lifting Equipment From Overloading	B+	Competent operators to assess loads carefully prior to lifting equipment to be properly maintained and marked	C+	Workcover Ticketed Operator And Dogman SMS-11-GD-0243	SSMP, Pre work Briefing SMS-06-FM-0163 Lifting Equipment SMS-16-FM-0089 Plant SMS-06-PR-0225
		Plant Roll-Over	B+	Ensure that outriggers or stabilisers in position prior to lifting	C-	Team Leaders Work Group Leaders All Staff Ticketed Operator	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Unstable Loads	B+	Ensure materials are secured during transit. Don't exceed safe working load of plant.	C+	Workcover Ticketed Operator SMS-11-GD-0243 Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225

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2	Track Access	Contact With Live O/H Wiring Or Other Services	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Oil/Fuel Leakage Or Loss	C-	Plant to be inspected daily. Use correct methods for filling machinery. Maintain spill response kits on-site.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Environmental Protection Plan Plant SMS-06-PR-0225
3	Tunnel Access	Staff Working Tunnel.	B+	Complete form sms-06-fm-0038. All staff to wear the required PPE. Monitoring of lower explosive limit and safe oxygen levels.	C+	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Confined Space Checklist SMS-06-FM-0038
		Contact With Live O/H Wires	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268
		Fumes / Contaminated Atmosphere	B-	Atmospheric monitoring shall be conducted while staff are working to ensure that: a continuous supply of clean air containing not less than 19.5% oxygen and not more than 23.5% oxygen is available. The velocity of the air flow is not less than 10 metres per minute. Flammable or combustible contaminants do not exceed 5% of the lower explosive limit (LEL). The exposure limit for carbon monoxide does not exceed 30ppm.	D	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Confined Space Checklist SMS-06-FM-0038
4	Mark Out	Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001

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5	Set-Up Of Machinery	Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Plant Roll-Over	B+	Plant fitted with roll-over-protection.	C-	Ticketed Operator Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With Live O/H Wires	A	Maintain clearances at all times. Isolate power	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268
		Damage To Rail Infrastructure	B+	Vigilance/cover to protect. Report any damage.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
		Oil/Fuel Spillage	C-	Plant to be inspected daily. Use correct methods for filling machinery. Spill response kits on-site.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 ENVIRONMENTAL PROTECTION PLAN

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6	Plant And Machinery Working In Tunnel.	Fumes / Contaminated Atmosphere	B-	Atmospheric monitoring shall be conducted while staff are working to ensure that: a continuous supply of clean air containing not less than 19.5% oxygen and not more than 23.5% oxygen is available. The velocity of the air flow is not less than 10 metres per minute. Flammable or combustible contaminants do not exceed 5% of the lower explosive limit (LEL). The exposure limit for carbon monoxide does not exceed 30ppm.	D	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Confined Space Checklist SMS-06-FM-0038
		Plant And Machinery Utilised In Tunnel.	B+	Plant and machinery must be fitted with catalytic converters. <u>No petrol driven</u> engines to be used in tunnel. LPG bottles are to be changed if required outside of the restricted space, all mobile plant and machinery shall have a flashing or rotating light visible from the front and rear of the plant and machinery.	C+	Team Leaders Work Group Leaders All Staff, Ticketed Operator, Competent Persons	Plant SMS-06-PR-0225 Confined Spaces SMS-06-GD-0035 Confined Space Checklist SMS-06-FM-0038
		Staff Working Tunnel.	B+	Complete form SMS-06-FM-0038. All staff to wear the required PPE. Monitoring of lower explosive limit and safe oxygen levels.	C+	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Confined Space Checklist SMS-06-FM-0038
		Plant Or Machinery Hit By Train	B+	Operators to be made aware of extent of safe-working area	C+	Worksite Protection Officer Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225 Network Rules and Procedures.
		Personnel Struck By Machinery	B+	Define work areas, reversing beepers. Ticketed operators. exercise due care	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Hearing Damage From Plant/Noise Pollution	C+	Use hydraulic equipment. Have silencers fitted to machinery. use PPE use ear protection in close proximity to machine	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Dust/Air Pollution	B-	Keep clear of work. Wear type 1 respirators. Water down material.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Hazardous Substances SMS-06-GD-0199

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		Oil/Fuel Spillage	C-	Plant to be inspected daily. Use correct methods for filling machinery. Maintain spill response kits on-site.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 ENVIRONMENTAL PROTECTION PLAN Plant SMS-06-PR-0225
		Damage To Rail Infrastructure	B+	Vigilance/cover to protect. Report any damage.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
		Person Collapsed In Tunnel. Access And Egress For Emergency Services.	B+	Notify emergency services of the incident prior to commencing rescue. If the collapsed person is not breathing, commence cardio pulmonary resuscitation (CPR). Make the collapsed person comfortable and wait for emergency services.	C+	Team Leaders Work Group Leaders All Staff, First Aid Officer.	Confined Spaces SMS-06-GD-0035 Site Incident Response Procedures SMS-15-PR-0245
		Emergency At Worksite. Evacuation Procedure - Staff Confused And Disoriented.	B+	The person in charge is to sound one long blast on the air horn. This indicates there is a problem and that all staff have to leave the worksite. If any staff, are not accounted for the person in charge must activate a search and rescue.	C+	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Site Incident Response Procedures SMS-15-PR-0245
		Strike Personnel Or Equipment Due To Poor Visibility	B+	Turn lights "full-on" in tunnel. Additional / artificial lighting to be used if required.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163

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7	Excavation	Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With Live O/H Wires	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268
		Contact With Services	B+	Locate services prior to starting work mark services with paint, use qualified plant operators, hand digging in close proximity to services under supervision by appropriate services representative. Care to be exercised. Service searches to be on site and signed off.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225 Electrical Equipment SMS-06-GD-0268
		Damage To Rail Infrastructure	B+	Vigilance/cover to protect	C+	Competent Person Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
		Plant Roll-Over/Collapse	B+	SWL of machinery not to be exceeded	C-	Ticketed Operator Team Leaders Work Group Leaders All Staff	Plant SMS-06-PR-0225
		Head Injuries around Machines	C-	Briefing. Hard hats must be worn. Keep clear if machines operating, signage	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Excavation Collapse	B+	Shoring, benching, keep plant and employees clear of edges. Barricade / Demarcation Fence.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378
		Personal Injuries	C-	Briefing additional PPE as necessary	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163

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8	Stockpiling Materials	Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Machine / Personnel Hit By Train	B+	Operators to be made aware of extent of safe-working area	C+	Worksite Protection Officer Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225 Network Rules and Procedures.
		Contact With Live O/H Wires (High Voltage / Other Services )	A	Maintain clearances at all times. Isolate power	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268
		Dirt Tracking Onto External Roads	C-	Bobcats with sweepers to clean road. Brooms, Shovels	D	Team Leaders Work Group Leaders All Staff	Environmental Protection Plan
		Runoff From Stock Piles	C-	Sediment traps placed around perimeter	D	Team Leaders Work Group Leaders All Staff	Environmental Protection Plan
		Residual Dirt On External Roads Flowing Into Stormwater	C-	Place hay bale around inlet	D	Team Leaders Work Group Leaders All Staff	Environmental Protection Plan
9	Materials Transfer	Personnel Struck by Load	B+	Define work areas, reversing beepers. Ticketed operators. exercise due care	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Dust	B-	Implement exclusion zone wear dust mask	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Hazardous Substances SMS-06-GD-0199
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001

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		Unstable Loads	B+	Ensure materials are secured during transit. Don't exceed safe working load of plant.	C+	Ticketed Operator Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Runaway Trolley	C-	Trolley to be fitted with braking system/drawbar to dumper.	D	Ticketed Operator Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Site Plan In SSMP

The Following Precautions Are To Be Undertaken For When Using Hot Works As In Activity 10 During Total Fire Bans (Tunnels) :

- An Hot Works Permit Must Be Issued Before Work Tasks Are To Be Performed
- The Welder Or Other Person In Control Of The Worksite Must Take Reasonable Care To Inspect The Workplace To Identify Potential Fire Hazards
  - All Fire Hazards Are To Be Removed Prior To Commencing Welding Tasks
- Fire Fighting Equipment Must Be On Hand At The Worksite E.G. Watercart, Knapsacks, Fire Extinguishers
  - (Hot Works In Progress) Warning Signs Are To Be Placed At Appropriate Locations



WARNING

Hot Work Sms-06-Pr-0329

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10	Preparation Works/ Relocation Of Services	Contaminated Atmosphere	B+	Atmospheric monitoring shall be conducted while staff are working to ensure that: a continuous supply of clean air containing not less than 19.5% oxygen and not more than 23.5% oxygen is available. The velocity of the air flow is not less than 10 metres per minute. Flammable or combustible contaminants do not exceed 5% of the lower explosive limit (LEL). The exposure limit for carbon monoxide does not exceed 30ppm.	C+	Team Leaders Work Group Leaders All Staff	Confined Spaces SMS-06-GD-0035 Site Incident Response Procedures SMS-15-PR-0245
		Objects In Eyes	C-	Implement exclusion zone wear eye protection	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Struck By Flying, Falling And/Or Moving Objects	B-	Hard hats to be worn at all times implement exclusion zone for workers not involved in tasks	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Use Of Hazardous / Non-Hazardous Materials E.G.: Pipe Glue, Sealants, Concrete Etc.	B-	Refer to MSDS and/or manufacturers instructions before using. Avoid spills. Use PPE. Identification and separation of flammable materials. Use in ventilated areas.	C-	Team Leader Work Group Leader Ticketed Operator	SSMP, Pre work Briefing SMS-06-FM-0163 MSDS Manual Handling SMS-06-GD-0001 AS4839 AS2030
		Electrocution. Use Of Power Tools	B+	All electrical equipment to be tagged /tested, earth leakage units to be used with all tools. Equipment to be fitted with effective safe guards. Correct use of PPE	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Electrical Equipment SMS-06-GD-0268
		Cuts, Abrasions	C-	Use correct techniques wear approved riggers gloves	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Fire From Oxy-Acetylene Cutting	C-	Hot work permit if required. Water cart, or fire extinguishers on site wet down work area	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Hot Work SMS-06-PR-0329
		Burns From Cutting Equipment And Hot Work	C+	Wear gloves long sleeve shirts, long pants , spats, goggles or face shield as appropriate	D	Ticketed Cutter/ Welder Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323

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		Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
11	Placement Of Reinforcement	Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Crushed Fingers	B+	Keep hands clear of joining steel when positioning	C+	Competent Person Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
12	Construct Formwork	Electrocution. Use Of Power Tools	B+	All electrical equipment to be tagged /tested, earth leakage protection or double insulated generators to be used. Follow SWI.	C-	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Electrical Equipment SMS-06-GD-0268
		Object In Eye	C-	Protective eye-wear must be worn	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323

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Number	Step	Hazard Or Human Error (Safety/Environmental Hazards Identified, Including Physical Environment, Human Errors, Plant And Equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
		Use Of Hazardous / Non-Hazardous Materials E.G.: Curing Compound, Bond Breaker, Sealants, Etc.	B-	Refer to MSDS and/or manufacturers instructions before using. Avoid spills. Use PPE. Identification and separation of flammable materials. Use in ventilated areas	C-	Team Leader Work Group Leader Ticketed Operator	SSMP, Pre work Briefing SMS-06-FM-0163 MSDS Manual Handling SMS-06-GD-0001 AS4839 AS2030
13	Concrete Truck Accessing Site	Personnel / Public / traffic, Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	All Staff Team Leader Work Group Leader, RTA ticketed traffic controllers	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With High Voltage Power.	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
14	Pour Concrete	Concrete	C-	Protective clothing. Gloves	D	Competent Person	SSMP, Pre work Briefing SMS-06-FM-0163 MSDS
		Skin Irritations	C-	Wear gloves long sleeve shirts	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 MSDS
		Concrete In Eyes	C-	Wear glasses/goggles. First aid	D	Team Leaders Work Group Leaders All Staff	Pre work Briefing SMS-06-FM-0163 MSDS PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Struck By Boom / Concrete Truck	B+	Be aware, reversing beepers. Ticketed operators.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225

# Concrete Walkways Trackside And In Tunnels

Issue date: 19/10/10  
Review date: 14/06/13

Number	Step	Hazard Or Human Error (Safety/Environmental Hazards Identified, Including Physical Environment, Human Errors, Plant And Equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
16	Strip Formwork	Electric Shock	B+	All electrical equipment to be tagged /tested, earth leakage units to be used with all tools. Equipment to be fitted with effective safe guards. Correct use of PPE	C-	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Electrical Equipment SMS-06-GD-0268
		Cuts, Scratches And Abrasions	C-	Be Vigilant stripping and de-nailing formwork	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Unstable Loads	B+	Formwork components to be stacked securely to prevent collapse.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Manual Handling Injuries	B-	Correct manual handling procedures. "back-safe" training. Plant to move heavy and/or bulky items. As per Risk assessment.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
17	Reinstatement Of Ballast Profile	Dust	B-	wear dust mask, Wet down Ballast	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Hazardous Substances SMS-06-GD-0199
		Contact With Services	B+	Locate services prior to starting work. Service searches to be on site and signed off mark and/or isolate services as appropriate maintain regulated clearances on electrical services	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225 Electrical Equipment SMS-06-GD-0268
		Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Struck By Flying Object	C-	Protective eye-wear must be worn	D	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		High Ballast Shoulder	C-	Keep shoulder ballast below head of rail	D	Competent Person Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163
		Damage To Rail Infrastructure	B+	Be aware. Report any damage/disturbance.	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Electrical Equipment SMS-06-GD-0268

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Issue date: 19/10/10  
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Number	Step	Hazard Or Human Error (Safety/Environmental Hazards Identified, Including Physical Environment, Human Errors, Plant And Equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
18	Demobilise Site And Remove Access Ramp	Personnel Struck By Machinery	B+	Implement restriction zones (6m). Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion. Competent Operator	C+	Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With Live O/H Wiring Or Other Services	A	Maintain regulated clearances on wires at all times. Isolate power when in side Safe approach distance (SAD).	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	Electrical Equipment SMS-06-GD-0268
		Contact With Services	B+	Locate services prior to starting work. Service searches to be on site and signed off mark and/or isolate services as appropriate maintain regulated clearances on electrical services	C+	Qualified Permit Holder QEL29/MEI61 Team Leaders Work Group Leaders All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225 Electrical Equipment SMS-06-GD-0268

## **Concrete Walkways Trackside And In Tunnels**

Issue date: 19/10/10  
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**NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS**

# Concrete Walkways Trackside And In Tunnels

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RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency						
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year
		Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations
		Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities
			F1	F2	F3	F4	F5	F6
Consequence			Incredible	Improbable	Remote	Occasional	Probable	Frequent
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-

Definition for Use - Regional & Local level (Workplace)							
Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.							
As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.							
There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive likelihood in the workplace. Choose the most appropriate.							
To score the risk, follow the steps:							
1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matrices).							
2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)							
3. Score the risk using the combination of likelihood and consequence ranking.							
Note: Where there are a range of credible consequences which may lead to a different level of risks and/or where the controls may be different. It may be useful to score the risk more than once.							