WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales
Gwasanaethu Canolbarth a De Orllewin Lloegr a Chymru

Company Directive

STANDARD TECHNIQUE: CA1G/7

Relating to the Procedures for Making Low Voltage Mains Cable Terminations

This Standard Technique document contains all the approved mains cable terminations, which shall be implemented in conjunction with the appropriate General Requirements contained in ST: CA1C.

This ST has not been written as a training document. It is not intended to be exhaustive in content and you must refer to your supervisor if you require training or instruction.

You shall work safely and skilfully, utilising the training/instruction you have already received, relating to the contents of this document and its cross-references.

You must make sure that you understand your job instructions and that you have the necessary tools and equipment for the job.

Author:	**Richard Summers**
Implementation Date:	**November 2018**
Approved by	
	Policy Manager
Date:	26 November 2018

IMPLEMENTATION PLAN

Introduction

This document replaces the existing version, ST:CA1G/6 and now includes the installation procedure for the Schneider combined LV CT Metering Panel / Cut-out.

Main Changes

This document provides details for the installation of the Schneider LV CT Metering Panel / Cut-out (7.404). This unit is for use with EV chargers **only**.

Testing of CT metering panels has been removed from this document and a reference to ST:TP14D added.

Impact of Changes

No major impact

Implementation Actions

- All staff responsible for installing these units to be briefed by their Team Managers on the installation and testing of these units issued with this document

Implementation Timetable

Immediate

REVISION HISTORY

Document Revision & Review Table		
Date	**Comments**	**Author**
November 2018	• Jointing Procedure 7.404 revised	Richard Summers
June 2014	• Jointing Procedure 7.409 removed • Jointing Procedure 7.404 revised	Richard Summers
May 2013	• Jointing Procedure 7.403 revised • Option for solvent wipes included	Richard Summers

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

INTRODUCTION

This Standard Technique document contains all the approved mains cable terminations, which shall be implemented in conjunction with the appropriate General Requirements contained in ST: CA1C, including: -

1. General Cleanliness and Accident Prevention
2. General Jointing Procedures – Dead Cables
3. General Jointing Procedures and Safety Precautions – Live Cables

If the need arises to undertake a mains termination configuration (i.e. non-standard) not covered within this Standard Technique the Policy Manager, Avonbank, is to be consulted.

The following Jointing Procedures shall only be applied to the termination of **dead cables** in accordance with POL: OS1.

CONTENTS

Note 1: - Jointing Procedures 7.402 and 7.406 Indoor Termination covers, Indoor Fuseboards, Pillars, Fuse Cabinets and other situations protected from the weather.

Note 2: - Jointing Procedures 7.405 and 7.4010 Outdoor Terminations covers Overhead Open Wire, ABC and Pole Mounted Fuses.

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.401

THREE CORE WAVECON MAINS CABLE 200/400/600A CUT-OUT TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Part 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.401

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	Quantity
200A Cut-out	1
Lugs LVET 120-12	3
Lug BET 60-12	1

185 Wavecon

400A Cut-out	1

300 Wavecon

600A Cut-out	1

ADDITIONAL ITEMS FOR EACH TERMINATION

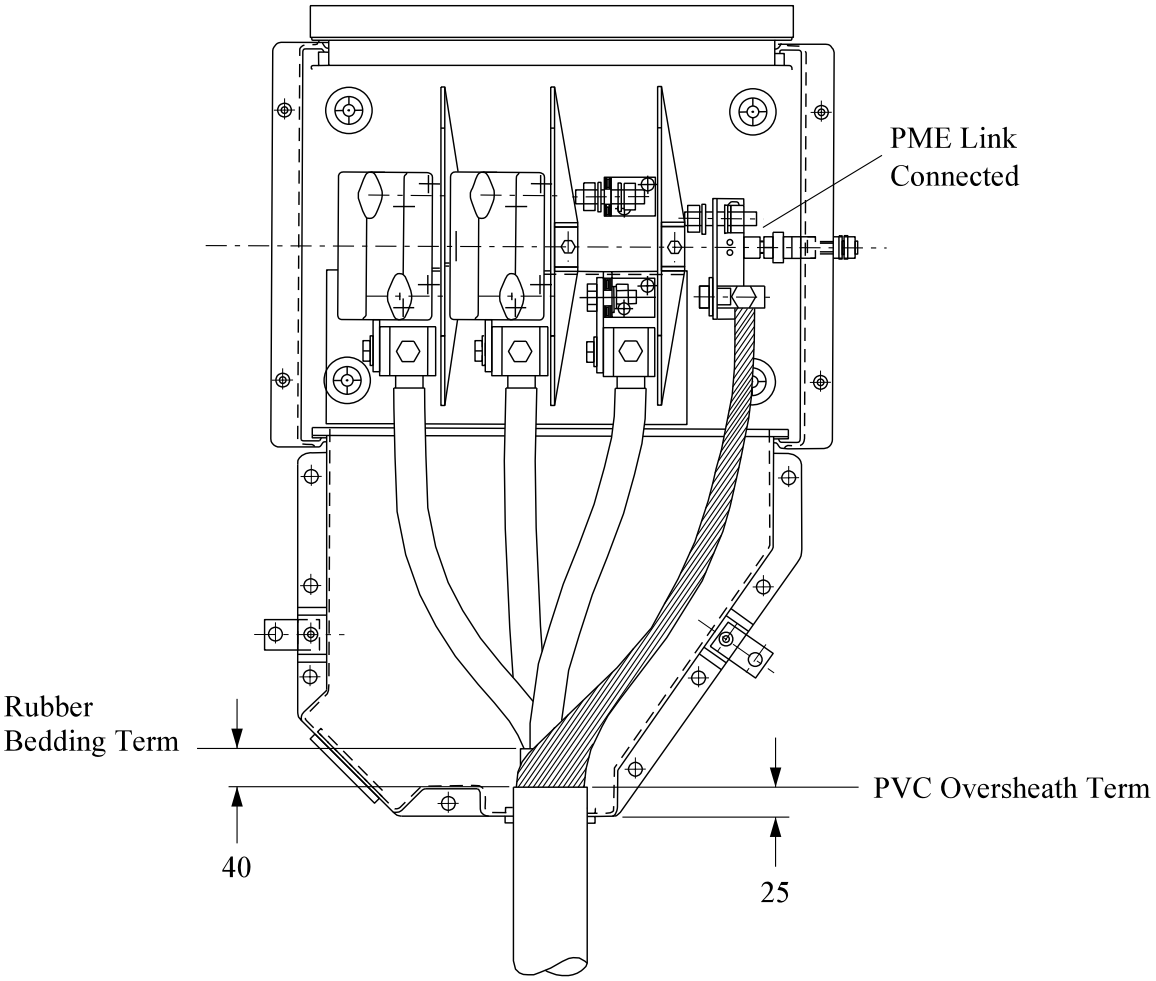
Cable ties
16 swg Tinned copper wire
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.401

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.401.1** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Fix cut-out in position	--
3.	Set and mark cables, cut cable to length (100mm above termination position).	--
4.	Remove PVC oversheath	6
5.	Prepare the neutral/earth wires for jointing	8
6.	Remove rubber bedding	9
7.	Set phase cores and neutral/earth wires in position	--
8.	Cut and connect neutral/wires	29
9.	Cut and connect phase conductors in turn	29
10.	Remove all temporary binders	--
11.	Replace covers and seal	--

All dimensions in mm



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			Drg. No. LVJ 7.401.1
			Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.402

THREE CORE WAVECON MAINS CABLE INDOOR TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Part 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.402

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	**Quantity**
Lugs LVET 120-12	3
Lug BET 60-12	1

185 Wavecon

Lugs LVET 185-12	3
Lug BET 120-12	1

300 Wavecon

Lugs LVET 300-12	3
Lug BET 120-12	1

ADDITIONAL ITEMS FOR EACH TERMINATION

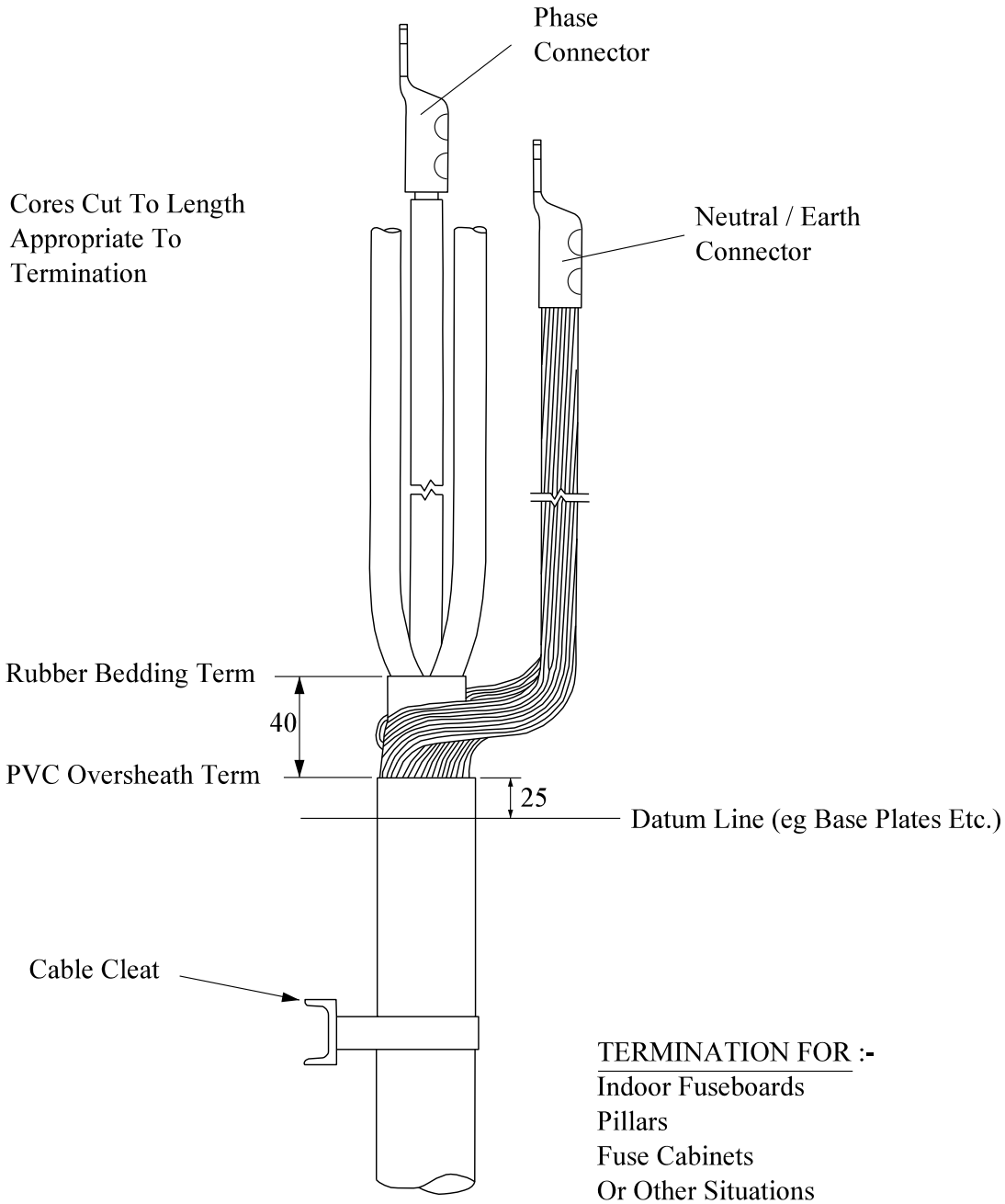
Cable ties
16 swg tinned copper wire
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - **Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.**

JOINTING PROCEDURE 7.402

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.402.1** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Set and mark cable to length (100mm above termination position)	4
3.	Remove PVC oversheath	6
4.	Prepare the neutral/earth wires for jointing	8
5.	Remove rubber bedding	9
6.	Set phase cores and neutral/earth wires in position	--
7.	Cut and connect neutral/earth wires	29
8.	Cut and connect phase conductors in turn	29
9.	Remove all temporary binders	--

All dimensions in mm



TERMINATION FOR :-

Indoor Fuseboards
Pillars
Fuse Cabinets
Or Other Situations
Protected From The Weather

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WESTERN POWER DISTRIBUTION

Drg. No.	Rev No
LVJ 7.402.1	

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS
CABLE TERMINATIONS

JOINTING PROCEDURE 7.403

THREE CORE WAVECON MAINS CABLE
ISOLATABLE MULTI SERVICE DISTRIBUTION BOARDS (MSDB)
12, 18, 24 and 36 WAY LUCY

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C Section 6 Pt 1
of the LV Jointing Manual

JOINTING PROCEDURE 7.403

MATERIALS LIST

CABLE SIZE – 95 Wavecon 4c

Item	Quantity
Multiway Fuseboard	1
Mechanical Connectors	Supplied with the panel
Earth Connection BCNE	Supplied with the panel

185 Wavecon 4c

Multiway Fuseboard	1
Mechanical Connectors	Supplied with the panel
Earth Connection BCNE	Supplied with the panel

300 Wavecon 4c

Multiway Fuseboard	1
Mechanical Connectors	Supplied with the panel
Earth Connection BCNE	Supplied with the panel

ADDITIONAL ITEMS FOR EACH TERMINATION

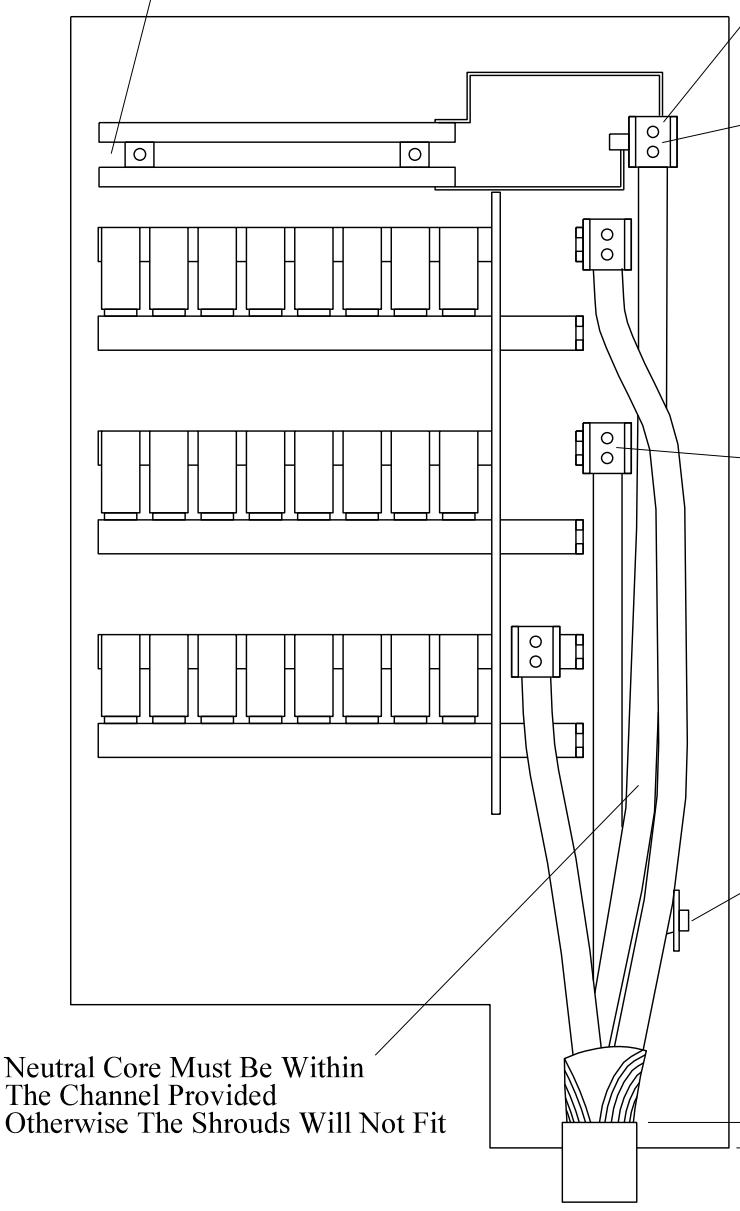
Cable ties
16 swg Tinned Copper Wire
Penetrox
De-solvit 1000FD
Workhorse dry / bucket wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.403

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.403.1** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Fix fuse board in position. (The doors and fuses can be removed to reduce weight).	
3.	Remove phase barriers and fuse bases	--
4.	Set and mark cable to length (200mm above termination position)	4
5.	Remove PVC oversheath	6
6.	Prepare the earth wires for jointing	8
7.	Remove rubber bedding	9
8.	Set phase / neutral cores and earth wires in their optimum position. ***The neutral core MUST be within the cable channel otherwise the fuse shrouds will not fit – check before sheering the connections***	
9.	Cut and connect neutral/earth wires	29
10.	Cut and connect phase conductors in turn	29
11.	Remove all temporary binders	--
12.	Replace phase barriers, fuse bases, covers, test and seal	

All dimensions in mm



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WESTERN POWER DISTRIBUTION

Title: FOUR CORE WAVECON 12,18,24 AND 36 WAY MULTI SERVICE DISTRIBUTION BOARDS

Drg. No. LVJ 7.403.1

Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.404

THREE / FOUR CORE WAVECON MAINS CABLE ISOLATABLE LV CT METERING PANEL TERMINATION (EXCLUDING TESTING OF METEREING FACILITIES)

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Part 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.404

MATERIALS LIST

CABLE SIZE – 185mm² Wavecon

Item	**Quantity**
200A LV CT Metering Panel	1
400A LV CT Metering Panel	1

300mm² Wavecon

400A LV CT Metering Panel	1
600A LV CT Metering Panel	1

Note Schneider unit is 400A

ADDITIONAL ITEMS FOR EACH TERMINATION

J type fuses
Fixing bolts
Cable ties
16 swg Tinned Copper Wire
Solvent wipes
Volt Meter
Continuity/Insulation Resistance Tester
Earth Fault Loop Impedance Tester
Test Lamp
Proving Unit
Phase Rotation Meter

Note: - Individual material item numbers (E5) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

ISOLATABLE LV CT METERING PANEL

Before commencing the level of PPE required for this complete operation shall be as the matrix given in General Requirement 3, also your attention is drawn to the Use of Solvents General Requirement 1.

Attention is drawn to the following: -

General Requirement 3 "General Jointing Procedures and Safety Precautions – Dead Cables."

General Requirement 20 "Temporary Earthing of Neutral/Earth Conductors in Live LV Cables during Jointing."

Before undertaking any Isolatable LV CT Metering Panel installation all the work required and the safety considerations shall be evaluated. A risk assessment shall form an integral component of the application of these techniques.

1. Scope of Work

This procedure covers the fixing of the LV CT Metering Panel and the connection / energisation of the incoming service cable / cut-out. **For details of the commissioning and testing of the metering facilities please see ST:TP14D**

Lucy Combined LV CT Panel – Can be used in all situations

Schneider Combined LV CT Panel – **Only to be used for EV charging cabinets**

Both CT Panels can be converted to PME (TNCS), SNE (TNS) or TT by utilising the link between the Neutral and Earth in the cut-out section of these units.

2. Fuses

LV CT metering panel is supplied **without** fuses fitted.

1. Testing and Commissioning

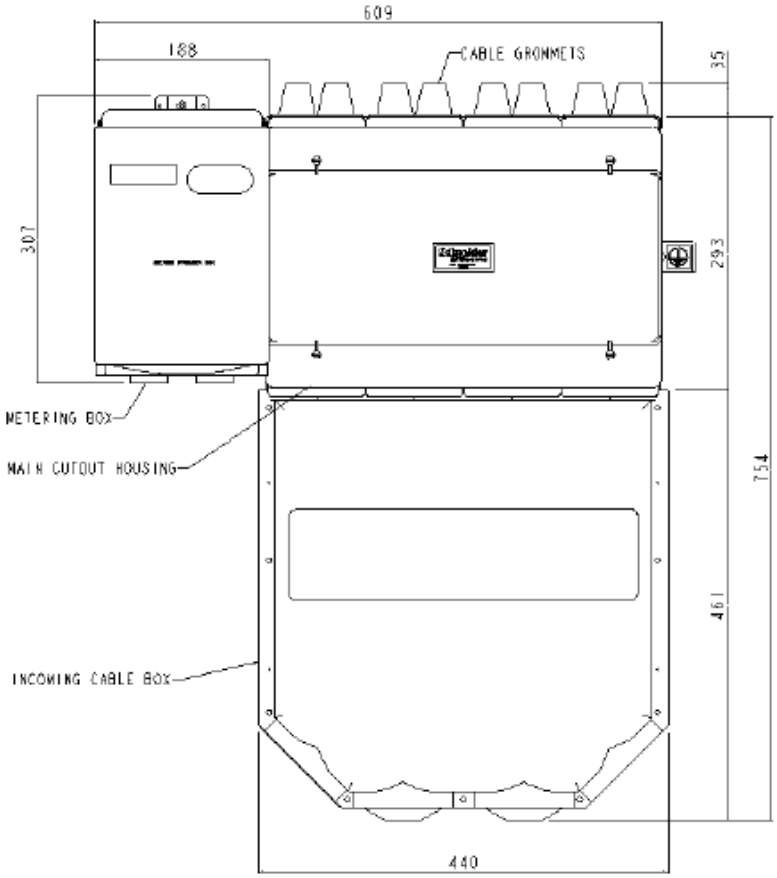
Combined LV CT panels can be tested and commissioned by the jointer who installs the unit or by another technician. Where the CT panel is installed, for testing and commissioning at a later date the jointer who installs and energises the cut-out **must**:-

- Ensure the Polarity and voltage is correct (ST:OS10F).
- Ensure the Phase Rotation is correct (ST:MI13K).
- Ensure the Earth loop Impendence values are acceptable (ST:NC5A).
- **Not** install cut-out fuses until the unit until testing and commissioning is complete and the customer tails have been connected. (if leaving site the three loaded J Fuse carriers shall be put into a sealable waterproof bag and cable tied to the external earth stud.
- Seal the cut-out section and fit a "Danger Live" and Caution "Point of Isolation" notice to the Cut-out.

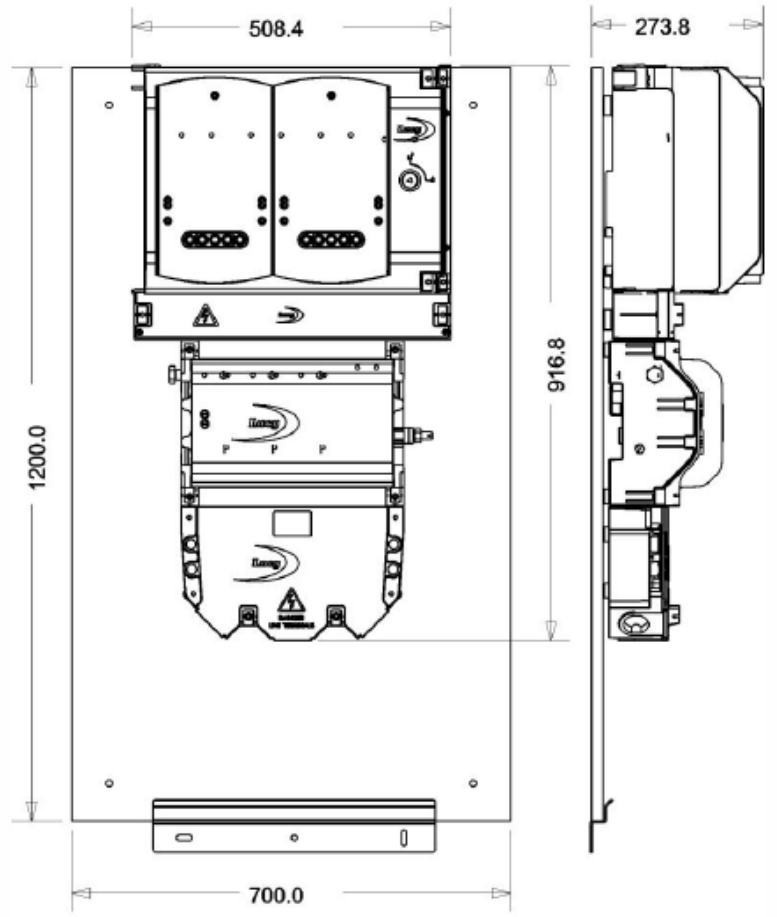
Testing and commissioning of the metering facilities must be completed in accordance with ST:TP14D.

JOINTING PROCEDURE 7.404

Actions		General Requirements (ST: CA1C)
1.	Fix LV CT Metering Panel in position. (If already fixed prove dead)	
2.	Open and prove incoming service cable **dead**	14
3.	Test Continuity and Insulation resistance of incoming service cable.	--
4.	Make off the cut-out in accordance with the relevant Procedure	--
5.	Replace all covers and seal the LV CT Panel before starting the service joint	
6.	Open the main cable using the relevant Jointing Procedure	
7.	Establish and mark neutral, shroud neutral and all exposed metalwork.	21
8.	Check the phase rotation of the main before making the joint	
9.	Make the joint in accordance with the relevant Jointing Procedure.	
10.	Confirm Voltage Polarity, Phase rotation and Earth Loop Impedance at the cut-out.	
11.	Commission the metering facilities	ST:TP14D
12.	Replace all covers and seal the unit	
13.	If not commissioning the unit, place fuses and carriers into the sealable bag and cable tie to the earth stud.	



Schneider Combined CT Panel Dimensions



Lucy Combined CT Panel Dimensions

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.405

THREE CORE WAVECON MAINS CABLE OUTDOOR TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Part 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.405

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	**Quantity**
Kit SMOE 81922	1
70mm² PVC sheathed copper	6m

185 Wavecon

Kit SMOE 81923	1
120mm² PVC sheathed copper	6m

300 Wavecon

Kit SMOE 81924	1
120mm² PVC sheathed copper	6m

ADDITIONAL ITEMS FOR EACH TERMINATION

Cable ties
16 swg tinned copper wire
PVC tape
Scotchfil putty
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

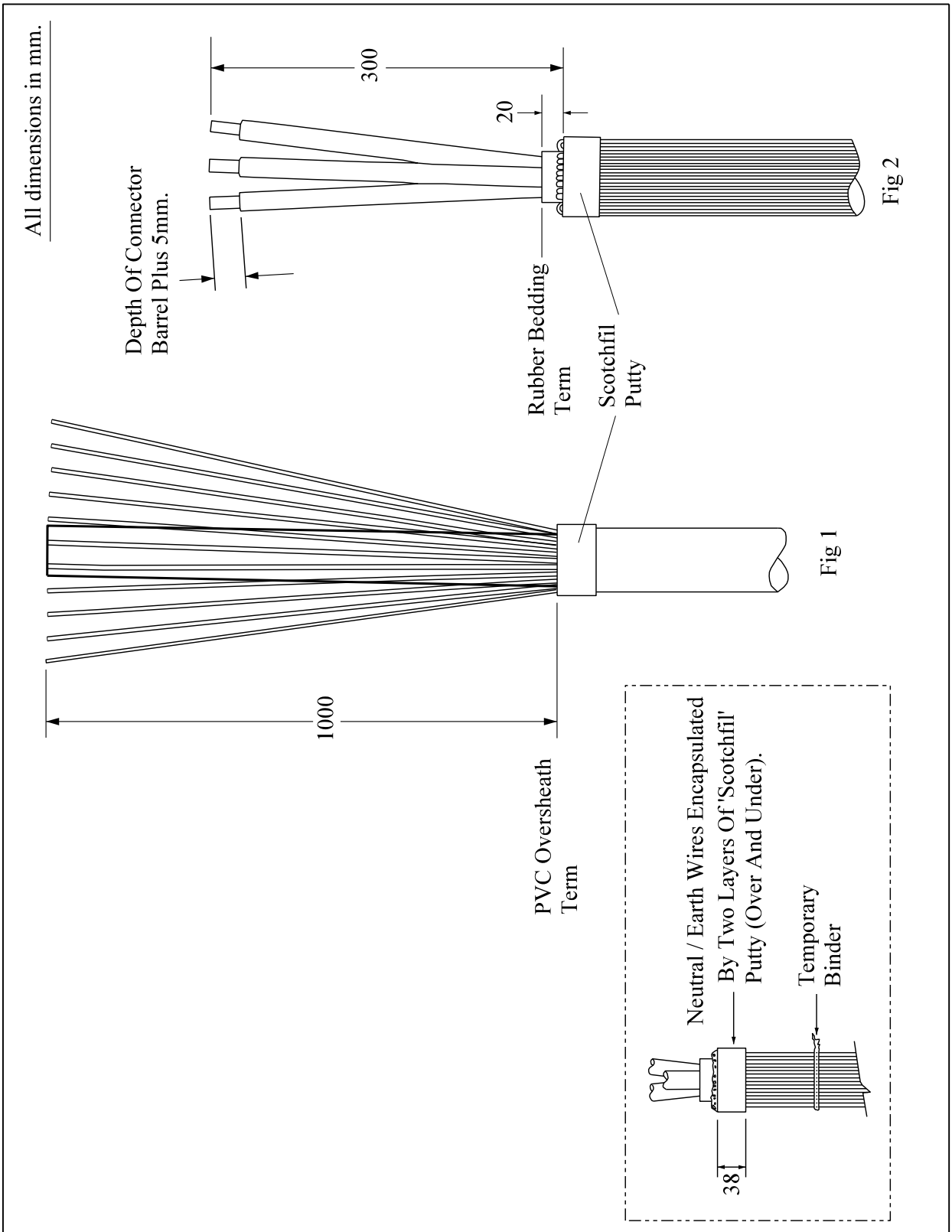
Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.405

	Actions	**General Requirements (ST: CA1C)**
	Refer to Drawing **LVJ 7.405.1, 7.405.2**, **7.405.3, 7.405.4, 7.405.5** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Obtain the required termination height, measure and mark at the cut position	5
3.	Set and cut cable to length	4
4.	Remove PVC oversheath	6
5.	Prepare the neutral/earth wires for jointing	8
6.	Degrease the PVC oversheath	35
7.	Apply a single turn of Scotchfil putty around the oversheath	--
8.	Remove temporary binder applied in 5	--
9.	Taking each copper wire in turn, bend back onto the putty applied in 7, ensure a gap is formed between each wire. Temporary secure with cable ties 100mm (approx.) below PVC termination point.	--
10.	Remove the rubber bedding	9
11.	Apply a further layer of Scotchfil putty over the copper wires and previous layer.	--
12.	Position and shrink the breakout into position	26
13.	Cut the PVC sheathed copper into the required lengths	--
14.	Cut the Wavecon cores to length	--
15.	Pass the cut lengths of medium walled tube over the cores and breakout turrets and shrink into place.	26
16.	Make the connections between the Wavecon cores and PVC sheathed copper tails.	29

	Actions	General Requirements (ST: CA1C)
17.	Apply phase colour tapes to the ends of the PVC sheathed copper tails	--
18.	Slide the mastic lined tubes over the tails, position central to the connector and shrink into position, starting at the centre and working towards the ends	26
19.	Apply temporary PVC tape binders at intervals around the tails	
20.	Slide the outer mastic lined tube over the bunched tails, centralize over the connector area and shrink into position, starting at the centre and working towards the ends	26
21.	Form the neutral/earth wires into a conductor and secure with PVC tape at intervals	--
22.	Protect the neutral/earth wires with thin wall tube and black PVC tape	--

All dimensions in mm.



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Title: THREE CORE WAVECON OUTDOOR TERMINATION STRIPPING DIMENSIONS

Drg. No. LVJ 7.405.1

Rev No

All dimensions in mm

℄ Of Connectors

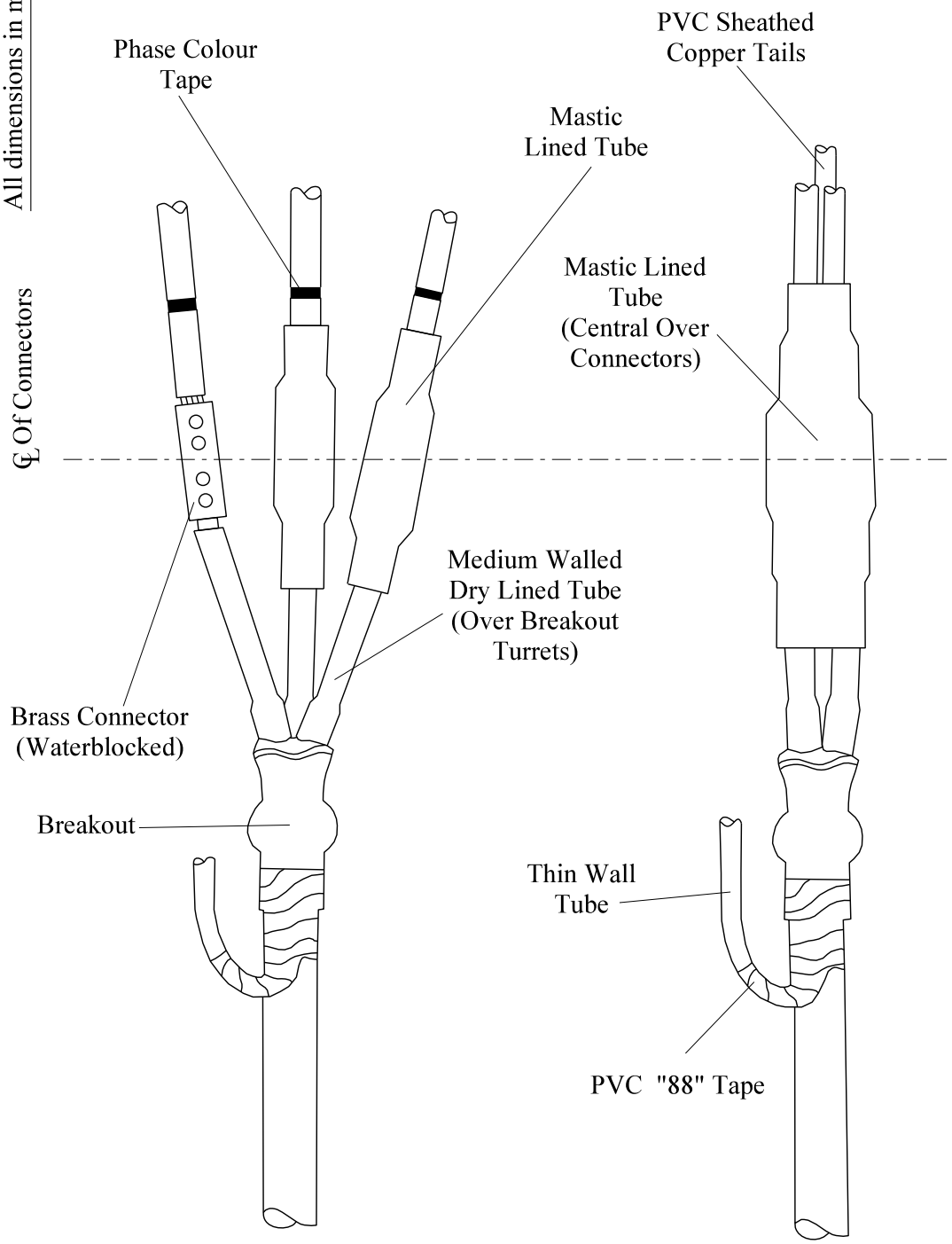

Fig 3

Fig 4

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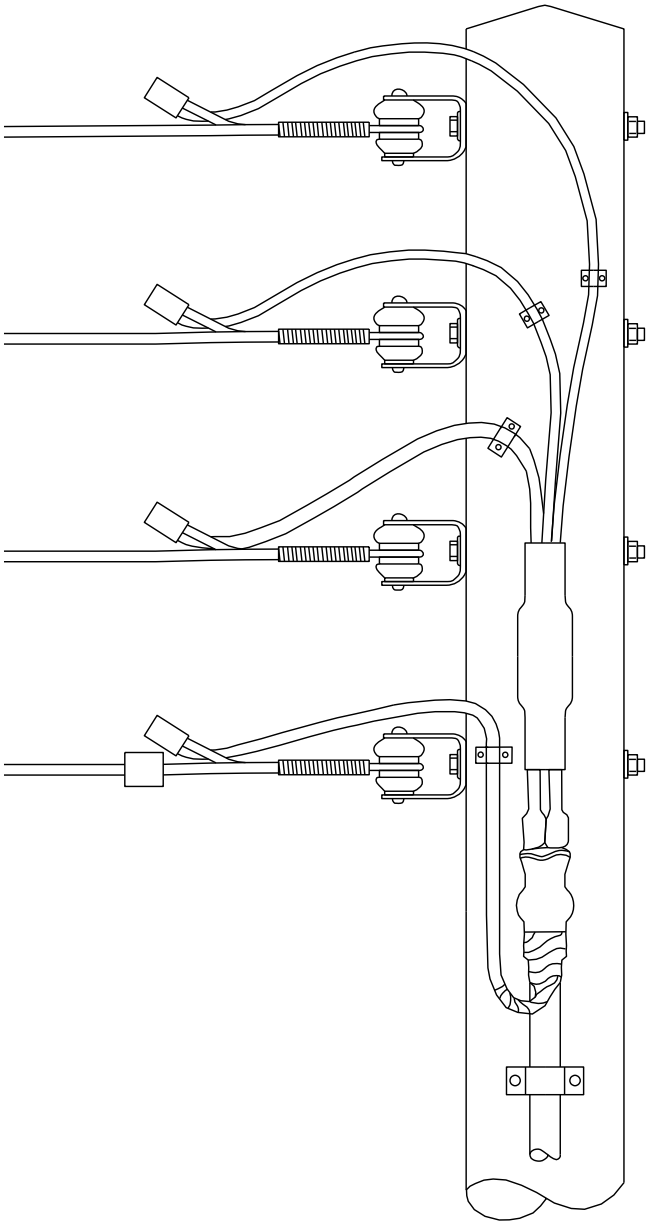
All dimensions in mm



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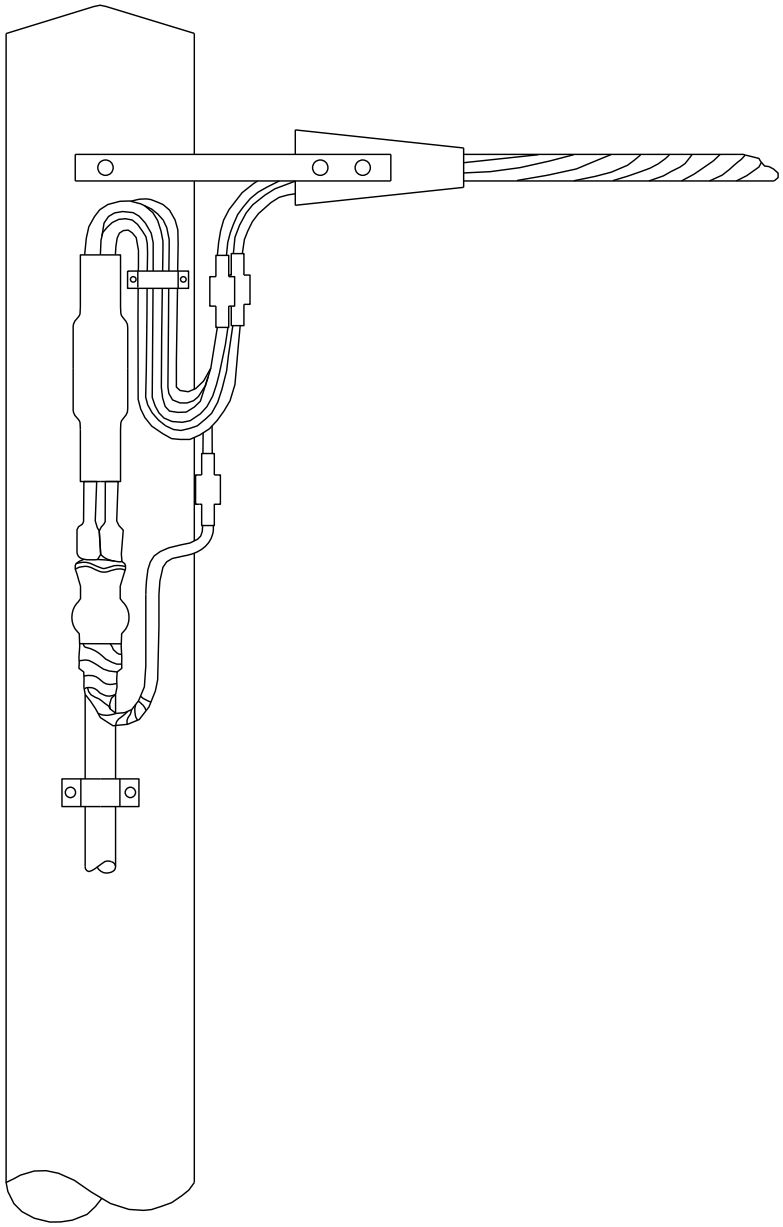
Title: THREE CORE WAVECON
OUTDOOR TERMINATION - OPEN WIRE
GENERAL LAYOUT

Drg. No. LVJ 7.405.3

Rev No



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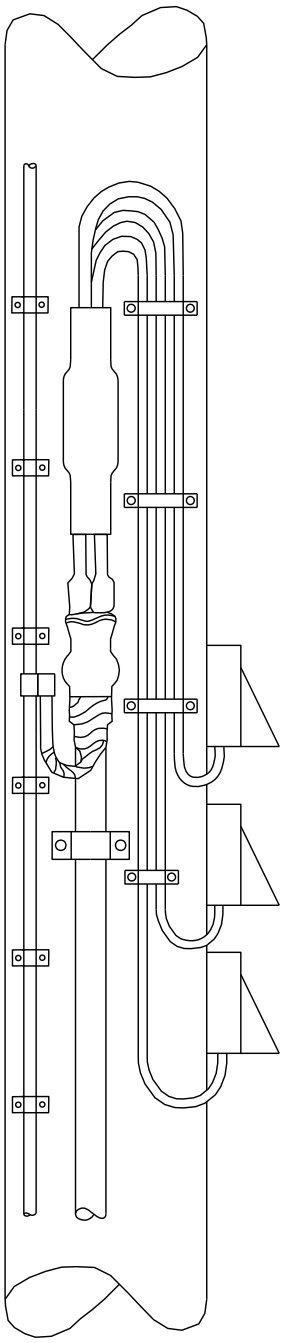
Title: THREE CORE WAVECON
OUTDOOR TERMINATION - ABC LINE
GENERAL LAYOUT

Drg. No. LVJ 7.405.4

Rev No

All dimensions in mm



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Title: THREE CORE WAVECON OUTDOOR TERMINATION - FUSES GENERAL LAYOUT

Drg. No. LVJ 7.405.5

Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.406

FOUR CORE WAVECON MAINS CABLE 200/400/600A CUT-OUT TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Part 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.406

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	Quantity
200A Cut-out	1
Lugs LVET 120-12	4
Lug BET 60-12	1

185 Wavecon

400A Cut-out	1

300 Wavecon

600A Cut-out	1

ADDITIONAL ITEMS FOR EACH TERMINATION

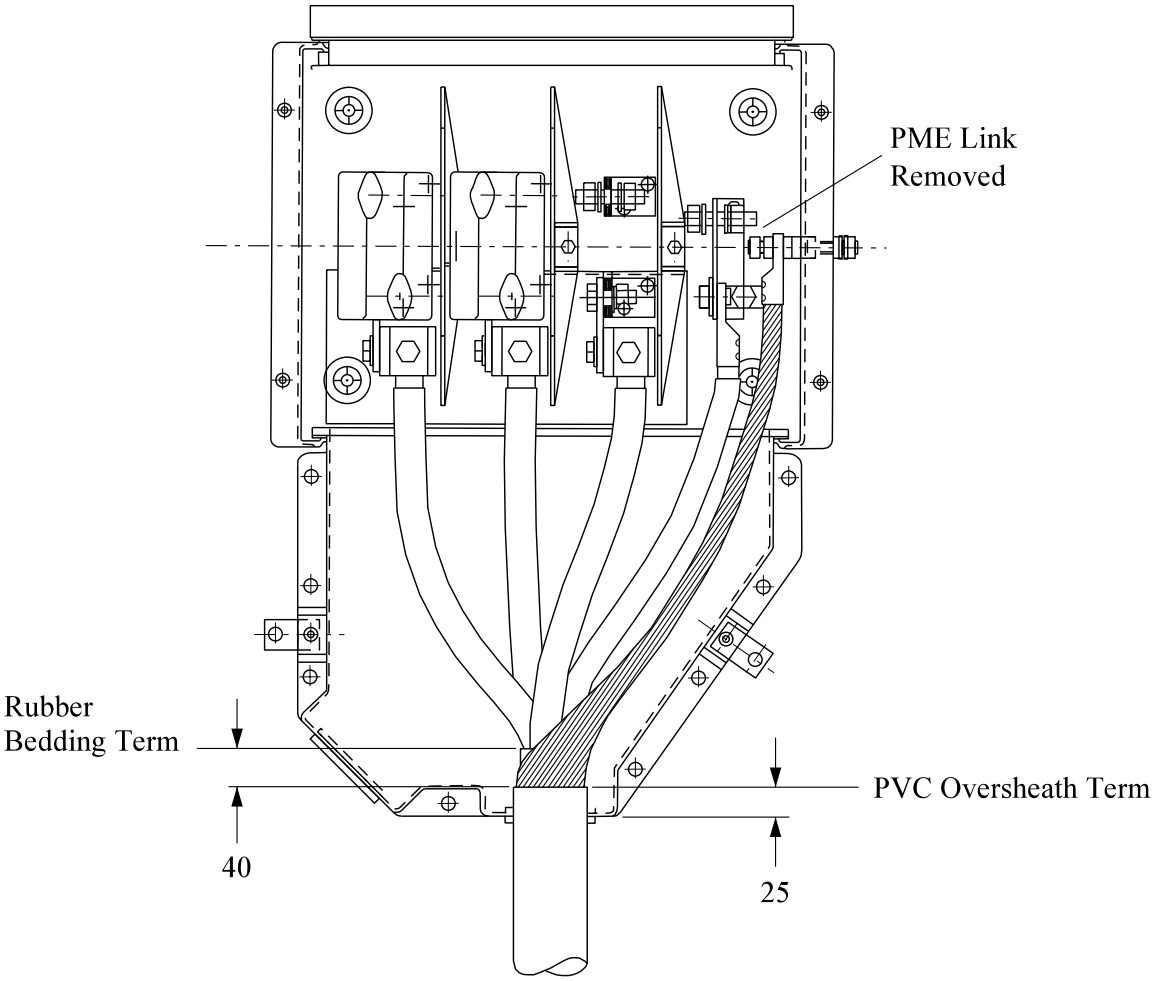
Cable ties
16 swg tinned copper wire
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.406

	Actions	General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.406-1** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead** in accordance with General Requirement 6.14	14
2.	Fix cut-out in position	--
3.	Remove PME link to convert cut-out so SNE	--
4.	Set and mark cables, cut cable to length (100mm above termination position).	4
5.	Remove PVC oversheath	6
6.	Prepare the earth wires for jointing	8
7.	Remove rubber bedding	9
8.	Set phase, neutral cores and earth wires in position	--
9.	Cut and connect earth wires	29
10.	Cut and connect neutral and phase cores in turn	29
11.	Remove all temporary binders	--
12.	Replace covers and seal	--

All dimensions in mm



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Title: FOUR CORE WAVECON
HEAVY DUTY CUTOUT TERMINATION
GENERAL LAYOUT

Drg. No. LVJ 7.406.1

Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.407

FOUR CORE WAVECON MAINS CABLE INDOOR TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Pt 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.407

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	Quantity
Lugs LVET 120-12	4
Lug BET 60-12	1

185 Wavecon

Lugs LVET 185-12	4
Lug BET 120-12	1

300 Wavecon

Lugs LVET 300-12	4
Lug BET 120-12	1

ADDITIONAL ITEMS FOR EACH TERMINATION

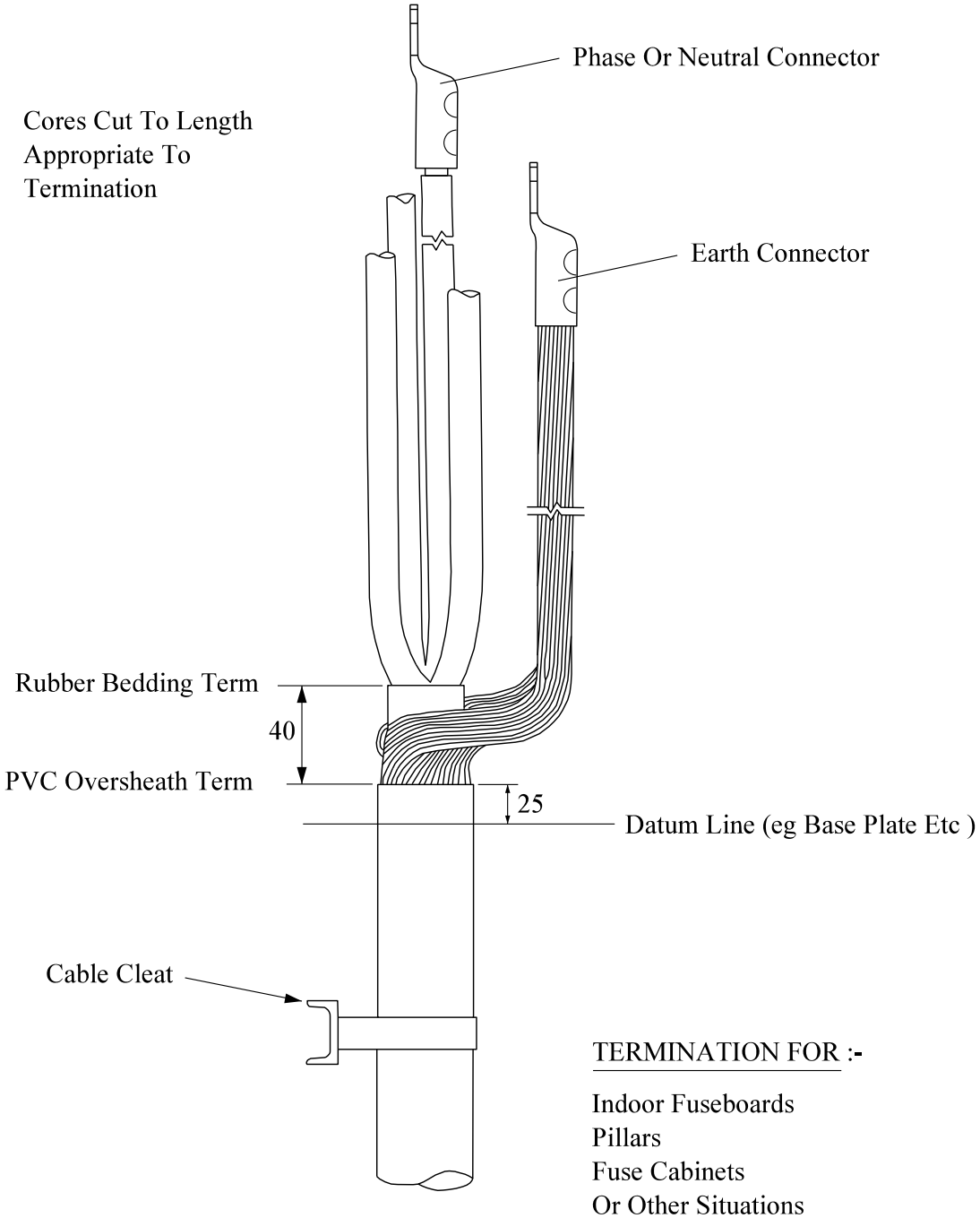
Cable ties
16 swg tinned copper wire
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.407

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.407.1** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Set and mark cable to length (100mm above termination position)	4
3.	Remove PVC oversheath	6
4.	Prepare the earth wires for jointing	8
5.	Remove rubber bedding	9
6.	Set phase neutral cores and earth wires in position	--
7.	Cut and connect earth wires	29
8.	Cut and connect neutral and phase cores in turn	29
9.	Remove all temporary binders	--

All dimensions in mm.



TERMINATION FOR :-

Indoor Fuseboards
Pillars
Fuse Cabinets
Or Other Situations
Protected From The Weather

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Title: FOUR CORE WAVECON INDOOR TERMINATION GENERAL LAYOUT

Drg. No. LVJ 7.407.1

Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.408

FOUR CORE WAVECON MAINS CABLE ISOLATABLE MULTIWAY FUSEBOARD TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Pt 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.408

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	Quantity
Multiway Fuseboard	1
Lugs LVET 120-12	4
Lug BET 60-12	1

185 Wavecon

Multiway Fuseboard	1
Lugs LVET 185-12	4
Lug BET 120-12	1

300 Wavecon

Multiway Fuseboard	1
Lugs LVET 300-12	4
Lug BET 120-12	1

ADDITIONAL ITEMS FOR EACH TERMINATION

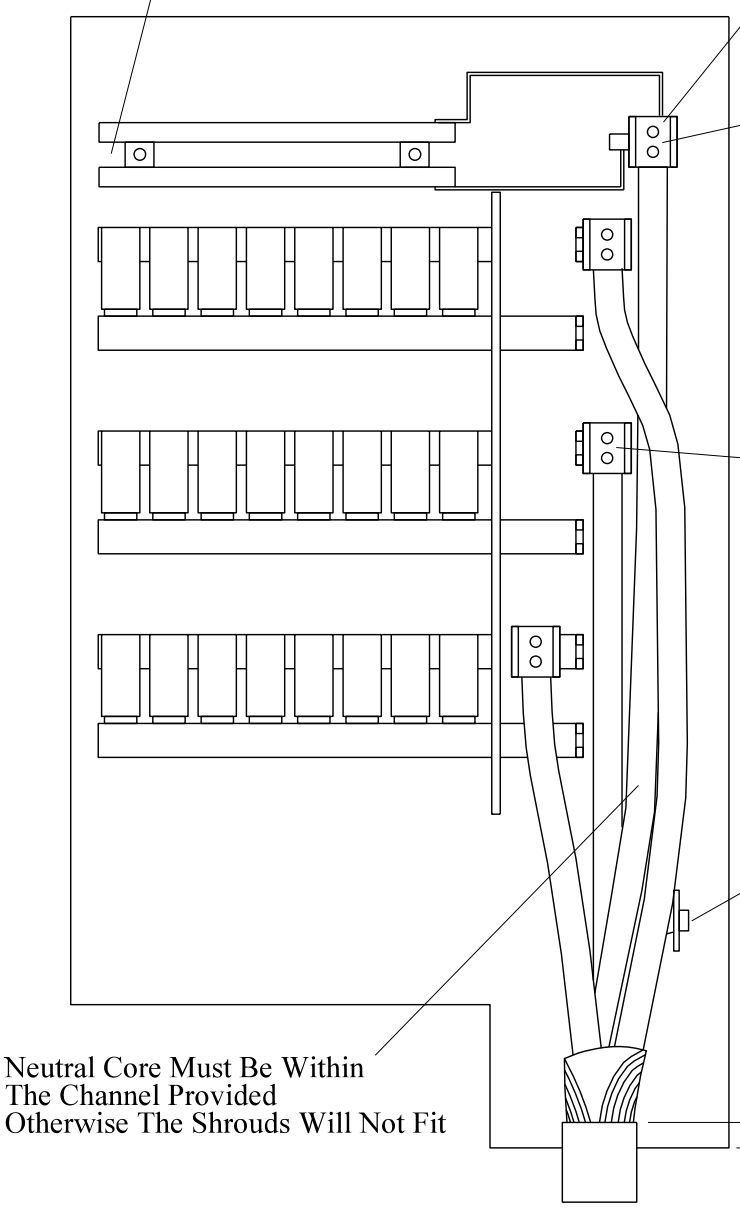
Cable ties
16 swg tinned copper wire
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.408

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **7.408.2** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Fix fuseboard in position	--
3.	Remove PME link to convert fuseboard to SNE	--
4.	Set and mark cable to length (100mm above termination position)	4
5.	Remove PVC oversheath	6
6.	Prepare the earth wires for jointing	8
7.	Remove rubber bedding	9
8.	Set phase cores and earth wires in position	--
9.	Cut and connect earth wires	29
10.	Cut and connect neutral and phase conductors in turn	29
11.	Remove all temporary binders	--
12.	Replace covers and seal	--

All dimensions in mm



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ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.409

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ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.410

FOUR CORE WAVECON MAINS CABLE OUTDOOR TERMINATION

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Pt 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.410

MATERIALS LIST

CABLE SIZE – 95 Wavecon

Item	**Quantity**
Kit SMOE 81925	1
70mm² PVC sheathed copper	8m

185 Wavecon

Kit SMOE 81926	1
120mm² PVC sheathed copper	8m

300 Wavecon

Kit SMOE 81927	1
120mm² PVC sheathed copper	8m

ADDITIONAL ITEMS FOR EACH TERMINATION

Cable ties
16 swg tinned copper wire
PVC tape
Scotchfil putty
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.410

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.410.1, 7.410.2, 7.410.3, 7.410.4, 7.410.5** whilst undertaking this Jointing Procedure	
1.	Open and prove cable **dead**	14
2.	Obtain the required termination height, measure and mark at the cut position	5
3.	Set and cut cable to length	4
4.	Remove PVC oversheath	6
5.	Prepare the earth wires for jointing	8
6.	Degrease the PVC oversheath	35
7.	Apply a single turn of Scotchfil putty around the oversheath	--
8.	Remove the temporary binder applied in 5	--
9.	Taking each copper wire in turn, bend back onto the putty applied in 7, ensure a gap is formed between each wire. Temporary secure with cable ties 100mm approx. below PVC termination point.	--
10.	Remove the rubber bedding	7
11.	Apply a further layer of Scotchfil putty over the copper wires and previous layer	--
12.	Position and shrink the breakout into position	26
13.	Cut the PVC sheathed copper into the required lengths	--
14.	Cut the Wavecon cores to length	--
15.	Pass the cut lengths of medium walled tube over the cores and breakout turrets and shrink into place	26
16.	Make the connections between the Wavecon cores and PVC sheathed copper tails	29

	Actions	General Requirements (ST: CA1C)
17.	Apply phase colour tapes to the ends of the PVC sheathed copper tails	--
18.	Slide the mastic lined tubes over the tails, position central to the connector and shrink into position, starting at the centre and working towards the ends	26
19.	Apply temporary PVC tape binders at intervals around the tails	--
20.	Slide the outer mastic lined tube over the bunched tails, centralize over the connector area and shrink into position, starting at the centre and working towards the ends	26
21.	Form the earth wires into a conductor and secure at intervals with PVC tape	--
22.	Protect the earth wires with thin wall tube and black PVC tape	--

All dimensions in mm.

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All dimensions in mm

℄ Of Connectors

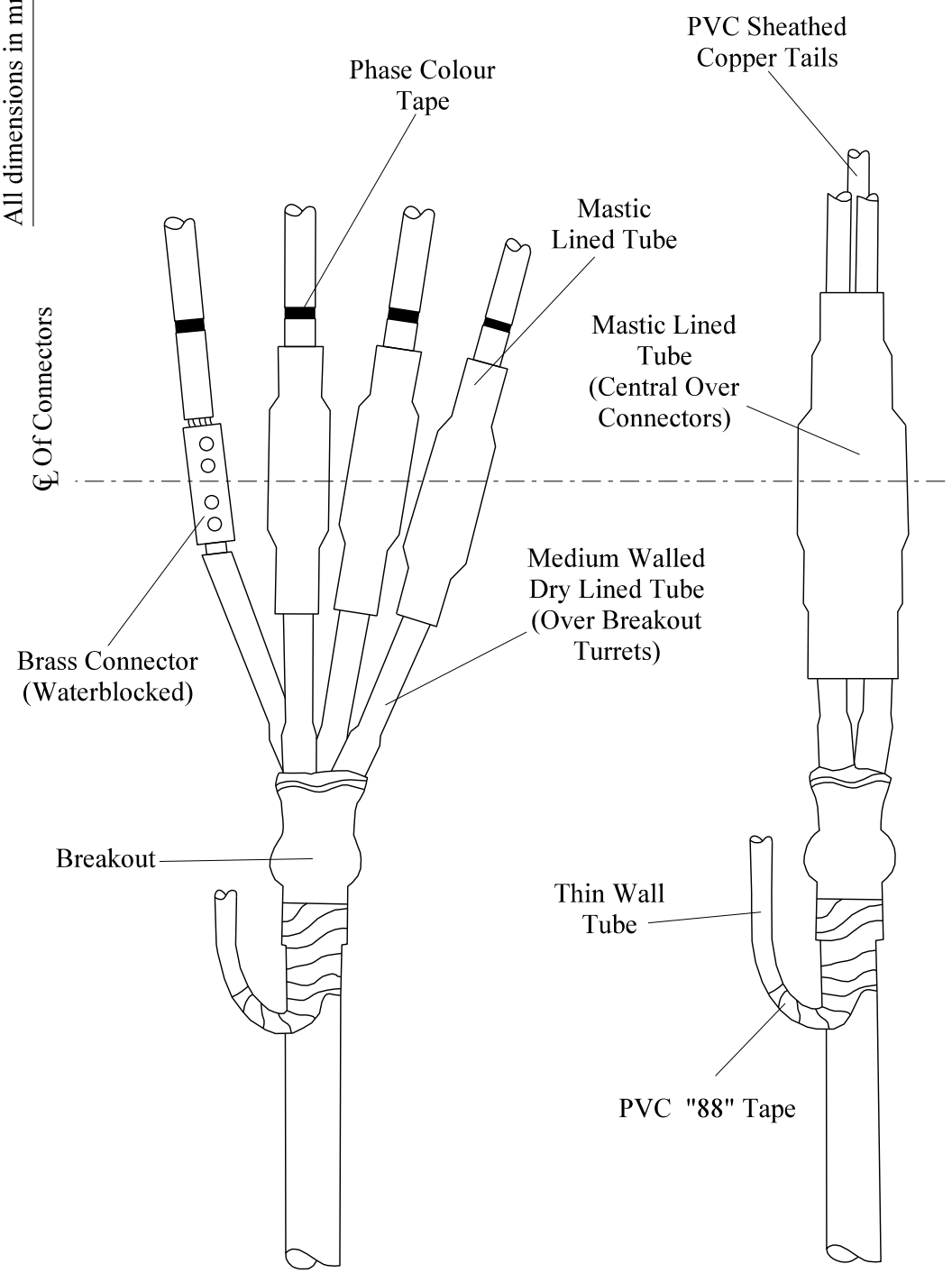

Fig 3

Fig 4

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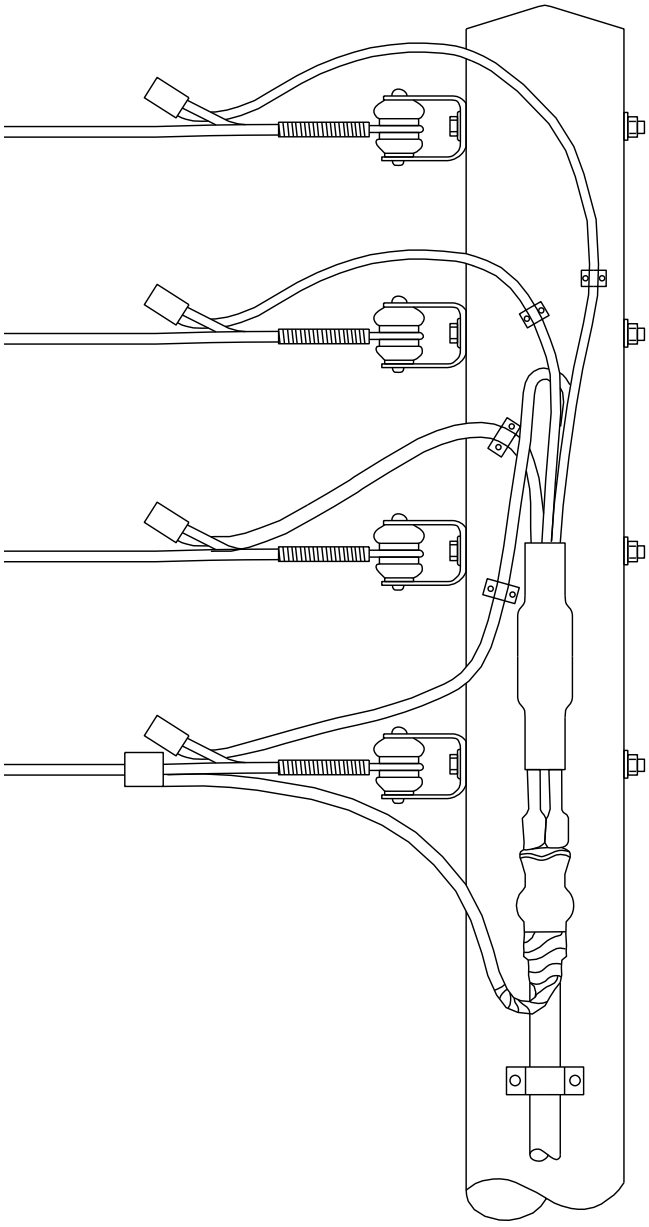
All dimensions in mm



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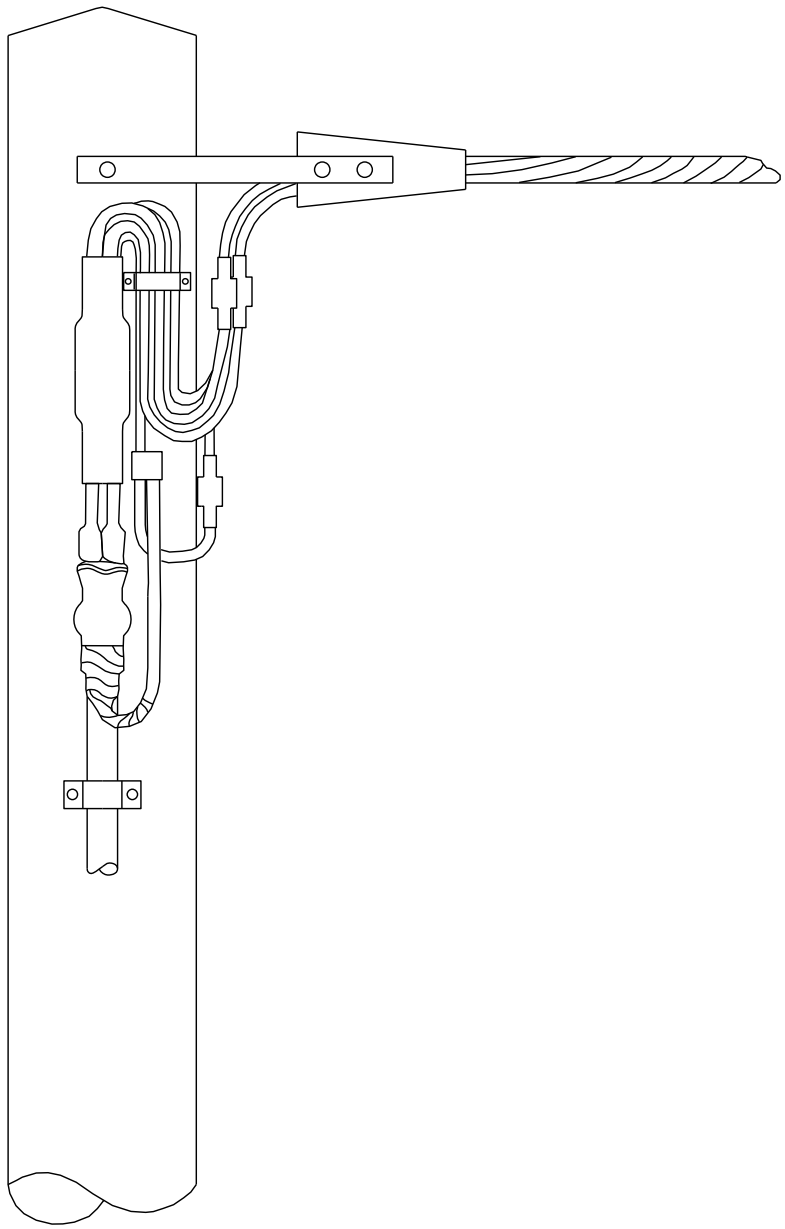
Title: FOUR CORE WAVECON
OUTDOOR TERMINATION - OPEN WIRE
GENERAL LAYOUT

Drg. No. LVJ 7.410.3

Rev No



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Title: FOUR CORE WAVECON
OUTDOOR TERMINATION - ABC LINE
GENERAL LAYOUT

Drg. No. LVJ 7.410.4

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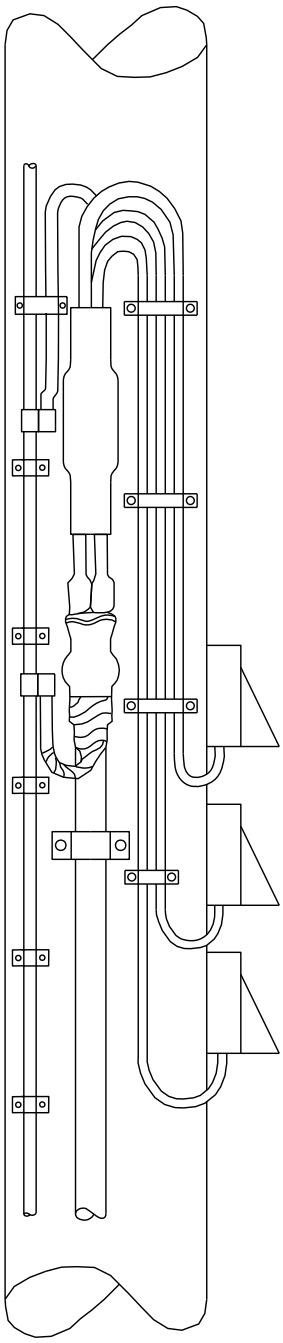
All dimensions in mm



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Title: FOUR CORE WAVECON
OUTDOOR TERMINATION - FUSES
GENERAL LAYOUT

Drg. No. LVJ 7.410.5

Rev No

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.411

SINGLE CORE SOLIDAL AWA MAINS CABLE TERMINATION - EARTHED

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Pt 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.411

MATERIALS LIST

CABLE SIZE –600 Solidal (per cable)

Item	Quantity
Lug	1
Gland 422AL 58	1
Heatshrink tube WCSM 85/25 x 250	1
Lug BET 120-12	1

740 Solidal (per cable)

Lug	1
Gland 422AL 59	1
Heatshrink tube WCSM 85/25 x 250	1
Lug BET 120-12	1

ADDITIONAL ITEMS FOR EACH TERMINATION

Cable ties
16 swg tinned copper wire
PVC tape
35mm² PVC sheathed (green/yellow) copper
Penetrox
De-solvit 1000FD
Workhorse dry wipes
Solvent wipes

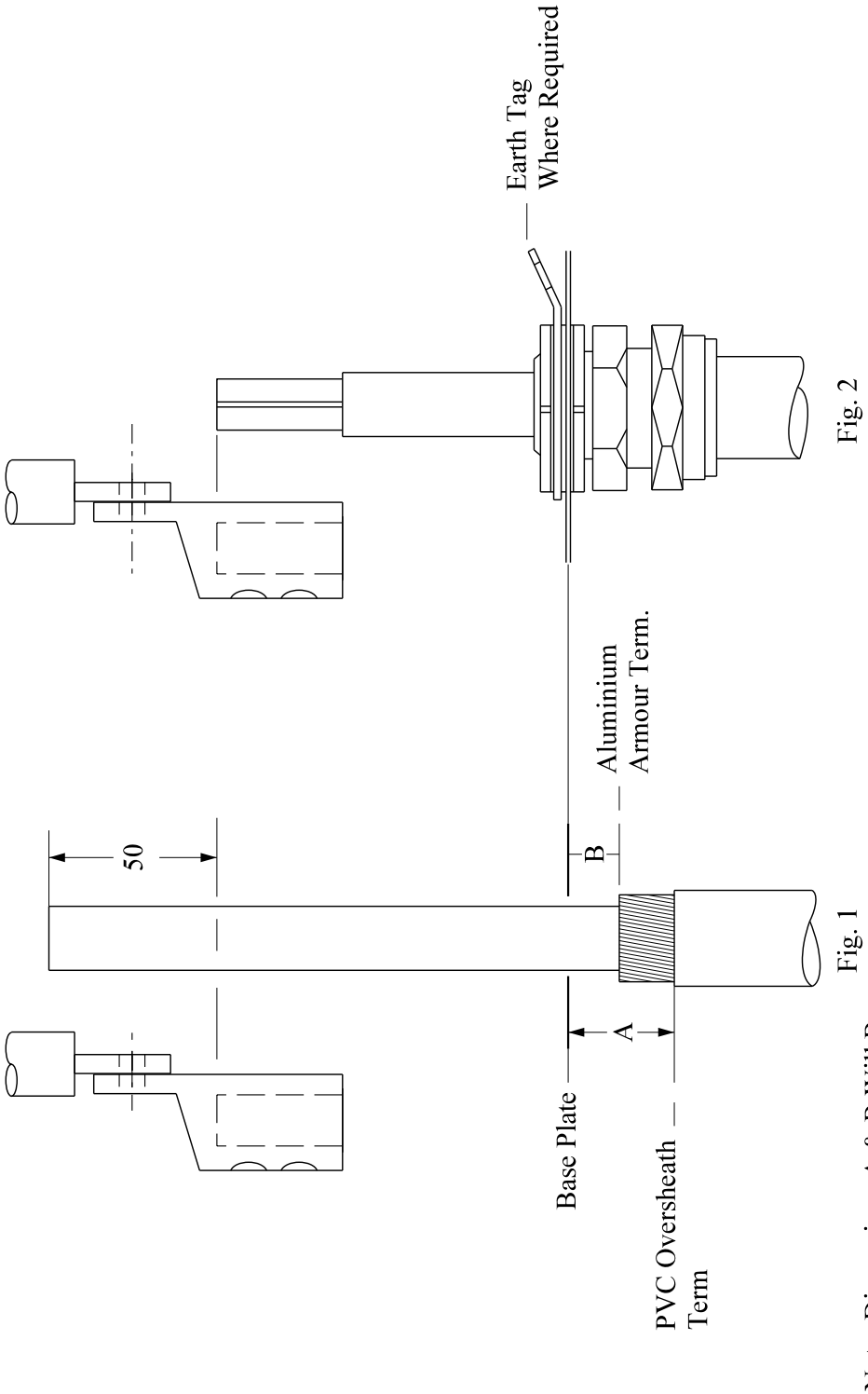
Note: - 36078 lugs are blank palm and will require drilling.

Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.411

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.411.1, 7.411.2** whilst undertaking this Jointing Procedure	
1.	Set and mark cable, cut to length (100mm above termination point)	4
2.	Prepare cable armour gland for jointing	24
3.	Remove PVC oversheath – Fig 1	6
4.	Terminate aluminium wire armour – Fig 1 **Note: -** The armour may be aluminium strip, treat as aluminium wire.	24
5.	Fit armour gland to cable	24
6.	Position cable gland to base plate – Fig 2	--
7.	Cut core and fit lug to conductor – Fig 1 & 2	29
8.	Apply heatshrink tube to lug and conductor – Fig 4	26
9.	Make connection to busbar	29
10.	Fit cable gland to base plate, earth armour glands to earth reference point	24

All dimensions in mm



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LVJ 7.411.1	

All dimensions in mm

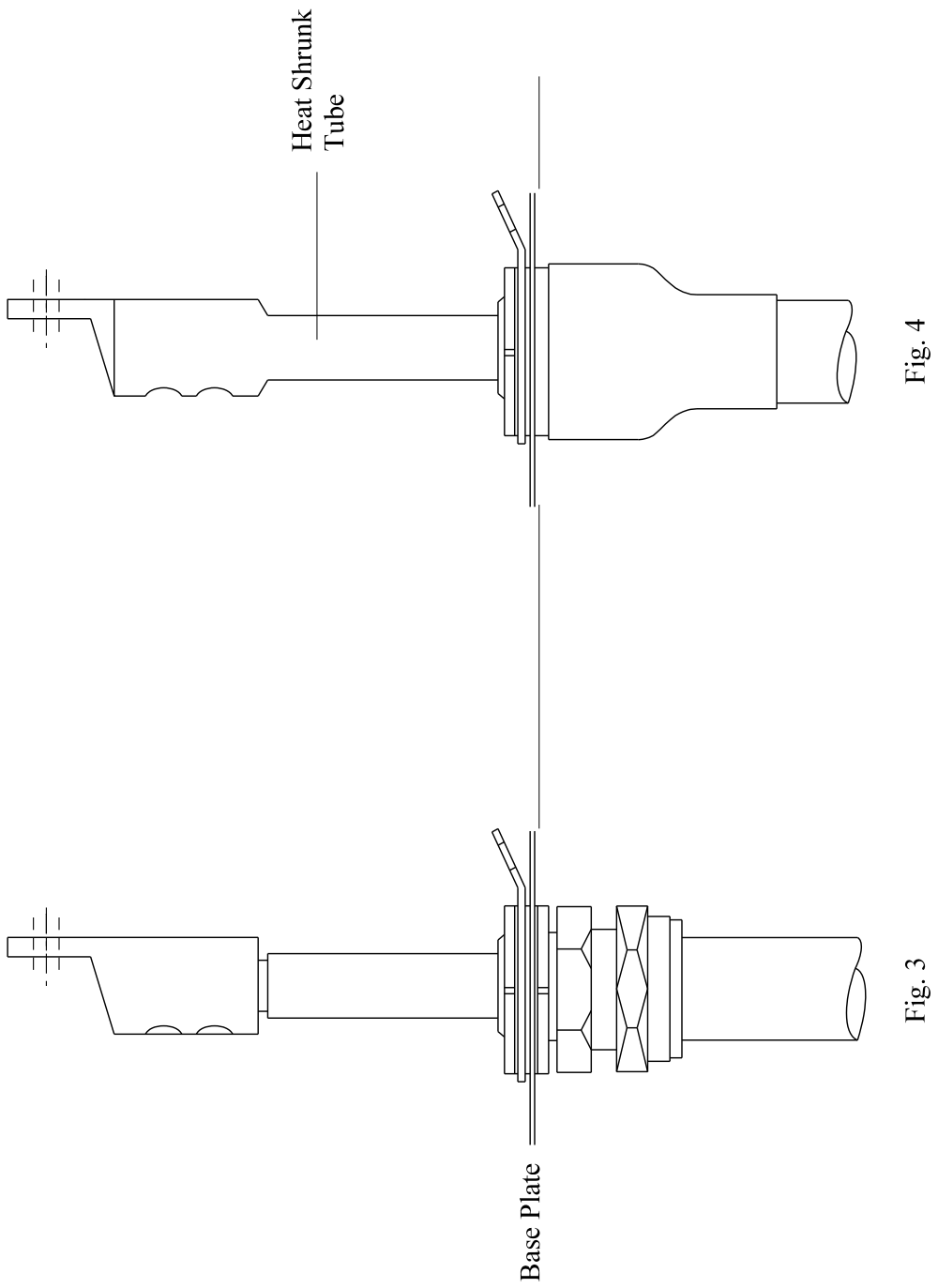

Fig. 4

Fig. 3

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LVJ 7.411.2	

ST: CA1G/7 PROCEDURES FOR MAKING LV MAINS CABLE TERMINATIONS

JOINTING PROCEDURE 7.412

SINGLE CORE SOLIDAL AWA MAINS CABLE TERMINATION - UNEARTHED

FOR DEAD CABLES ONLY

This procedure is to be read in conjunction with the appropriate General Requirements ST: CA1C Section 6 Pt 1 of the LV Jointing Manual

JOINTING PROCEDURE 7.412

MATERIALS LIST

CABLE SIZE –600 Solidal (per cable)

Item	**Quantity**
Lug	1
Heatshrink tube WCSM 85/25 x 250	1

740 Solidal (per cable)

Lug	1
Heatshrink tube WCSM 85/25 x 250	1

ADDITIONAL ITEMS FOR EACH TERMINATION

Cable ties
16 swg tinned copper wire
PVC tape
Penetrox
Desolvit 1000FD
Workhorse dry wipes
Solvent wipes

Note: - Individual material item numbers (SHOPS) are to be found in Section 4 – Part 1 of the LV Mains Jointing Manual.

JOINTING PROCEDURE 7.412

Actions		General Requirements (ST: CA1C)
	Refer to Drawing **LVJ 7.412.1, 7.412.2** whilst undertaking this Jointing Procedure	
1.	Set up, mark and cut cable to length (100mm above termination point)	4
2.	Remove PVC oversheath	6
3.	Terminate aluminium wire armour – Fig 1, 2 & 3 **Note: -** The armour may be aluminium strip, treat as aluminium wire.	--
4.	Cut core to length and fit lug – Fig 1 & 2	29
5.	Apply heatshrink tube to lug and core – Fig 4	26
6.	Make connection to busbar	29

All dimensions in mm

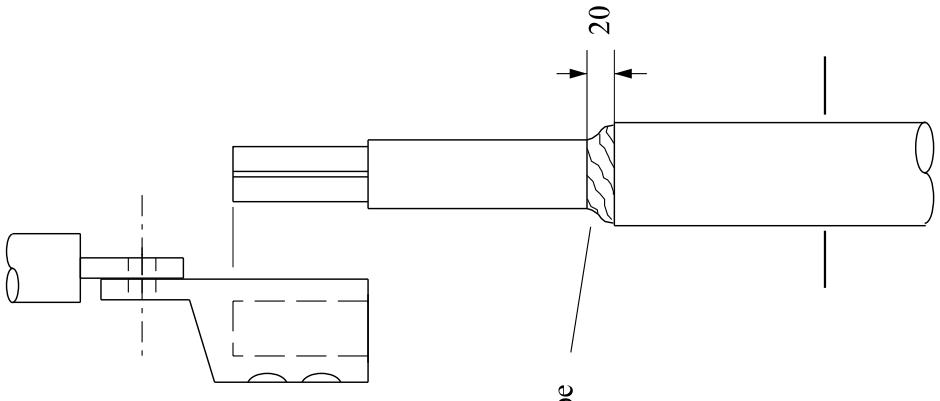

Fig. 2

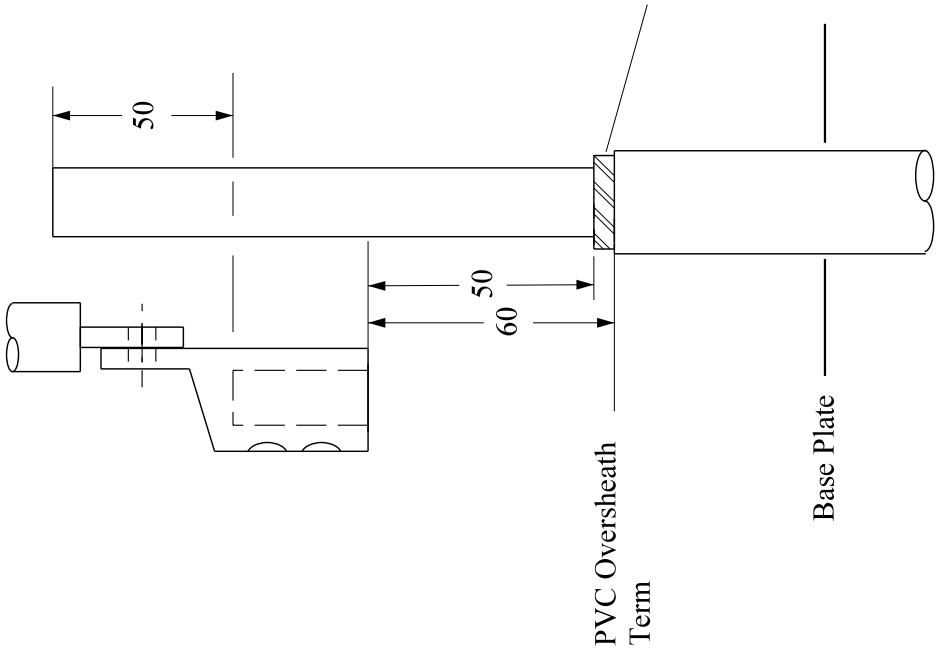

Fig. 1

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All dimensions in mm

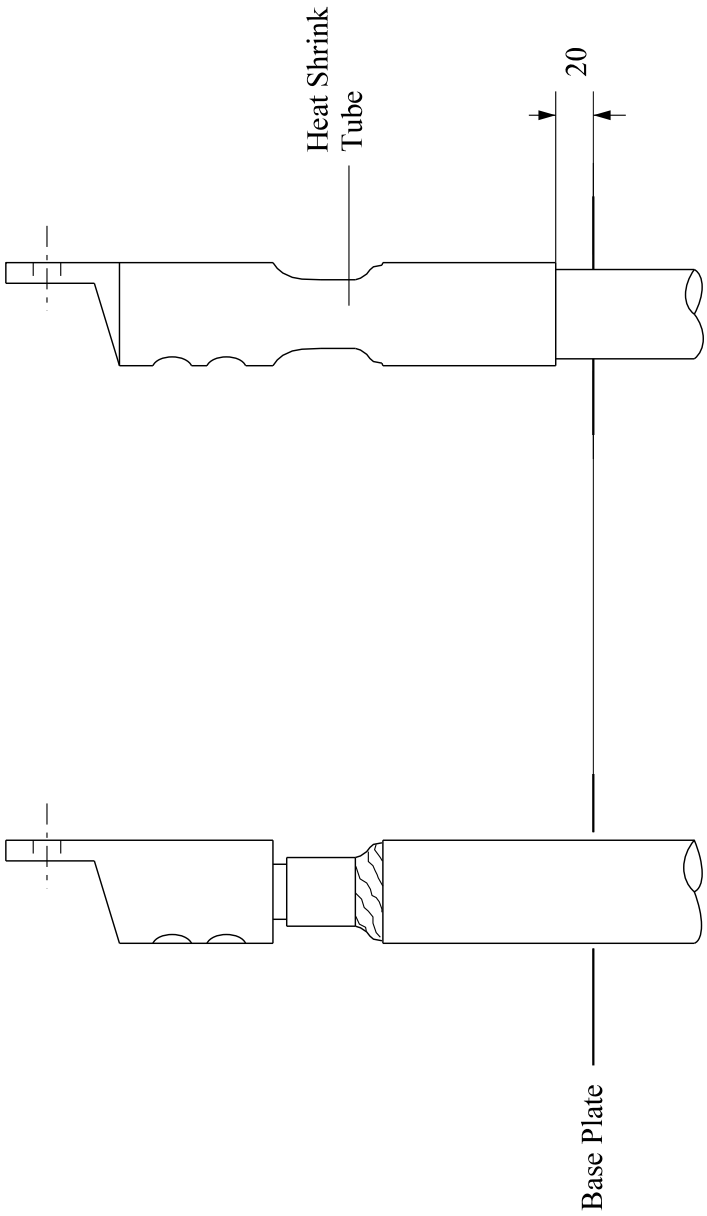

Fig. 4

Fig. 3

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Rev No

APPENDIX A

SUPERSEDED DOCUMENTATION

This Standard Technique supersedes ST:CA1G/6 dated June 2014 which has now been withdrawn.

APPENDIX B

ASSOCIATED DOCUMENTATION

ST: CA1A, ST: CA1C, ST: CA1 D, ST: CA1E, ST: CA1F, ST: CA1H, ST: CA1I, ST: CA1U, ST: CA1W, ST: CA1X, ST: CA1Y, ST: CA1Z, ST: CA1AA, ST: CA1AB, ST: CA7A, ST: CA7B, ST: CA7C, ST: CA7D.

APPENDIX C

IMPACT ON COMPANY POLICY

This document complies with the latest ST: HS8H.

APPENDIX D

IMPLEMENTATION OF POLICY

This Standard Technique shall be communicated to all relevant WPD engineers and site staff at the next Team Briefing by the Team Manager

APPENDIX E

KEY WORDS

LV Mains terminations.