

Splicing Fibre Optic Cable (Terminate/Joint)

Issue date: 01/04/09
Review date: 31/03/12

SWMS number: SMS-06-SW-0884	SWMS Name: Splicing Fibre Optic Cable (Terminate/Joint)			SWMS Team: <ul style="list-style-type: none"> Renato Dovecer – Safety Coordinator Brett Gordon – Supervisor Comms Field Cable Network Stephen Lacy – Specialist Cable Network Andrew Brassel - Specialist Cable Network
Custodian (Position): Safety Coordinator	Assumptions: N/A			Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) <ul style="list-style-type: none"> Supervisor Comms Field Cable Network – C&CS, Asset Management Safety Coordinator – C&CS, Asset Management
Approving Authority (Position): Manager Communications Field Resources	Plant/Equipment/Tools: <ul style="list-style-type: none"> O/F Splicer O/F Tool Kit Energized / live fibre identifier Power Supply (Generator) Drill Hand tools 	Records/Reporting: <ul style="list-style-type: none"> Splicing / Terminating Fibre Optic Cable Risk Assessment 	Permits/licences required: <ul style="list-style-type: none"> Registered cabler under the ACMA Cabling Provider Rules 	PPE required: <ul style="list-style-type: none"> Safety Boots High Visibility Vest Safety Glasses or Goggles Hearing Protection (Ear muffs or Earplugs) Disposable Latex Gloves Protective Gloves (Cut resistant or Leather) Protective Clothing O/F Protective eyewear
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> OHS Regulation 2001 Rail Safety Act 2002 AS/NZS 2211.1 Safety of laser products Part 1: Equipment classification, requirements and user's guide. AS/NZS 2211.2 Safety of laser products Part 2: Safety of optical fibre communication systems AS/NZS 3000 Electrical installations AS/NZS 3080 Telecommunications installations – Integrated telecommunications cabling system for commercial buildings Manual Handling Resource WorkCover NSW 2004 AS 1940 The storage and handling of flammable and combustible liquids 	Inspection requirements <ul style="list-style-type: none"> Electrical inspecting & tagging – monthly Maintain inspection and test records in accordance with SMS-16-SR-0057 Inspection and Testing and SMS-05-SR-0027 Records Management. 	Service schedule: N/A	Training/Qualifications required: <ul style="list-style-type: none"> Rail Industry Safety Induction (RISI) OHS Construction Induction Training Card 	MIMS or METRE Ref: N/A

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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)
1	Isolate Source and verify fibre is de-energized. <u>Note:</u> Only applies to live cables.	Exposure to laser light/radiation	B-	<p>Restrict access to work area to authorised personnel.</p> <p>Contact the nominated person at the appropriate optical power source and request that the power on the relevant fibres be switched off.</p> <p>Nominated person needs to be trained and competent on the type of equipment which is required to be switched on and off.</p> <p>Check that there is no optical power in the fibre by using an approved optical power meter or energized / live fibre identifier.</p> <p>Cap all disconnected fibres that may be able to emit laser light / radiation.</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
2	Cut cable to appropriate length and strip	Cuts and abrasions	C+	<p>Be aware of sharp edges.</p> <p>Cut away from body & limbs.</p> <p>Use appropriate tools.</p> <p>PPE: Protective Gloves (Cut resistant or Leather).</p>	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Muscular strain	B-	<p>Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees.</p> <p>Use correct tools for the task.</p> <p>Use assistance if required.</p>	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling
		Exposure to fibre glass (glass fibre, rodent sheath)	B-	<p>Careful handling of fibres.</p> <p>Wear disposable apron if possible to minimise fibre particles from attaching to your clothing.</p> <p>PPE: Safety Glasses, Protective Gloves (Cut resistant or Leather), Protective Clothing (eg. Disposable Overall, Apron).</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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2	Cut cable to appropriate length and strip (cont.)	Exposure to laser light/radiation	B-	Never look directly into the end of fibre optic cables or connector faces without suitable eye protection, or point them at other people. PPE: Suitable O/F Protective eyewear	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
3	Collect and dispose of fibre off-cuts	Exposure to glass fibre shards	B-	Careful handling of fibres. Wear disposable apron if possible to minimise fibre particles from attaching to your clothing. Frequently clear off working surfaces where bare fibre may be present. Use double-sided tape to pick up broken or stray pieces of fibre. Collect all fibre off-cuts and dispose of them in a 'sharps' container. Do not allow broken or stray pieces of fibre to fall onto the floor where they can cling to shoes and be carried elsewhere. PPE: Safety Glasses, Protective Gloves (Cut resistant or Leather), Protective Clothing (eg. Disposable Overall, Apron).	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
4	Clean cable	Contact with chemicals	B+	Do not touch your eyes while working with chemicals. Make sure there is access to water and soap. Wash hands thoroughly after working with chemicals. PPE: Safety Glasses, Disposable Latex Gloves	C+	Line Manager	SMS-06-GD-0199 Dangerous Goods and Hazardous Substances SMS-06-SW-0195 Safe Handling and Storage of Flammable and Combustible Liquids SMS-06-GD-0323 Personal Protection Equipment

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4	Clean cable (cont.)	Exposure to fumes and odours	B-	Make sure work area is well ventilated.	C-	Line Manager	SMS-06-GD-0199 Dangerous Goods and Hazardous Substances SMS-06-SW-0195 Safe Handling and Storage of Flammable and Combustible Liquids SMS-06-GD-0323 Personal Protection Equipment
5	Place cable in enclosure, secure and organise tubes	Exposure to laser light/radiation	B-	Never look directly into the end of fibre optic cables or connector faces without suitable eye protection, or point them at other people. PPE: Suitable O/F Protective eyewear	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to glass fibre shards	B-	Careful handling of fibres. Wear disposable apron if possible to minimise fibre particles from attaching to your clothing. Frequently clear off working surfaces where bare fibre may be present. Use double-sided tape to pick up broken or stray pieces of fibre. Collect all fibre off-cuts and dispose of them in a 'sharps' container. PPE: Safety Glasses, Protective Gloves (Cut resistant or Leather), Protective Clothing (eg. Disposable Overall, Apron).	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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6	Splice fibre (terminate/joint)	Exposure to laser light/radiation	B-	Never look directly into the end of fibre optic cables or connector faces without suitable eye protection, or point them at other people. PPE: Suitable O/F Protective eyewear	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to glass fibre shards	B-	Careful handling of fibres. Wear disposable apron if possible to minimise fibre particles from attaching to your clothing. Frequently clear off working surfaces where bare fibre may be present. Use double-sided tape to pick up broken or stray pieces of fibre. Collect all fibre off-cuts and dispose of them in a 'sharps' container. PPE: Safety Glasses, Safety Gloves, Protective Clothing (eg. Disposable Overall, Apron).	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
7	Organise, close and secure enclosure. Restore isolated source	Cuts and abrasions	C+	Be aware of sharp edges. Cut away from body & limbs. Use appropriate tools. PPE: Protective Gloves (Cut resistant or Leather).	D	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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8	Bulk / mount cable joint <u>Note:</u> Only applies to external cable joints.	Injury from power tools (Drill)	B-	Individual competent with use of tool Make sure drill is in good condition 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. Wear proper apparel; loose clothing or jewellery can become caught in moving parts. PPE: Safety Glasses	C-	Line Manager	SMS-06-GD-0225 Plant SMS-06-SW-0479 Power Drills SMS-06-GD-0323 Personal Protection Equipment
		Exposure to noise	B-	PPE: Hearing Protection (Ear muffs or Earplugs)	C-	Line Manager	SMS-06-GD-0273 Noise Management SMS-06-GD-0323 Personal Protection Equipment
		Muscular strain	B-	Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Avoid reaching and stretching. Use assistance if required.	C-	Line Manager	SMS-06-GD-0001 Guide to Manual Handling

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8	Bulk / mount cable joint (cont.) <u>Note:</u> Only applies to external cable joints.	Contact with electricity	A	<p>Electrical leads & equipment tested and tagged.</p> <p>Use insulated tools.</p> <p>Observe safe work clearances when working in the proximity of electrical cables and outlets.</p>	C-	Line Manager	SMS-06-GD-0268 Working Around Electrical Equipment SMS-06-SW-0269 Electrical Shock Protocol SMS-06-SW-0479 Power Drills
		Hit by projectiles	B-	<p>PPE: Safety Glasses</p> <p>Clear worksite in a 3 metre radius from the drill.</p> <p>If necessary barricade work area.</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment
9	Clean up and vacate site	Exposure to glass fibre shards	B-	<p>Careful handling of fibres.</p> <p>Wear disposable apron if possible to minimise fibre particles from attaching to your clothing.</p> <p>Frequently clear off working surfaces where bare fibre may be present.</p> <p>Use double-sided tape to pick up broken or stray pieces of fibre.</p> <p>Check clothing to remove any stray pieces of bare fibre by patting yourself with clean pieces of double-sided tape.</p> <p>Collect all fibre off-cuts and dispose of them in a 'sharps' container.</p> <p>Container should be disposed of in an approved manner.</p> <p>Thoroughly wash hands after leaving work site.</p> <p>PPE: Safety Glasses, Protective Gloves (Cut resistant or Leather), Protective Clothing (eg. Disposable Overall, Apron).</p>	C-	Line Manager	SMS-06-GD-0323 Personal Protection Equipment

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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	
		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	
Consequence		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	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.
			F1	F2	F3	F4	F5	F6	
Incredible	Improbable	Remote	Occasional	Probable	Frequent				
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A	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.
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-	

Custodian: Safety Coordinator

Approver: Manager Communications Field Resources

Number: SMS-06-SW-0884

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