

SPJ-RCP-3.8-11-01-R0

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE COMMENCING

**Indoor/Outdoor Termination Kit to suit RailCorp Spec:
1500V DC Cu 1 x single core XLPE Screened Cable with PVC
Inner Sheath, HDPE Outer Sheath**

(Based on 3M-78-8117-0588-4 Instruction)



Termination Type	Kit Number	Primary Insulation O.D. (mm)	Jacket O.D. (mm)	RailCorp Conductor Size (mm ²)
Indoor	RCI-1.5KV-240-QT3	21.1 - 38.9	28.4 - 47.5	240
	RCI-1.5KV-400-QT3	26.7 - 45.7	35.3 - 61.0	400
Outdoor	RCO-1.5KV-240-QT3	21.1 - 38.9	28.4 - 47.5	240
	RCO-1.5KV-400-QT3	26.7 - 45.7	35.3 - 61.0	400

1	10/12/2009	Original Version		0	DC
Issue	Date	Change Record		Rev	Apr
INTERTECH	Intertech Engineering Pty Ltd 15 Sir Laurence Drive, Seaford, Victoria 3198 Australia Telephone: +61 3 8770 5500 Facsimile: +61 3 9773 5666 Email: sales@intertech-eng.com.au		Title: Indoor/Outdoor Termination Kit to suit RailCorp Spec: 1500V DC Cu 1 x single core XLPE Screened Cable with PVC Inner Sheath, HDPE Outer Sheath <i>(Based on 3M 78-8117-0588-4 Instruction)</i>		
	Client: RailCorp		Project:		
	Drawn by: SD	Checked by: DC	File Name: SPJ-RCP-3.8-11-01-R0		
	Scale: NONE	Date: 13/10/2009	Part N ^o : SPJ-RCP-3.8-11-01		
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1. Bill of Material

Item	Type	Description	Kit Number	Application	Qty
1	3M Kit	QTIH 7644-T-110	RCI-1.5KDC-240-QT3	Indoor	1
		QTIH 7645-T-110	RCI-1.5KDC-400-QT3		
		QTIH 7654-S-4	RCO-1.5KDC-240-QT3	Outdoor	
		QTIH 7655-S-4	RCO-1.5KDC-400-QT3		

Common Items for All Kits (Indoor & Outdoor versions)

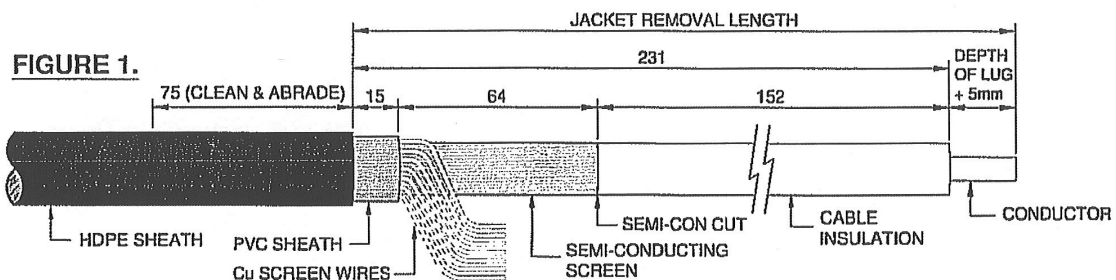
Item	Type	Description	Qty
2	Pack	Mastic Seal Strips (3 per pack)	2
3	Roll	Scotch N° 35 Vinyl Electrical Grey Tape 12mm x 6m	1
4		CC-2 Preparation Kit	1
5		CAL 400LPB copper crimp lug or equivalent	1
6		Wire Binder - 500mm long	1

2. Prepare Cable

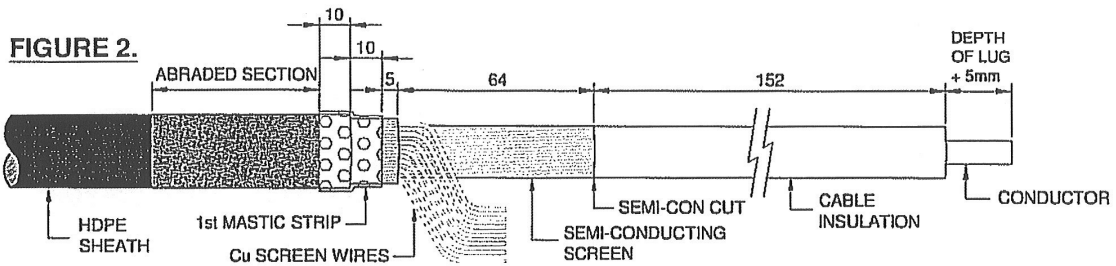
1. Train cable into position and cut to length required for installation. Allow sufficient screen wire length for earth connection.
2. Prepare cable using dimensions shown in (Figure 1). Remove the outer HDPE sheath, the PVC sheath and any tape covering screen wires.

Be sure to allow for depth of terminal lug. Do not fold back screen wires at this point.

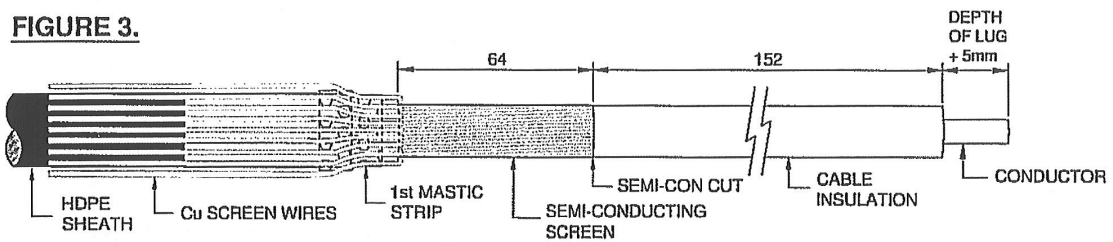
3. Clean and abrade cable outer sheath for a distance of 75mm back from the cut edge. (Figure 1).



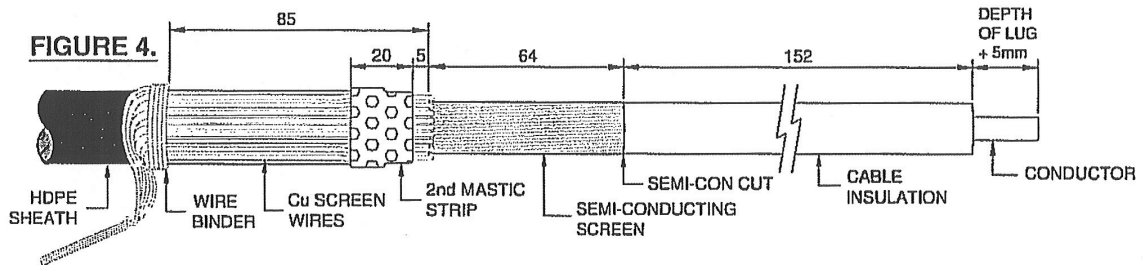
- Using the mastic strips provided and with light tension apply 2 (two) half-lapped layers of mastic extending 10mm each side of HDPE sheath cut. (Figure 2).



- Bend all screen wires straight back over the applied mastic strip onto the HDPE sheath. Avoid crossing screen wires. (Figure 3).

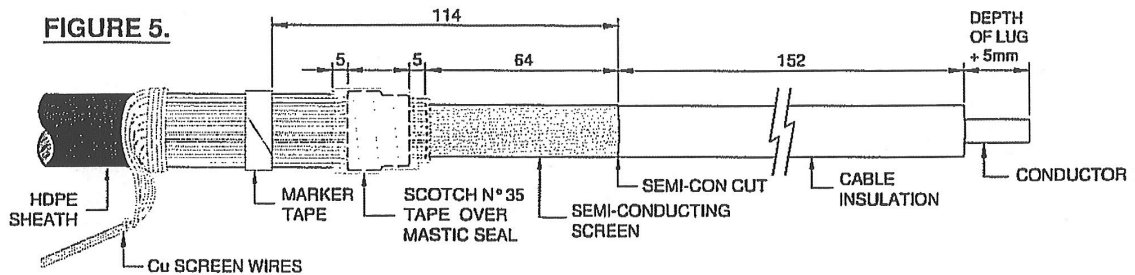


- Apply a second mastic band over the Cu screen wires and previously applied mastic.
- Fix screen wires with a copper wire binder 85mm below the fold-back position. Gather the wires together to form an earth lead. (Figure 4).



- Compress Cu screen wires into mastic by over-wrapping seal strips with two highly stretched layers of Scotch N° 35 grey tape, extending 5mm on each side of the mastic. Be sure to cover all exposed mastic.

- Place a marker tape 114mm from the semi-conducting screen cut. (Figure 5).



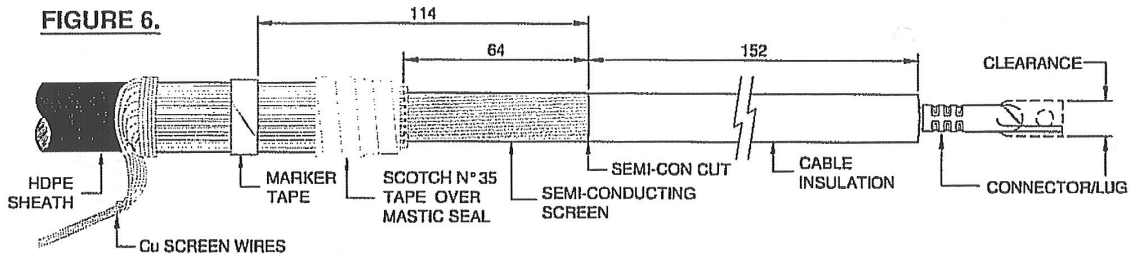
IMPORTANT NOTE: For cable ends not connected to an earth system see Appendix A.

3. Install Lug or Connector

1. Check to insure QT-III termination assembly fits over the selected lug. If lug (*Figure 6*) will not fit through the termination core, clean the insulation (*per Step 4*) and slide termination on cable before installing lug. **Do not remove core at this time.**

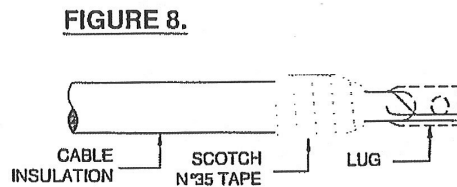
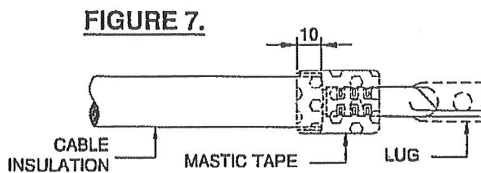
NOTE: Remove the red packing core before parking/installing QT-III termination.

2. Slide the termination body onto the cable and park. Ensure pull cord is towards the end of the cable.
3. Position connector/lug and crimp according to manufacturers directions. Remove excess oxide inhibitor and sharp crimp flashings following crimping. (*Figure 6*).



4. Clean Cable Insulation and Lug Barrel Using Standard Practice

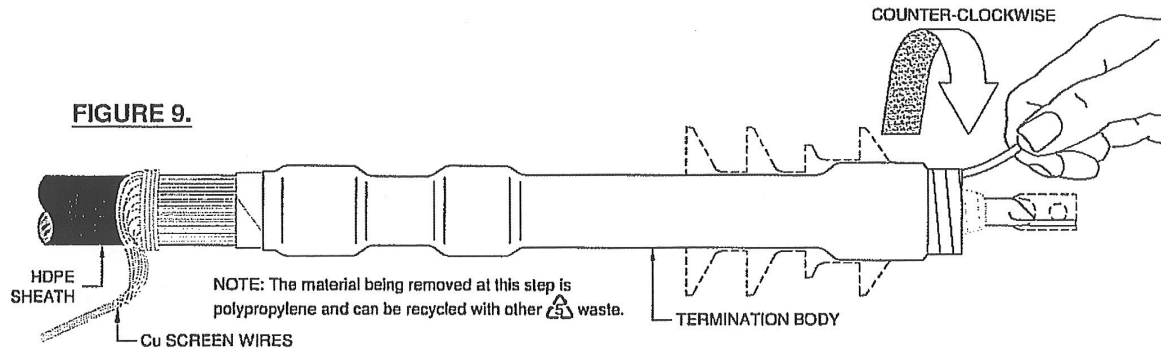
1. Using the supplied CC-2 Prep kit, wipe the cable insulation with a solvent pad. **Do not allow solvent to touch semi-con insulation shield!**
2. If abrasive must be used:
 - a. Use on insulation only. **Do not use abrasive on semi-con insulation shield!**
 - b. Use only aluminium oxide abrasive; grit 120 or finer.
 - c. Be careful not to reduce the cable insulation diameter below that allowed by the kit.
3. Apply half-lapped layers of mastic tape between the lug and the cable insulation until a smooth taper is achieved between the outside diameters of the lug and the cable insulation. See *Figure 7*.
4. Apply two stretched half-lapped layers of mastic tape starting 10mm on the cable insulation extending onto the lug and back to the starting point. Ensure a smooth transition is made by the tape.
5. Apply a half lapped layer of Scotch N° 35 tape over the Mastic tape. See *Figure 8*.



5. Install Termination

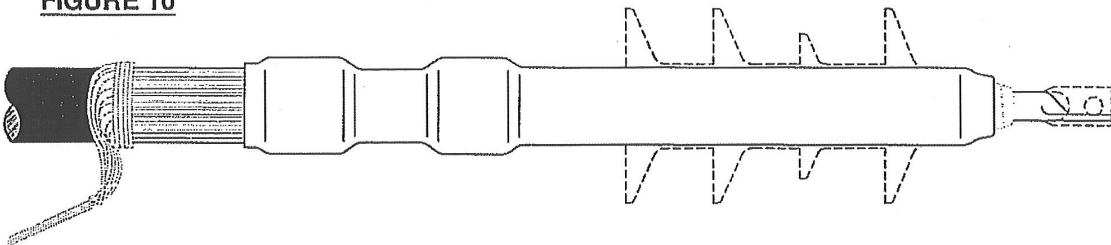
1. Slide the termination body towards the lug until the bottom of the termination is in line with the tape marker. Remove core. Pull while unwinding counter-clockwise starting with the loose end. Make sure the termination body (not the core) is butted up to the edge of the vinyl tape marker previously applied. (Figure 9).

NOTE: Once the termination insulator has made contact over the mastic seal area, there is no need to continue supporting the assembly. Do not push or pull on the termination assembly while unwinding the core.



2. When using a short barrel lug or connector on smaller size cable it may be necessary to trim any excess termination insulator from the lug or connector.
3. Remove marker tape holding screen wires to outer sheath. Collect all copper screen wires together and connect to earth system according to standard practice. (Figure 10).

FIGURE 10

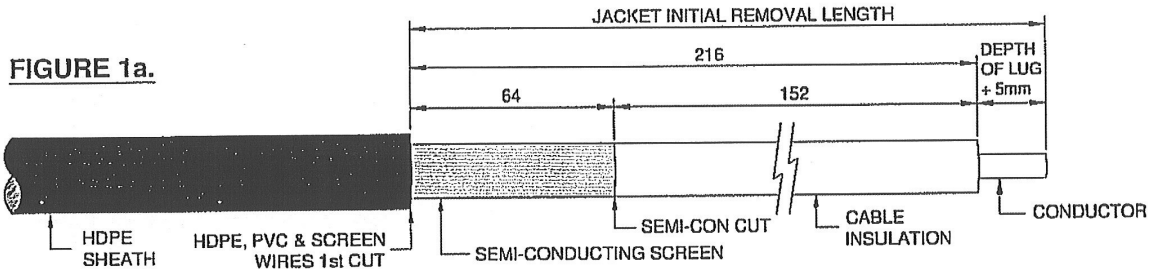


APENDIX A – Termination method for cables with screen wires not connected to earth

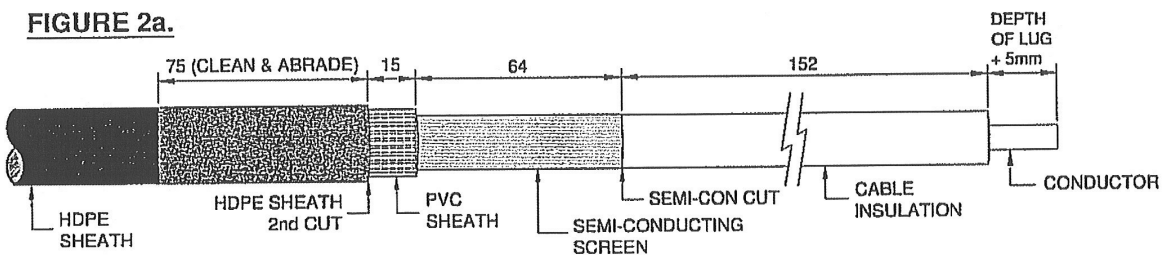
- 1.a Train cable into position and cut to length required for installation.
- 2.a Prepare cable using dimensions shown in (Figure 1a).

Be sure to allow for depth of terminal lug.

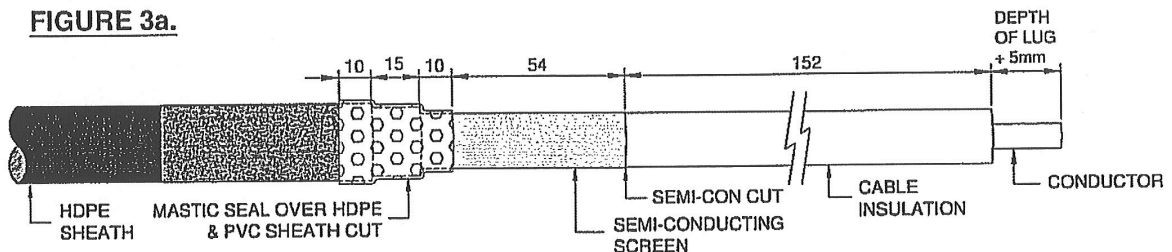
- 3.a Using a junior hacksaw, carefully ring cut the HDPE sheath scoring the screen wires at cut back mark. Then remove HDPE & PVC sheaths.
- 4.a Snap copper screen wires off by lightly bending backwards and forward against the sheath cut. (Figure 1a).



- 5.a Remove a further 15mm of HDPE sheath which will leave 15mm of the orange inner PVC sheath exposed.
- 6.a Clean and abrade cable outer sheath for a distance of 75mm back from the cut edge. (Figure 2a).

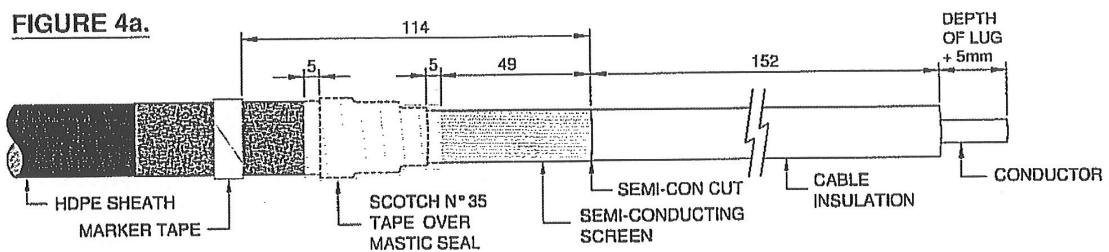


- 7.a Using the mastic strips provided and with light tension apply 2 (two) half-lapped layers of mastic, starting 10mm on HDPE sheath and finishing 10mm onto semi-con screen. (Figure 3a).



- 8.a Cover the mastic seal by over-wrapping seal strips with two highly stretched layers of Scotch N° 35 grey tape, extending 5mm on each side of the applied mastic.
Be sure to cover all exposed mastic.

9.a Place a marker tape 114mm from the semi-conducting screen cut. (Figure 4a).



Continue instructions as per steps 3, 4 and 5.

Replace original item 3 from step 5 with the item 3a below.

3.a. Remove temporary marker tape. The termination is complete. (Figure 5a).

