

# Running cables through dropped ceilings & raised floors

Issue date:12/06/09  
Review date: 11/06/12

<b>SWMS number:</b> SMS-06-SW-1358	<b>SWMS Name:</b> Running cables through dropped ceilings & raised floors			<b>SWMS Team:</b> <ul style="list-style-type: none"> <li>Renato Dovecer - Safety Coordinator</li> <li>Lou Muratore – Supervisor Comms Field City Offices</li> <li>Brett Laughton - Technical Operations Officer</li> <li>Steve Fox – Technical Operations Officer</li> <li>Louise Tosoetto – Safety Coordinator</li> </ul>
<b>Custodian (Position):</b> Safety Coordinator	<b>Assumptions:</b> <ol style="list-style-type: none"> <li>Applicable to all Communications &amp; Control Systems division staff.</li> <li>Applicable to the following types of cables:           <ul style="list-style-type: none"> <li>Communications cables</li> <li>Co-axial</li> <li>Low voltage</li> </ul> </li> </ol>			<b>Content reviewed by Technical expert (SME) and RailCorp safety professional</b> (position including Div/Group) <ul style="list-style-type: none"> <li>Supervisor Comms Field City Offices – C&amp;CS, Asset Management</li> <li>Safety Coordinator – C&amp;CS, Asset Management</li> </ul>
<b>Approving Authority (Position):</b> Manager Communications Field Resources	<b>Plant/Equipment/Tools:</b> <ul style="list-style-type: none"> <li>Hand tools</li> <li>Dual suction lifter</li> <li>Ladder</li> </ul>	<b>Records/Reporting:</b> <ul style="list-style-type: none"> <li>Cable Installations Risk Assessment</li> </ul>	<b>Permits/licences required:</b> N/A	<b>PPE required:</b> <ul style="list-style-type: none"> <li>Safety Boots</li> <li>High Visibility Vest</li> <li>Safety Glasses</li> <li>Hard Hat</li> <li>Protective Gloves (Cut Resistant or Leather)</li> </ul>
<b>Applicable Standards, Codes of Practice and guidance:</b> <ul style="list-style-type: none"> <li>OHS Act 2000</li> <li>OHS Regulation 2001</li> <li>Rail Safety Act 2002</li> <li>AS/ACIF S008 Requirements for Authorised Cabling Products</li> <li>AS/ACIF S009 Installation Requirements for Customer Cabling (Wiring Rules)</li> <li>AS 3084 Telecommunications installations – Telecommunications pathway and spaces for commercial buildings</li> <li>Manual Handling Resource WorkCover NSW 2004</li> <li>WorkCover Code of Practice - Electrical practices for construction work</li> <li>AS/NZS 1892.5: 2000 Portable ladders - Selection, safe use and care</li> <li>AS/NZS 3000 Electrical Installations (known as the Australian/New Zealand wiring rules)</li> </ul>	<b>Inspection requirements</b> <ul style="list-style-type: none"> <li>Ladder – Inspected every 6 months.</li> <li>Maintain inspection and test records in accordance with SMS-16-SR-0057 Inspection and Testing and SMS-05-SR-0027 Records Management.</li> </ul>	<b>Service schedule:</b> N/A	<b>Training/Qualifications required:</b> <ul style="list-style-type: none"> <li>Rail Industry Safety Induction (RISI)</li> <li>OHS Construction Induction Training Card</li> </ul>	<b>MIMS or METRE Ref:</b> N/A

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1	Check location	Exposure to Hazardous Materials (eg. Asbestos, lead dust, etc)	B+	Check Hazardous Materials Register If hazardous materials are present do not proceed with work and notify your Line Manager.	C-	Line Manager	SMS-06-GD-0228 Hazardous Materials SMS-06-GD-0223 Hazardous Rail Corridor Locations
		Contact with hidden services/cables (eg. electrical cables, gas pipes, water pipes & water sprinkler systems)	B+	Contact local electrician/plumber to gain understanding of service locations. Conduct cable/service search and mark out path. Use appropriate detectors to establish the presence of all services and mark out location. Use insulated tools. If not sure do not start job.	C-	Line Manager	SMS-06-GD-0268 Working Around Electrical Equipment SMS-06-SW-0269 Electrical Shock Protocol
		Exposure to gases (if fire sensors are disturbed).	C+	De-activate fire alarm system. If in critical infrastructure or stations, this must be done in consultation with site controller. A permit is required in underground stations.	D	Line Manager	SMS-06-FM-0899 Hot Work Permit and Fire Systems Request Form
2	Remove ceiling or floor tiles	Fall from heights <u>Note:</u> Only applies to cable installation in dropped ceiling	B+	Use only industrial rated ladders Do not exceed 120kg SWL of ladder. Inspect ladder before use for damage. Position ladder to ensure stability – step ladders to be fully opened with locks in place.  The ladders base and top should be firmly secured by fixing or tying, or firmly held by another person. Maintain 3 points of contact. Keep proper footing and balance at all times. Don't over reach – move the ladder as you work.	C-	Line Manager	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms

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2	Remove ceiling or floor tiles (cont.)	Head injury	B-	Maintain awareness of gas pipes, water pipes, water sprinkler systems, air condition ducts & cable trays. Look out for possible bumps and scrapes.	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to Dust	C-	PPE: Safety Glasses, Face Mask (P1 Industrial Low Tox)	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Manual Handling	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Adequate staff to help with the transporting of equipment. Use a dual suction lifter for floor tiles.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Slips, trips and falls	B-	Make sure work area is clear of obstacles. Ceiling and floor tiles are stacked away from any thoroughfares. Work area is isolated by means of barricade from other employees/public. PPE: Safety Boots	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
3	Drill penetration hole(s)  <b>Required:</b> A. Starting point of cable route B. Where there is no clear path such as walls C. The final exit point.	Injury from power tools (Drill)	C+	Individual competent with use of tool Ensure drill is in good condition and bit is fastened tightly. Use tool only for purpose it was designed for. Secure handling. Keep hands out of the path of drill bits. Avoid awkward hand positions where a sudden slip could cause your hand to move into the drill bit. Don't overreach. Keep proper footing and balance at all times. PPE: Safety Glasses	D	Line Manager	SMS-06-GD-0225 Plant SMS-06-SW-0479 Power Drills SMS-06-GD-0323 Personal Protection Equipment

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3	<p>Drill penetration hole(s) (cont.)</p> <p>Required:</p> <ul style="list-style-type: none"> <li>A. Starting point of cable route</li> <li>B. Where there is no clear path such as walls</li> <li>C. The final exit point.</li> </ul>	<p>Exposure to noise</p> <p>Exposure to Dust</p> <p>Head injury</p> <p>Contact with electricity</p>	<p>C+</p> <p>C-</p> <p>B-</p> <p>A</p>	<p>PPE : Hearing Protection (Ear muffs or Earplugs)</p> <p>PPE: Safety Glasses, Face Mask (P1 Industrial Low Tox)</p> <p>Maintain awareness of gas pipes, water pipes, water sprinkler systems, air condition ducts &amp; cable trays. Look out for possible bumps and scrapes.</p> <p>Electrical leads &amp; equipment tested and tagged monthly Use RCD. Visually inspect all leads for wear and tear before commencing. Use insulated tools. Drill only where services have been positively identified and marked. Observe safe work clearances when working in the proximity of electrical cables and outlets. If distances cannot be maintained – Do Not Proceed – contact your Line Manager to organise rescheduling work when isolation is possible.</p>	<p>D</p> <p>D</p> <p>C-</p> <p>C+</p>	<p>Line Manager</p> <p>Line Manager</p> <p>Line Manager</p> <p>Line Manager</p>	<p>SMS-06-GD-0273 Noise Management</p> <p>SMS-06-GD-0323 Personal Protection Equipment</p> <p>SMS-06-GD-0323 Personal Protection Equipment</p> <p>SMS-06-GD-0001 Guide to Manual Handling</p> <p>SMS-06-GD-0268 Working Around Electrical Equipment</p> <p>SMS-06-SW-0269 Electrical Shock Protocol</p> <p>SMS-06-SW-0479 Power Drills</p>

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4	Run cable	Fall from heights <u>Note:</u> Only applies to cable installation in dropped ceiling	B+	Use only industrial rated ladders Do not exceed 120kg SWL of ladder. Inspect ladder before use for damage. Position ladder to ensure stability – step ladders to be fully opened with locks in place. The ladders base and top should be firmly secured by fixing or tying, or firmly held by another person. Maintain 3 points of contact. Keep proper footing and balance at all times. Don't over reach – move the ladder as you work.	C-	Line Manager	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms
		Head injury	B-	Maintain awareness of gas pipes, water pipes, water sprinkler systems, air condition ducts & cable trays. Look out for possible bumps and scrapes.	C-	Line Manager	
		Slips, trips & falls <u>Note:</u> Only applies to cable installation in raised floors.	B-	Maintain awareness of gas pipes, water pipes, cable trays & cables under raised floors. PPE: Safety Boots	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Contact with electricity	A	Observe safe work clearances when working in the proximity of electrical cables and outlets. If distances cannot be maintained – Do Not Proceed – contact your Line Manager to organise rescheduling work when isolation is possible.	C-	Line Manager	SMS-06-GD-0268 Working Around Electrical Equipment SMS-06-SW-0269 Electrical Shock Protocol
		Muscular strain	B-	Avoid reaching or stretching to excess, as by a straining effort. Use a relay system – passing cable from one person to the next.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling

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4	Run cable (cont.)	Cuts and abrasions	C+	Be aware of sharp edges. PPE: Protective Gloves (Cut Resistant or Leather)	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to Dust	C-	PPE: Safety Glasses, Face Mask (P1 Industrial Low Tox)	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
5	Cut any excess cable ready for termination.	Hand injuries	C+	Use appropriate tool in the correct manner.	D	Line Manager	
6	Replace ceiling or floor tiles.	Fall from heights <u>Note: Only applies to cable installation in dropped ceiling</u>	B+	Use appropriate ladder and maintain 3 points of contact. Don't over reach – move the ladder as you work. Position ladder to make sure it is stable.	C-	Line Manager	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms
		Head injury	B-	Maintain awareness of gas pipes, water pipes, water sprinkler systems, air condition ducts & cable trays. Look out for possible bumps and scrapes.	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to Dust	C-	PPE: Safety Glasses, Face Mask (P1 Industrial Low Tox)	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Manual Handling	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Adequate staff to help with the transporting of equipment. Use a dual suction lifter for floor tiles.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Slips, trips and falls	B-	Make sure work area is clear of obstacles. Ceiling and floor tiles are stacked away from any thoroughfares. Work area is isolated by means of barricade from other employees/public. PPE: Safety Boots	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

## **Running cables through dropped ceilings & raised floors**

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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**

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RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency							Definition for Use - Regional & Local level (Workplace)
		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	
Consequence	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	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.	
	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		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.
>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	To score the risk, follow the steps:
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A	
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+	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).
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-	