

Company Directive

STANDARD TECHNIQUE : CA1F/3

Relating to the Procedures for Making Low Voltage Mains Cable Stop Ends

This Standard Technique document contains all the approved mains cable stop ends, which shall be implemented in conjunction with the appropriate General Requirements contained in ST: CA1C/4.

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: **Peter White**

Implementation Date: **June 2012**

Approved by:



Policy Manager

Date:

1 June 2012

ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS CABLE STOP ENDS

INTRODUCTION

This Standard Technique document contains all the approved mains cable stop ends, which shall be implemented in conjunction with the appropriate General Requirements contained in ST: CA1C/4, including:

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

Note: Resin encapsulated joints must not be broken down

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

CONTENTS

- 7.301 Three Core Wavecon
- 7.302 Three Core Wavecon including Services
- 7.303 Four Core Wavecon
- 7.304 Four Core Wavecon including Services
- 7.305 Four Core Wavecon – CNE
- 7.306 Four Core Wavecon – CNE including Services
- 7.307 Consac
- 7.308 Consac including Services
- 7.309 PILC
- 7.310 PILC including Services
- 7.311 PILC – CNE
- 7.312 PILC – CNE including Services

Note: - Any reference to hybrid equally applies to plain concentric

**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.301

**THREE CORE WAVECON MAINS CABLE
STOP END**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.301

MATERIALS LIST

CABLE SIZE – 70/95/120/185/300 Wavecon

Item	Quantity
Shell 1583	1
Resin	10 litre
Connector BCNE 3	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation Patch
Black Cotton Tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

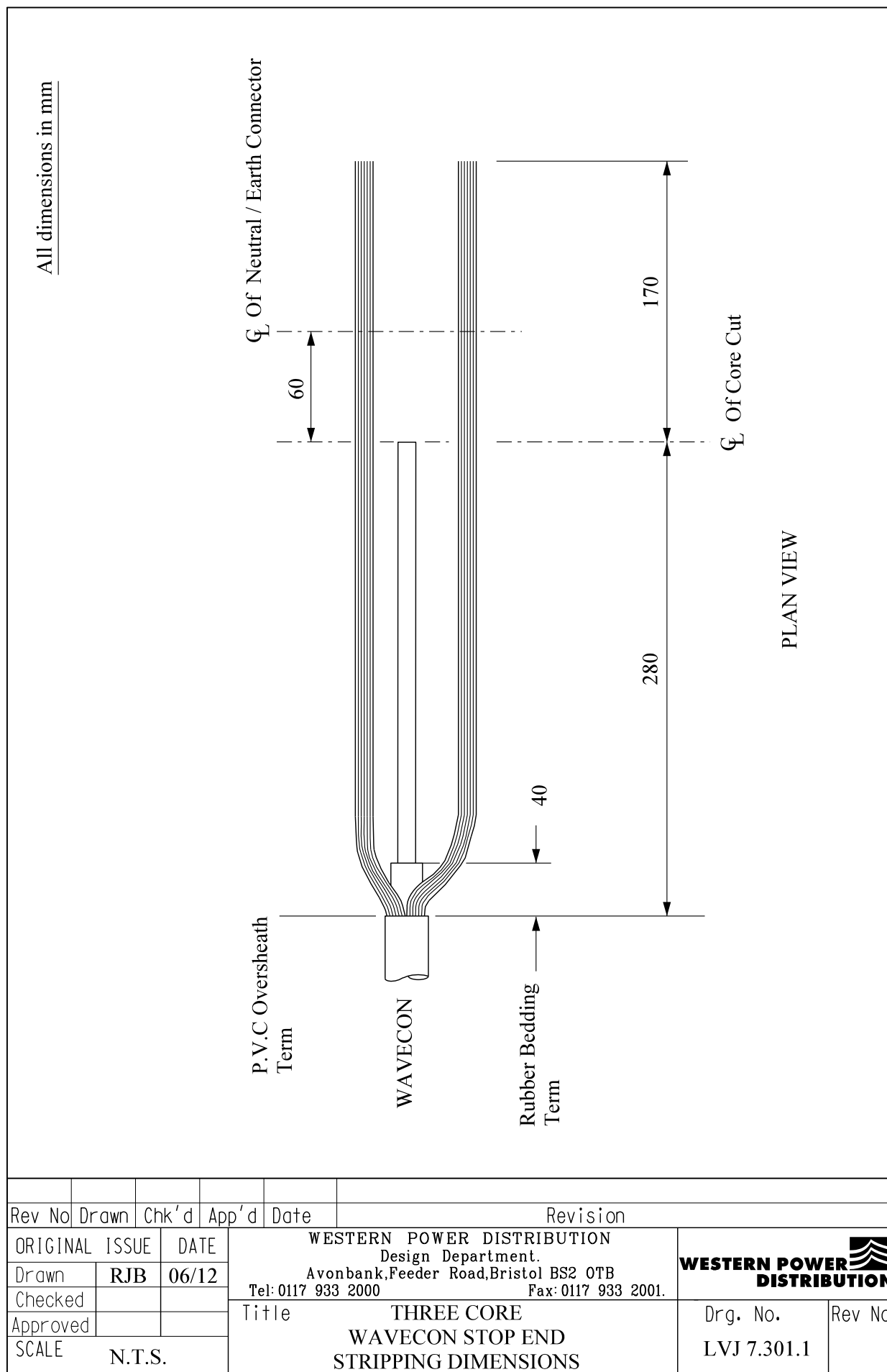
JOINTING PROCEDURE 7.301

Actions

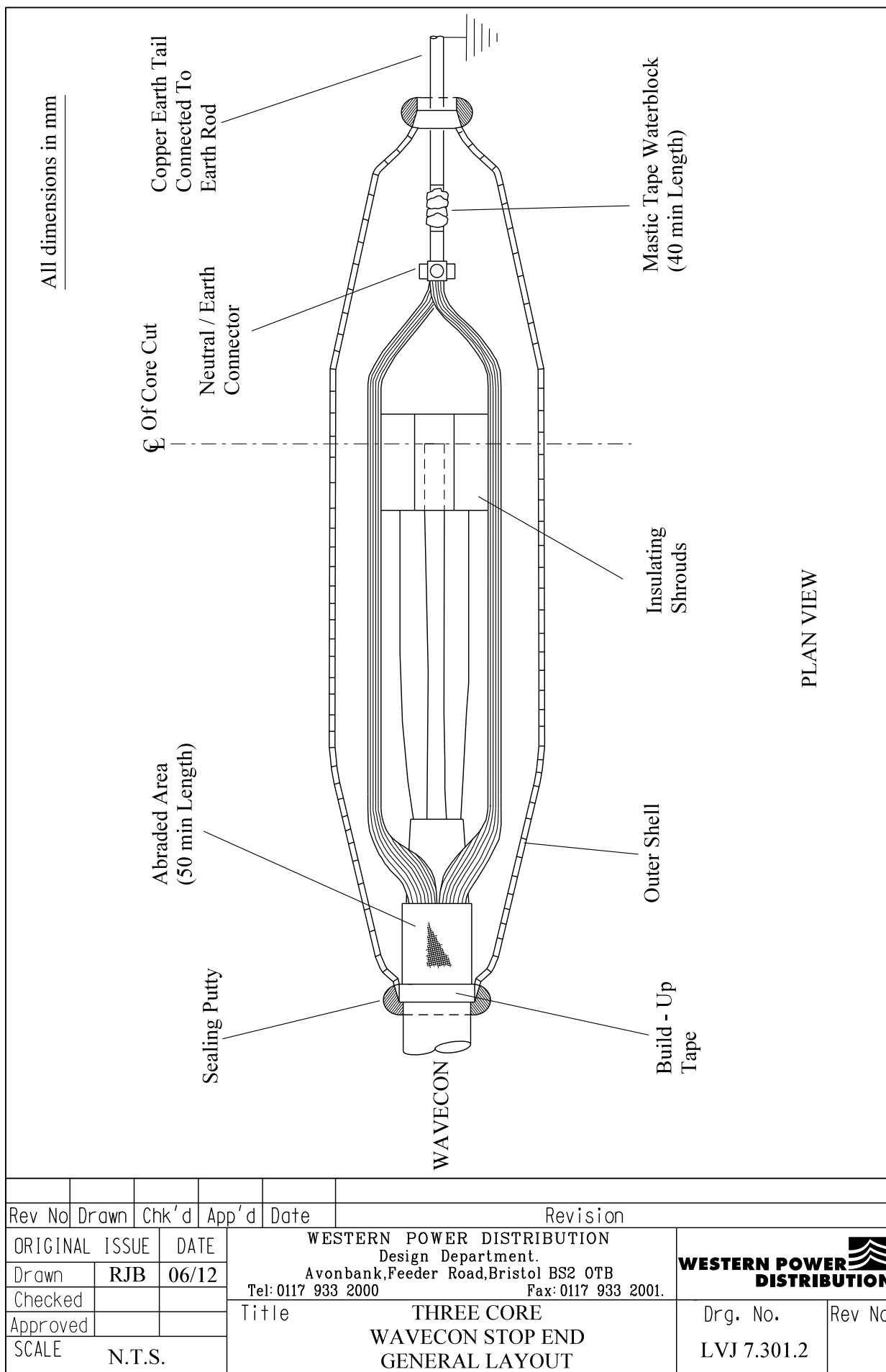
General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.301.1, 7.301.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Install earth rod and connect copper earth tail	34
3.	Open and cut cable	14
4.	Prepare the neutral/earth wires for jointing	8
5.	Connect copper earth tail to neutral/earth wires	29
6.	Remove temporary earth connection applied in 3	--
7.	Form neutral/earth wires into their final position	--
8.	Abrade and build up oversheath	32
9.	Thoroughly degrease the joint	35
10.	Apply mastic water block to copper earth tail	33
11.	Remove temporary binders	--
12.	Prepare and fit shell, ensuring 15mm clearance	35
13.	Mix and pour resin	37



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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.302

**THREE CORE WAVECON MAINS CABLE
STOP END INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.302

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT (HYBRID SERVICES)							
	1 x 1 ph	2 x 1 ph	3 x 1 ph	4 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph	2 x 1 ph + 1 x 3 ph
95W	SES 1	SES 4	SES 7	SES 10	SES 13	SES 16	SES 19	SES 22
185W	SES 2	SES 5	SES 8	SES 11	SES 14	SES 17	SES 20	SES 23
300W	SES 3	SES 6	SES 9	SES 12	SES 15	SES 18	SES 21	SES 24

Note: - 70mm² and 120mm² Wavecon used in South Wales will be sized as 95mm² (70) and 185mm² (120).

Key: - 95W = 95mm² Wavecon
185W = 185mm² Wavecon
300W = 300mm² Wavecon

JOINTING PROCEDURE 7.302

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN	CONNECTORS				EARTH TAIL	EARTH ROD
	1583	1582	5 litre	MSIP 185	MSIP 300	BCNE 3	70mm ² LINE TAP	LVCU 1700/5	
SES1	1		2	1		2	1	1	1
SES2	1		2	1		2	1	1	1
SES3		1	3		1	2	1	1	1
SES4	1		2	1		2	1	1	1
SES5	1		2	1		2	1	1	1
SES6		1	3		1	2	1	1	1
SES7		1	3	2		2	1	1	1
SES8		1	3	2		2	1	1	1
SES9		1	3		2	2	1	1	1
SES10		1	3	2		2	1	1	1
SES11		1	3	2		2	1	1	1
SES12		1	3		2	2	1	1	1
SES13		1	3	3		2	1	1	1
SES14		1	3	3		2	1	1	1
SES15		1	3		3	2	1	1	1
SES16		1	3	3		2	1	1	1
SES17		1	3	3		2	1	1	1
SES18		1	3		3	2	1	1	1
SES19		1	3	3		2	1	1	1
SES20		1	3	3		2	1	1	1
SES21		1	3		3	2	1	1	1
SES22		1	3	3		2	1	1	1
SES23		1	3	3		2	1	1	1
SES24		1	3		3	2	1	1	1

JOINTING PROCEDURE 7.302 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
Emery cloth
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

JOINTING PROCEDURE 7.302

Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.302.1, 7.302.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

WAVECON CABLE - Preparation

- | | | |
|----|--------------------|----|
| 3. | Open and cut cable | 14 |
|----|--------------------|----|

PVC SERVICE CABLE – Preparation to completion of joint

- | | | |
|----|-----------------------|----|
| 4. | Open and cut cable(s) | 17 |
|----|-----------------------|----|

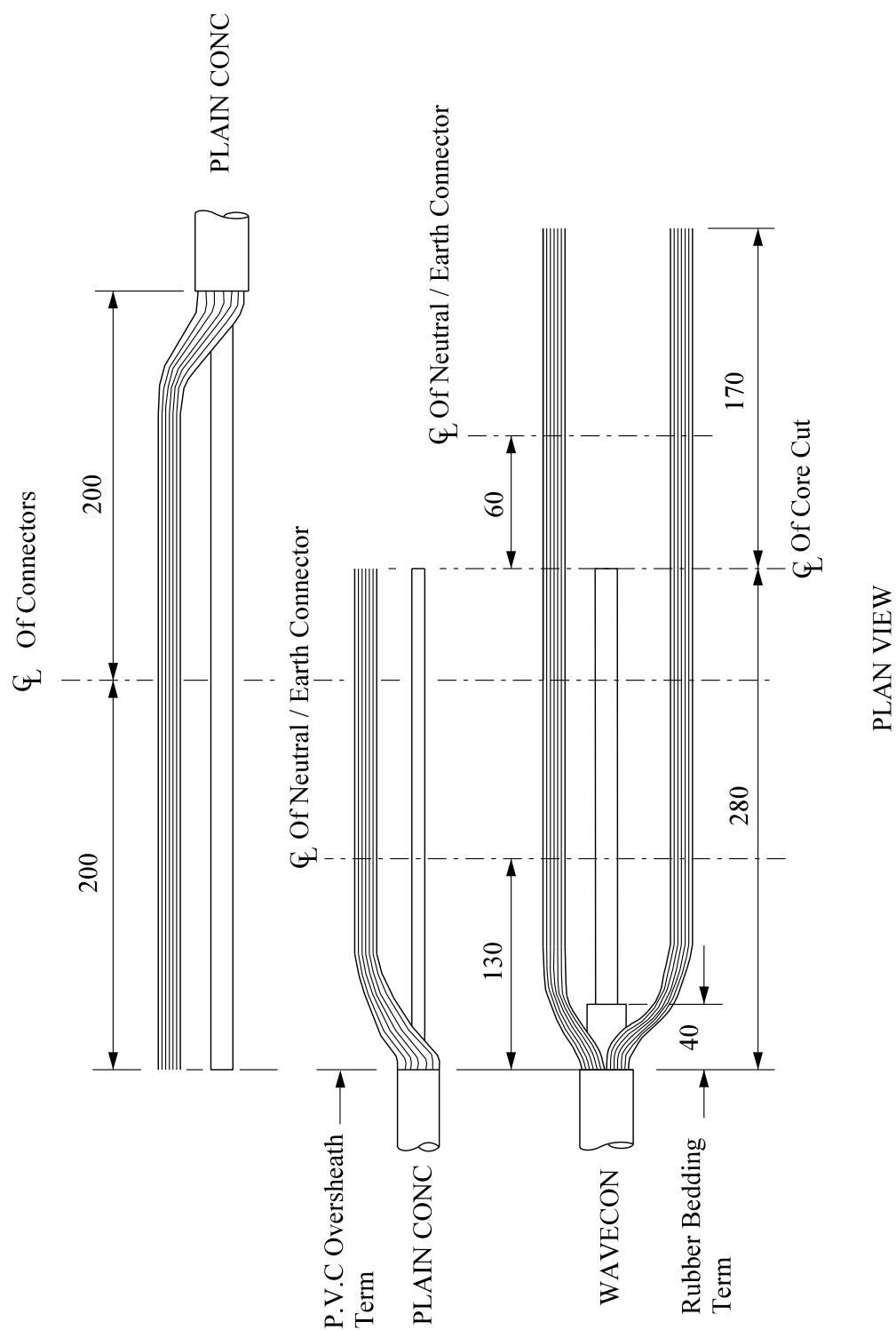
COMPLETION OF JOINT


- | | | |
|-----|--|----|
| 5. | Prepare the neutral/earth wires for jointing | 8 |
| 6. | Set cores in joint position | 27 |
| 7. | Connect copper earth tail to Wavecon neutral/earth wires | 29 |
| 8. | Remove temporary earth connection applied in 3 | -- |
| 9. | Connect neutral/earth wires of service cable(s) | 29 |
| 10. | Apply temporary shrouding | 21 |
| 11. | Make phase connection(s) | 29 |
| 12. | Remove temporary shrouding applied in 10 | -- |
| 13. | Form neutral/earth wires into their final position | -- |
| 14. | Abrade and build up oversheath | 32 |
| 15. | Thoroughly degrease the joint | 30 |
| 16. | Apply mastic water block to copper earth tail | 33 |
| 17. | Remove temporary binders | -- |

JOINTING PROCEDURE 7.302 – Continued

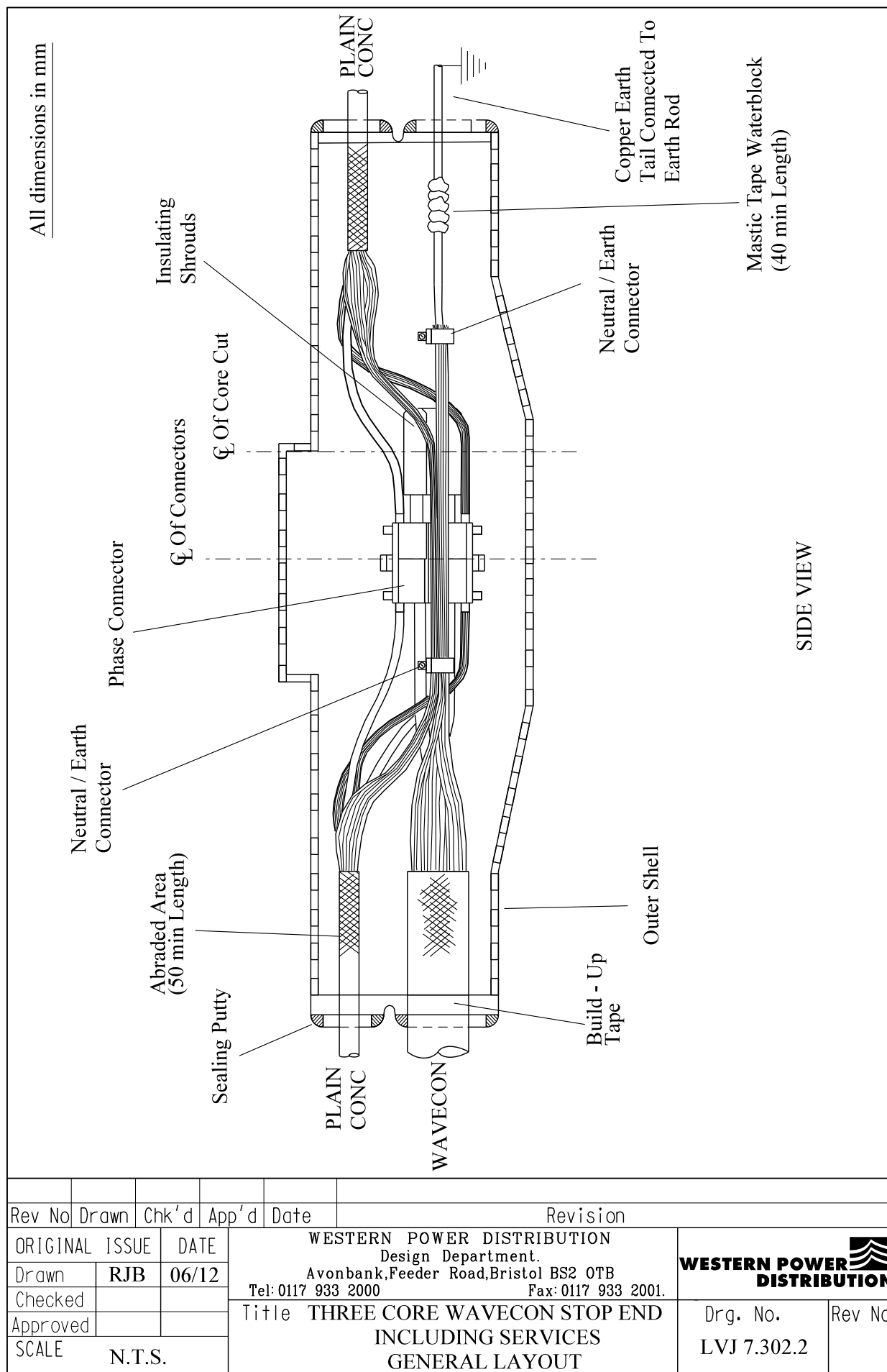
Actions	General Requirements (ST: CA1C/4)
18. Prepare and fit shell, ensuring 15mm clearance	36
19. Mix and pour resin	37

All dimensions in mm



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ORIGINAL ISSUE		DATE	WESTERN POWER DISTRIBUTION Design Department. Avonbank,Feeder Road,Bristol BS2 0TB Tel:0117 933 2000 Fax:0117 933 2001.			 WESTERN POWER DISTRIBUTION	
Drawn	RJB	06/12	Title				
Checked			THREE CORE WAVECON STOP END INCLUDING SERVICES STRIPPING DIMENSIONS			Drg. No. LVJ 7.302.1	Rev No
Approved							
SCALE		N.T.S.					

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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.303

**FOUR CORE WAVECON MAINS CABLE
STOP END**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.303

MATERIALS LIST

CABLE SIZE – 95/185/300 Wavecon

Item	Quantity
Shell 1582	1
Resin	13.5 litre (3 x 5 litre)
Connector BCNE 3	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation Patch
Black Cotton Tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

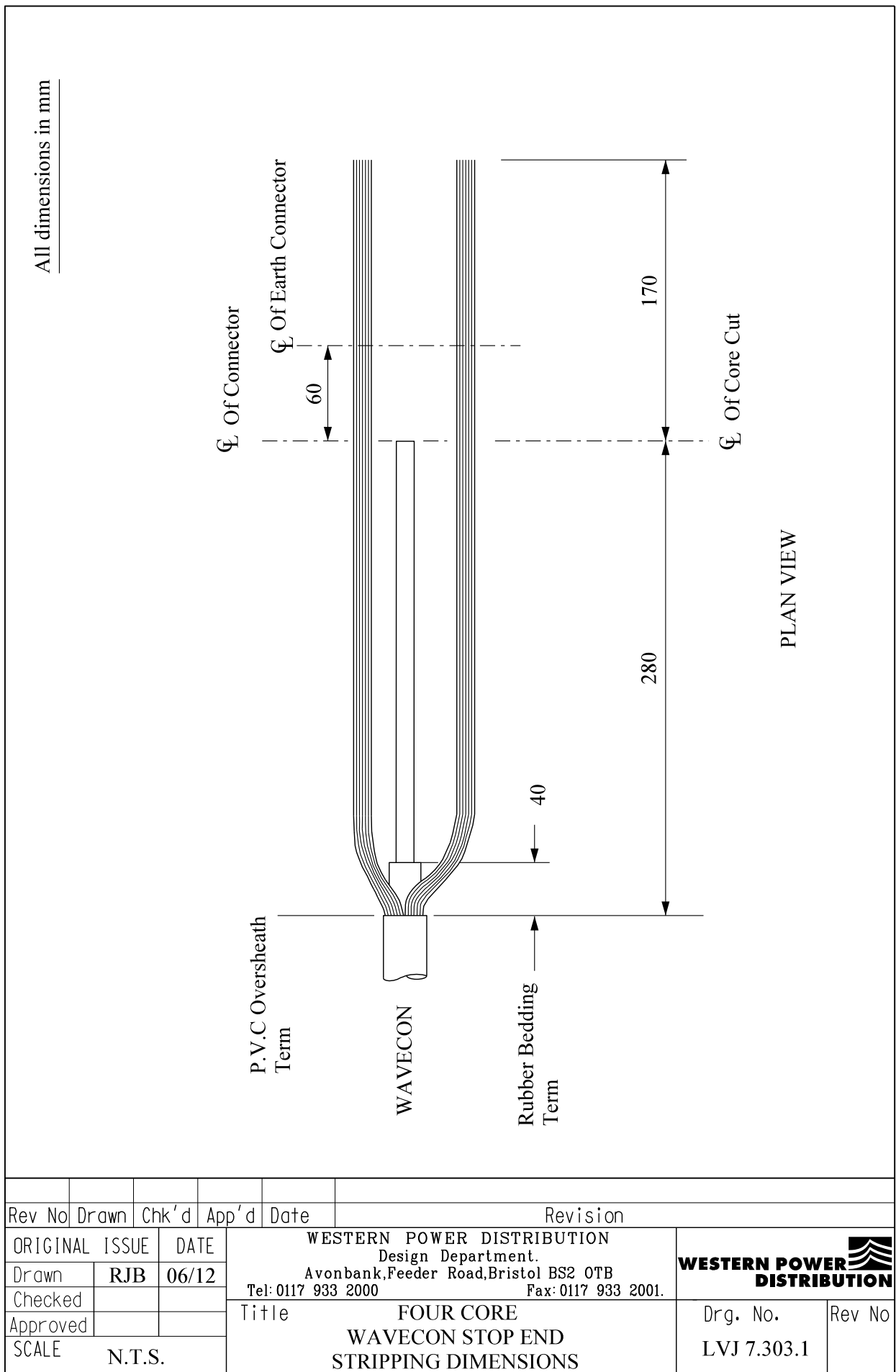
JOINTING PROCEDURE 7.303

Actions

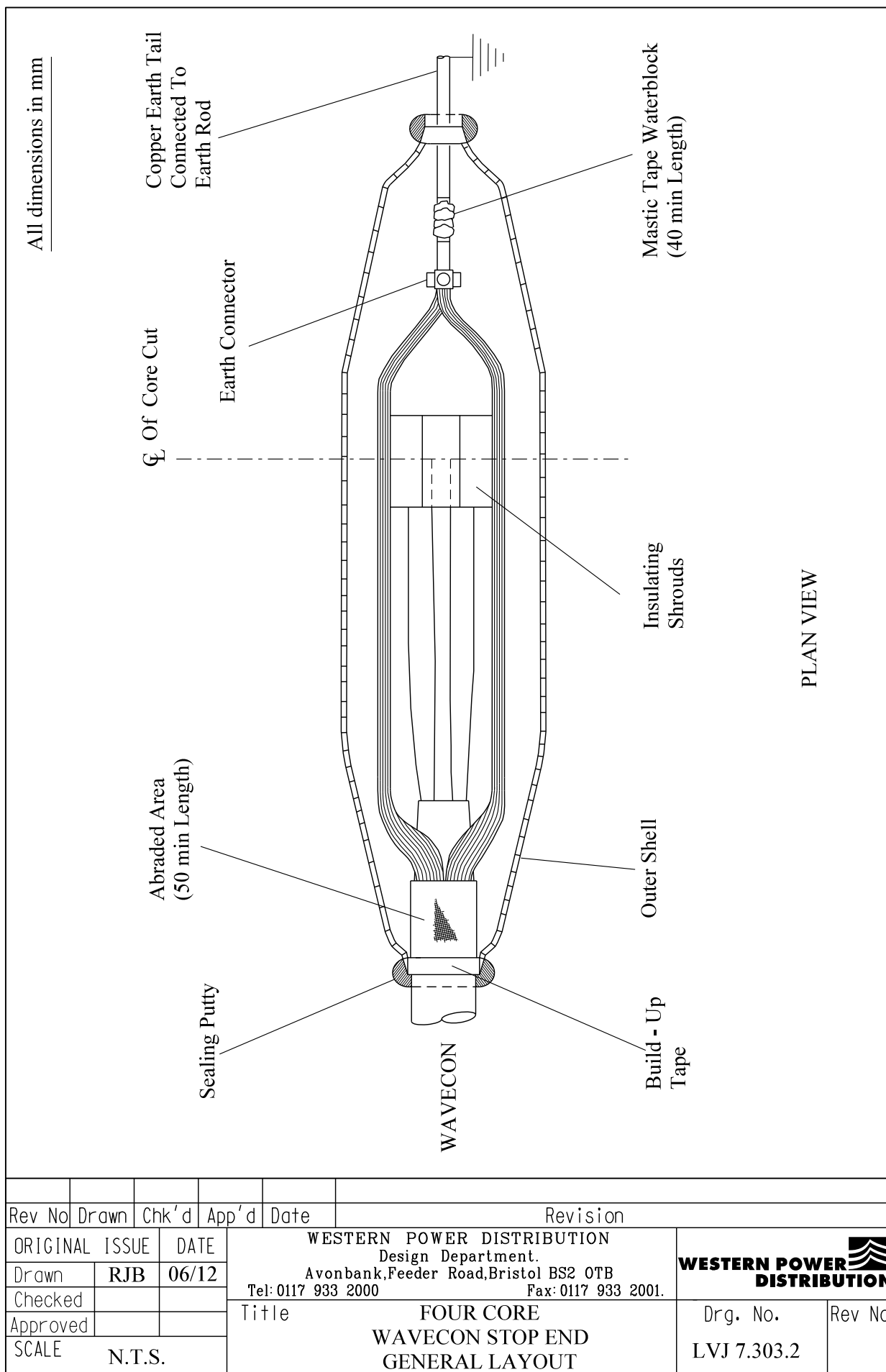
General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.303.1, 7.303.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Open and cut cable	14
3.	Prepare the earth wires for jointing	8
4.	Connect copper earth tail to earth wires	29
5.	Form earth wires into their final position	--
6.	Abrade and build up oversheath	32
7.	Thoroughly degrease the joint	35
8.	Apply mastic water block to copper earth tail	33
9.	Remove temporary binders	--
10.	Prepare and fit shell, ensuring 15mm clearance	36
11.	Mix and pour resin	37



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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.304

**FOUR CORE WAVECON MAINS CABLE
STOP END INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.304

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT (SPLIT CONC SERVICES)				
	1 x 1 ph	2 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph
95W	SES 25	SES 28	SES 31	SES 34	SES 37
195W	SES 26	SES 29	SES 32	SES 35	SES 38
300W	SES 27	SES 30	SES 33	SES 36	SES 39

Key: - 95W = 95mm² Wavecon
185W = 185mm² Wavecon
300W = 300mm² Wavecon

JOINTING PROCEDURE 7.304

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS				EARTH TAIL	EARTH ROD
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	BCNE 3	70mm ² LINE TAP	LVCU 1700/5	
SES25	1		2	1	2		2	1	1	1
SES26	1		2	1	2		2	1	1	1
SES27		1		3		2	2	1	1	1
SES28	1		2	1	2		2	1	1	1
SES29	1		2	1	2		2	1	1	1
SES30		1		3		2	2	1	1	1
SES31		1		3	4		2	1	1	1
SES32		1		3	4		2	1	1	1
SES33		1		3		4	2	1	1	1
SES34		1		3	4		2	1	1	1
SES35		1		3	4		2	1	1	1
SES36		1		3		4	2	1	1	1
SES37		1		3	4		2	1	1	1
SES38		1		3	4		2	1	1	1
SES39		1		3		4	2	1	1	1

JOINTING PROCEDURE 7.304 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
Emery cloth
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

JOINTING PROCEDURE 7.304

Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.304.1, 7.304.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

WAVECON CABLE - Preparation

- | | | |
|----|--------------------------------------|----|
| 3. | Open and cut cable | 14 |
| 4. | Prepare the earth wires for jointing | 8 |

PVC SERVICE CABLE - Preparation

- | | | |
|----|--|----|
| 5. | Open and cut cable | 17 |
| 6. | Prepare the neutral and earth wires for jointing | 8 |

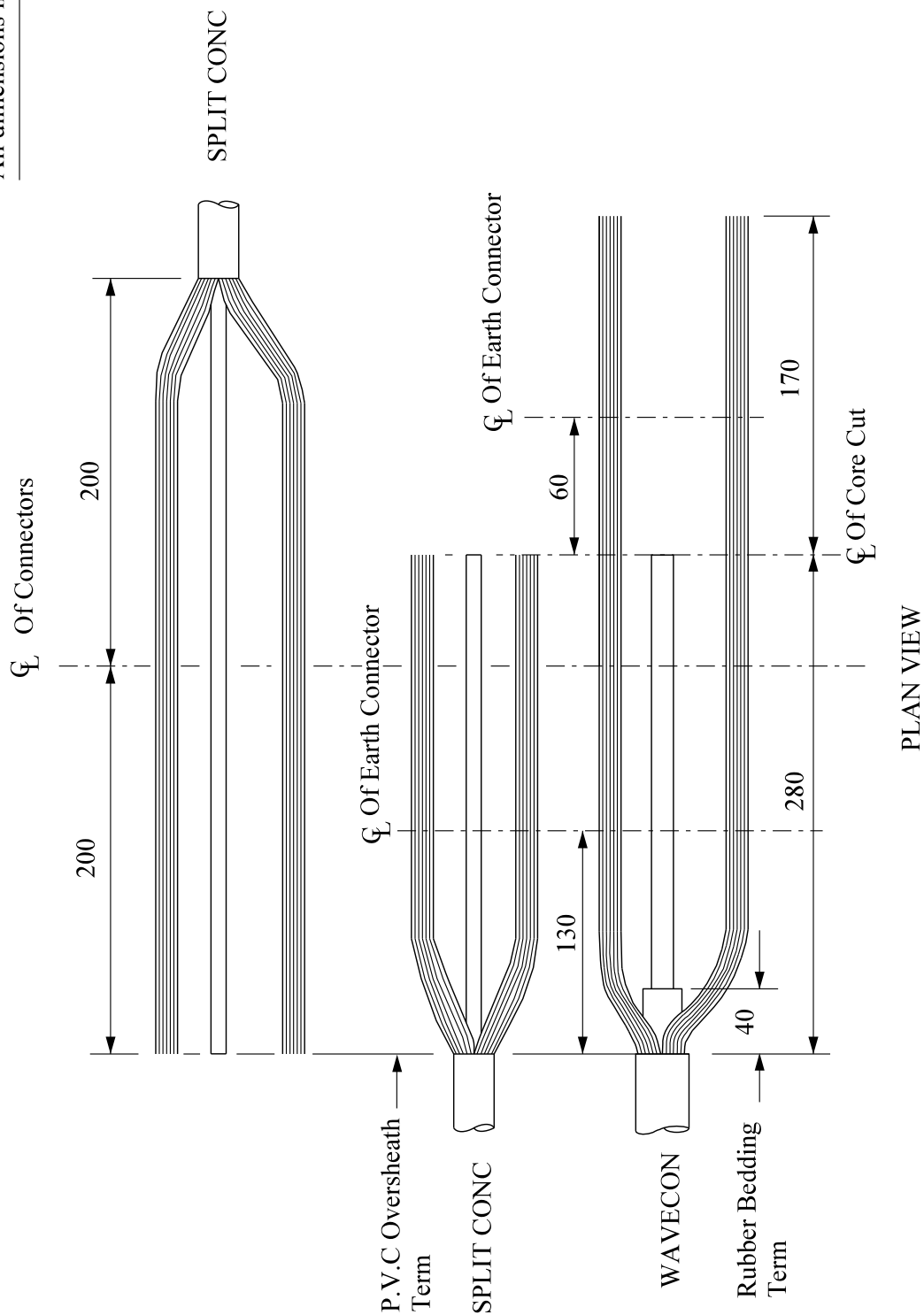
COMPLETION OF JOINT

- | | | |
|-----|--|----|
| 7. | Set cores in joint position | 27 |
| 8. | Connect copper earth tail to Wavecon earth wires | 29 |
| 9. | Connect earth wires of service cable(s) | 29 |
| 10. | Apply temporary shrouding | 21 |
| 11. | Make service neutral connection(s) | 29 |
| 12. | Make phase connection(s) | 29 |
| 13. | Remove temporary shrouding applied in 10 | -- |
| 14. | Form earth wires into their final positions | -- |
| 15. | Abrade and build up oversheaths | 32 |


JOINTING PROCEDURE 7.304 - Continued

Actions	General Requirements (ST: CA1C/4)
16. Thoroughly degrease the joint	35
17. Apply mastic waterblock to copper earth tail	33
18. Remove temporary binders	--
19. Prepare and fit shell, ensuring 15mm clearance	36
20. Mix and pour resin	37

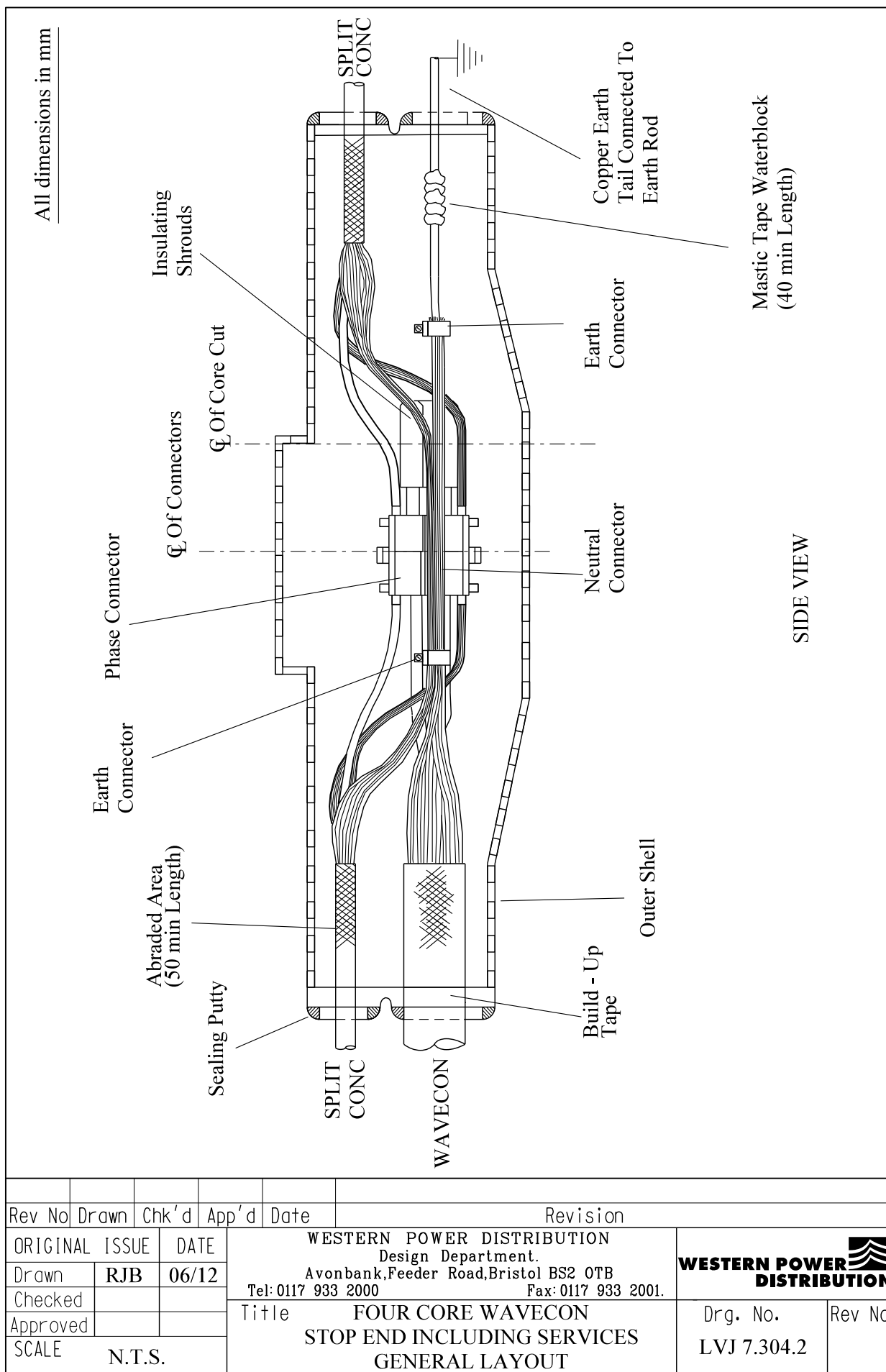
All dimensions in mm



NOTE:- This Joint Will Take 2 x Single Phase Or 2 x Three Phase Services Only.

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ORIGINAL ISSUE		DATE	WESTERN POWER DISTRIBUTION Design Department. Avonbank,Feeder Road,Bristol BS2 0TB Tel: 0117 933 2000 Fax: 0117 933 2001.			 WESTERN POWER DISTRIBUTION
Drawn	RJB	06/12	Title			
Checked			FOUR CORE WAVECON STOP END INCLUDING SERVICES STRIPPING DIMENSIONS			Drg. No. LVJ 7.304.1
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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.305

**FOUR CORE WAVECON CNE
MAINS CABLE STOP END**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.305

MATERIALS LIST

CABLE SIZE – 95/185 Wavecon

Item	Quantity
Shell 1581	1
Resin	16 litre (2 x 5 litre + 1 x 6.5 litre)
Connector BCNE-3	1
Connector MSIP 50/185	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

300 Wavecon

Shell 1580	1
Resin	19 litre (3 x 6.5 litre)
Connector BCNE-3	1
Connector MSIP 185/300	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
35mm² PVC sheathed (green/yellow) copper
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

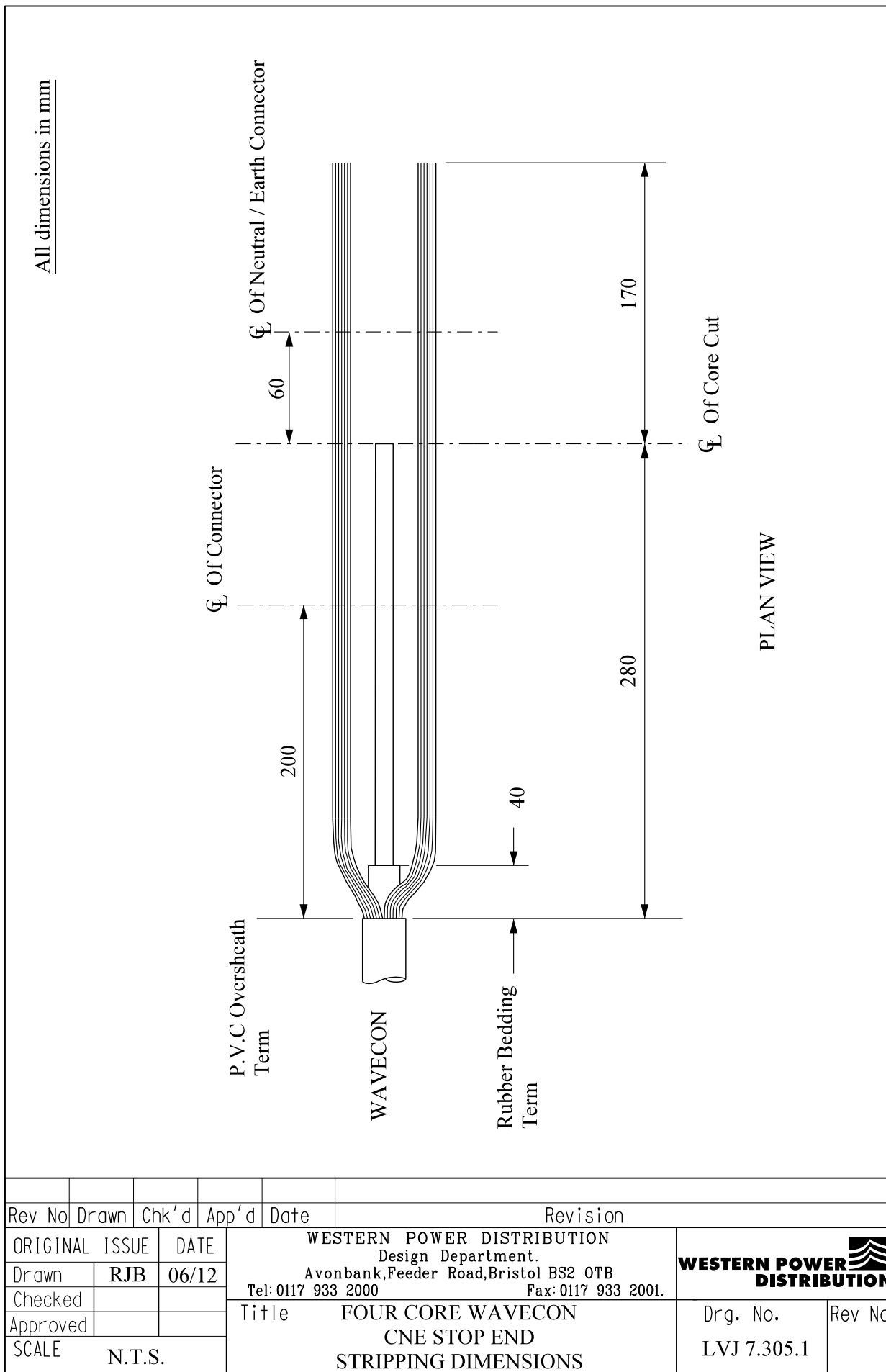
JOINTING PROCEDURE 7.305

Actions

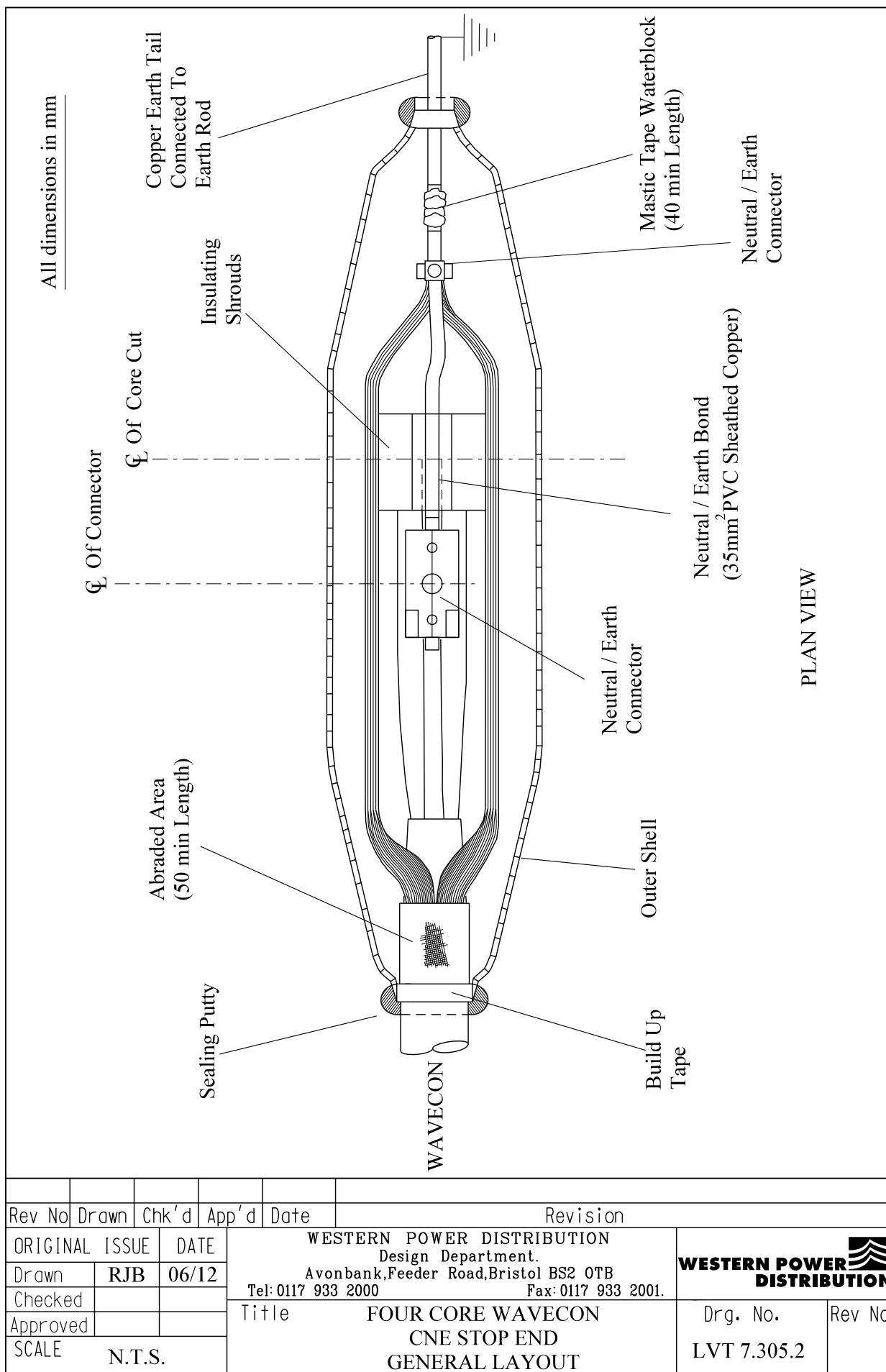
General Requirements (ST: CA1C)

Refer to Drawing **LVJ 7.305.1, 7.305.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Install earth rod and connect the copper earth tail	34
3.	Open and cut cable	14
4.	Prepare the earth wires for jointing	8
5.	Set cores in joint position	27
6.	Connect a 35mm ² neutral/earth bond to the neutral conductor	29
7.	Connect the earth wires to the copper earth tail including the neutral/earth bond	--
8.	Form the earth wires into their final position	--
9.	Abrade and build up oversheath	32
10.	Thoroughly degrease the joint	35
11.	Apply mastic water block to the copper earth tail	33
12.	Remove temporary binders	--
13.	Prepare and fit shell, ensuring 15mm clearance	36
14.	Mix and pour resin	37



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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.306

**FOUR CORE WAVECON CNE MAINS CABLE
STOP END INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.306

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT REFERENCES (HYBRID SERVICES)							
	1 x 1 ph	2 x 1 ph	3 x 1 ph	4 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph	2 x 1 ph + 1 x 3 ph
95W	SES 40	SES 43	SES 46	SES 49	SES 52	SES 55	SES 58	SES 61
185W	SES 41	SES 44	SES 47	SES 50	SES 53	SES 56	SES 59	SES 62
300W	SES 42	SES 45	SES 48	SES 51	SES 54	SES 57	SES 60	SES 63

Key: - 95W = 95mm² Wavecon
185W = 185mm² Wavecon
300W = 300mm² Wavecon

JOINTING PROCEDURE 7.306

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS				EARTH TAIL	EARTH ROD
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	BCNE-3	70mm ² LINE TAP	LVCU 1700/5	
SES40	1		2	1	2		2	1	1	1
SES41	1		2	1	2		2	1	1	1
SES42		1		3		2	2	1	1	1
SES43	1		2	1	2		2	1	1	1
SES44	1		2	1	2		2	1	1	1
SES45		1		3		2	2	1	1	1
SES46	1		2	1	3		2	1	1	1
SES47	1		2	1	3		2	1	1	1
SES48		1		3		3	2	1	1	1
SES49	1		2	1	3		2	1	1	1
SES50	1		2	1	3		2	1	1	1
SES51		1		3		3	2	1	1	1
SES52	1		2	1	4		2	1	1	1
SES53		1		3	4		2	1	1	1
SES54		1		3		4	2	1	1	1
SES55	1		2	1	4		2	1	1	1
SES56		1		3	4		2	1	1	1
SES57		1		3		4	2	1	1	1
SES58	1		2	1	4		2	1	1	1
SES59		1		3	4		2	1	1	1
SES60		1		3		4	2	1	1	1
SES61	1		2	1	4		2	1	1	1
SES62		1		3	4		2	1	1	1
SES63		1		3		4	2	1	1	1

JOINTING PROCEDURE 7.306 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
16 swg tinned copper wire
PVC tape
35mm² PVC sheathed (green/yellow) copper
Emery cloth
Denso tape
De-solvit 1000FD
Workhorse dry wipes

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

JOINTING PROCEDURE 7.306

Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.306.1, 7.306.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

WAVECON CABLE - Preparation

- | | | |
|----|--------------------------------------|----|
| 3. | Open and cut cable | 14 |
| 4. | Prepare the earth wires for jointing | 8 |

PVC SERVICE CABLE - Preparation

- | | | |
|----|--|----|
| 5. | Open and cut cable | 17 |
| 6. | Prepare the neutral/earth wires for jointing | 8 |

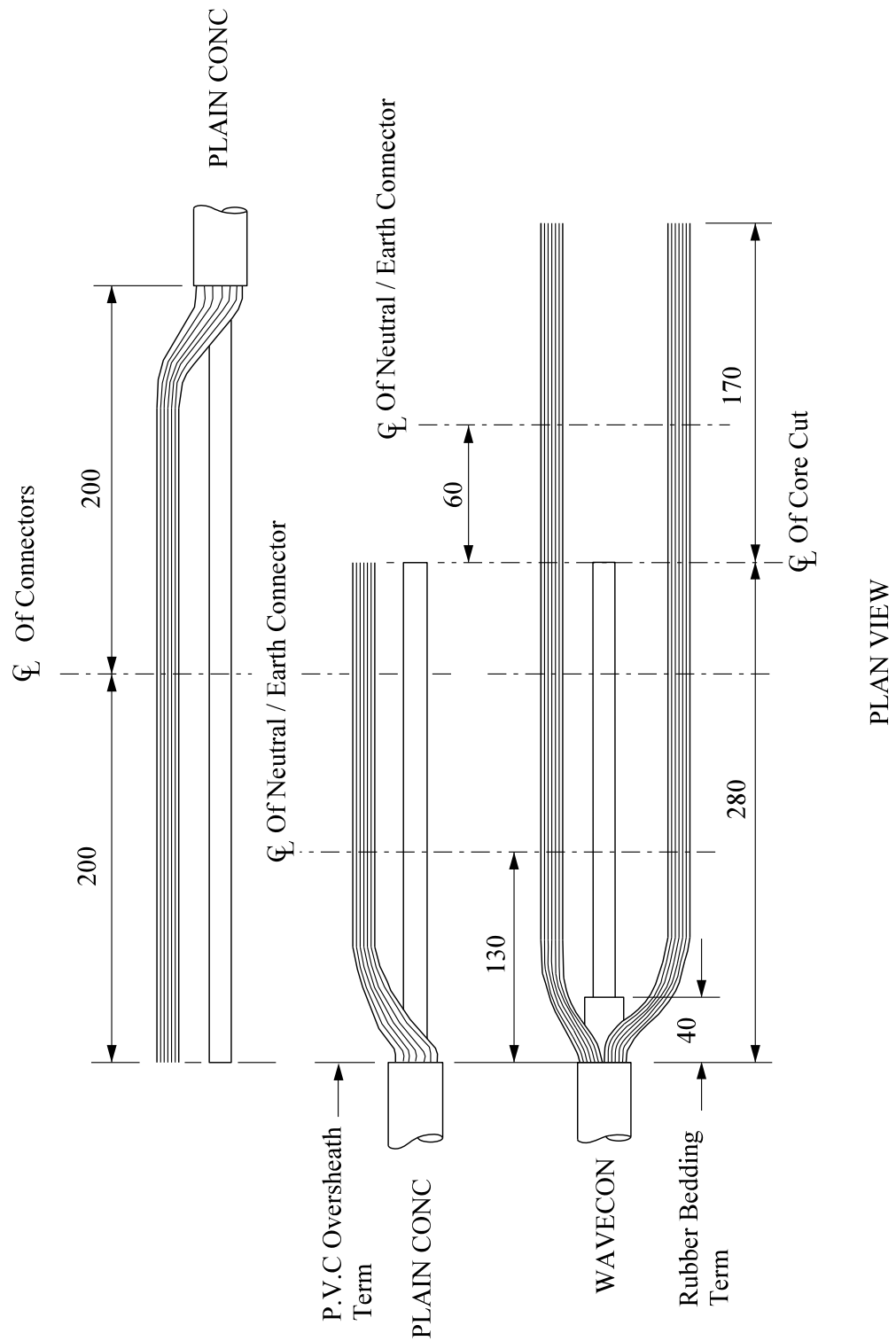
COMPLETION OF JOINT


- | | | |
|-----|---|----|
| 7. | Set cores in joint position | 27 |
| 8. | Connect 35mm ² neutral/earth bond to the neutral conductor | 29 |
| 9. | Connect the Wavecon earth wires to the copper earth tail including the neutral/earth bond | 29 |
| 10. | Connect neutral/earth wires of service cable(s) | 29 |
| 11. | Apply temporary shrouding | 21 |
| 12. | Make phase connection(s) | 29 |
| 13. | Remove temporary shrouding applied in 11 | -- |
| 14. | Form neutral/earth wires into their final position | -- |

JOINTING PROCEDURE 7.306 – Continued

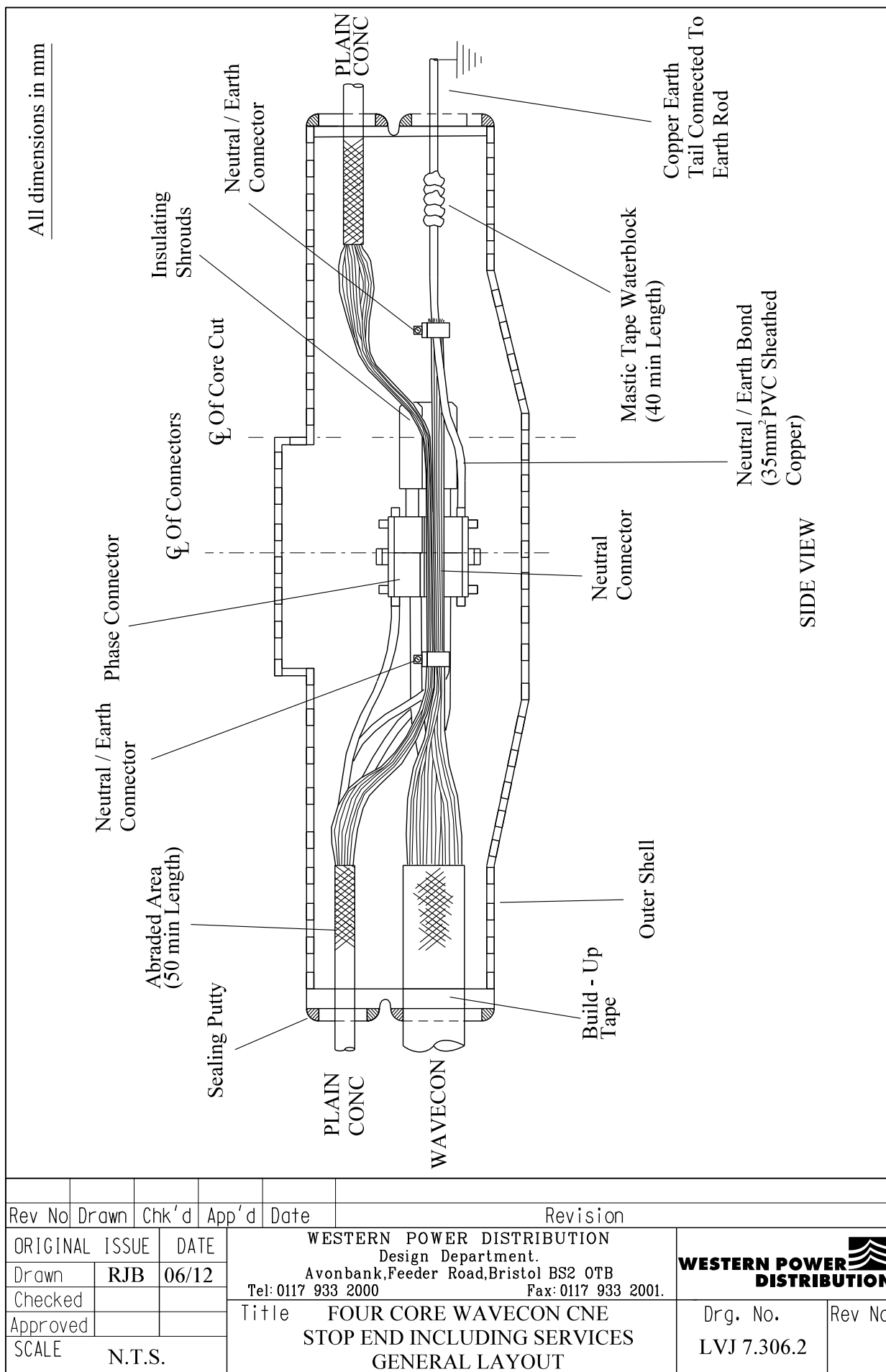
Actions	General Requirements (ST: CA1C/4)
15. Abrade and build up oversheaths	32
16. Thoroughly degrease the joint	35
17. Apply mastic waterblock to copper earth tail	33
18. Prepare and fit shell, ensuring 15mm clearance	36
19. Mix and pour resin	37

All dimensions in mm



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Drawn	RJB	06/12		 WESTERN POWER DISTRIBUTION	
Checked					
Approved				Title	
SCALE		N.T.S.		FOUR CORE WAVECON CNE STOP END INCLUDING SERVICES STRIPPING DIMENSIONS	
				Drg. No. LVJ 7.306.1	
				Rev No	

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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.307

CONSAC MAINS CABLE STOP END

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

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JOINTING PROCEDURE 7.307

MATERIALS LIST

CABLE SIZE – 95/185 Consac

Item	Quantity
Shell 1581	1
Resin	16 litre (2 x 5 litre + 1 x 6.5 litre)
Connector TA3	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

CABLE SIZE – 240 Consac

Item	Quantity
Shell 1581	1
Resin	16 litre (2 x 5 litre + 1 x 6.5 litre)
Connector TA3	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
'H' metal
Abrasive metal
PVC tape
Mastic water blocking tape
Denso tape
De-Solvit 1000FD
De-Solvit 1000
Workhorse dry wipes

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

Note: - 240mm² Consac is only to be found in the Midlands Region of WPD.

JOINTING PROCEDURE 7.307

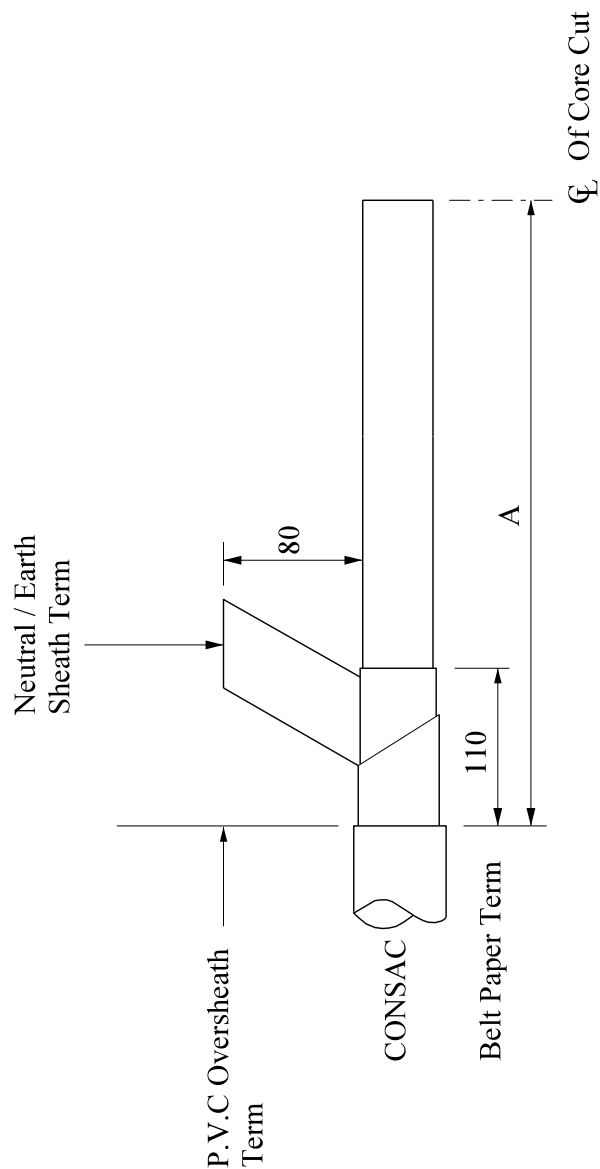
Actions

General Requirements (ST: CA1C)

Refer to Drawing **LVJ 7.307.1, 7.307.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Install earth rod and connect copper earth tail	39
3.	Open and cut the cable	15
4.	Carry out moisture test	19
5.	Prepare the neutral/earth sheath for jointing	--
6.	Form neutral/earth sheath into final position	31
7.	Connect copper earth tail to neutral/earth sheath	29
8.	Remove temporary earth connection applied in 3	35
9.	Abrade and build up oversheath	32
10.	Thoroughly degrease the joint	35
11.	Apply mastic water blocks to copper earth tail and Consac PVC oversheath termination	33
12.	Prepare and fit shell, ensuring 15mm clearance	36
13.	Mix and pour resin	37

All dimensions in mm

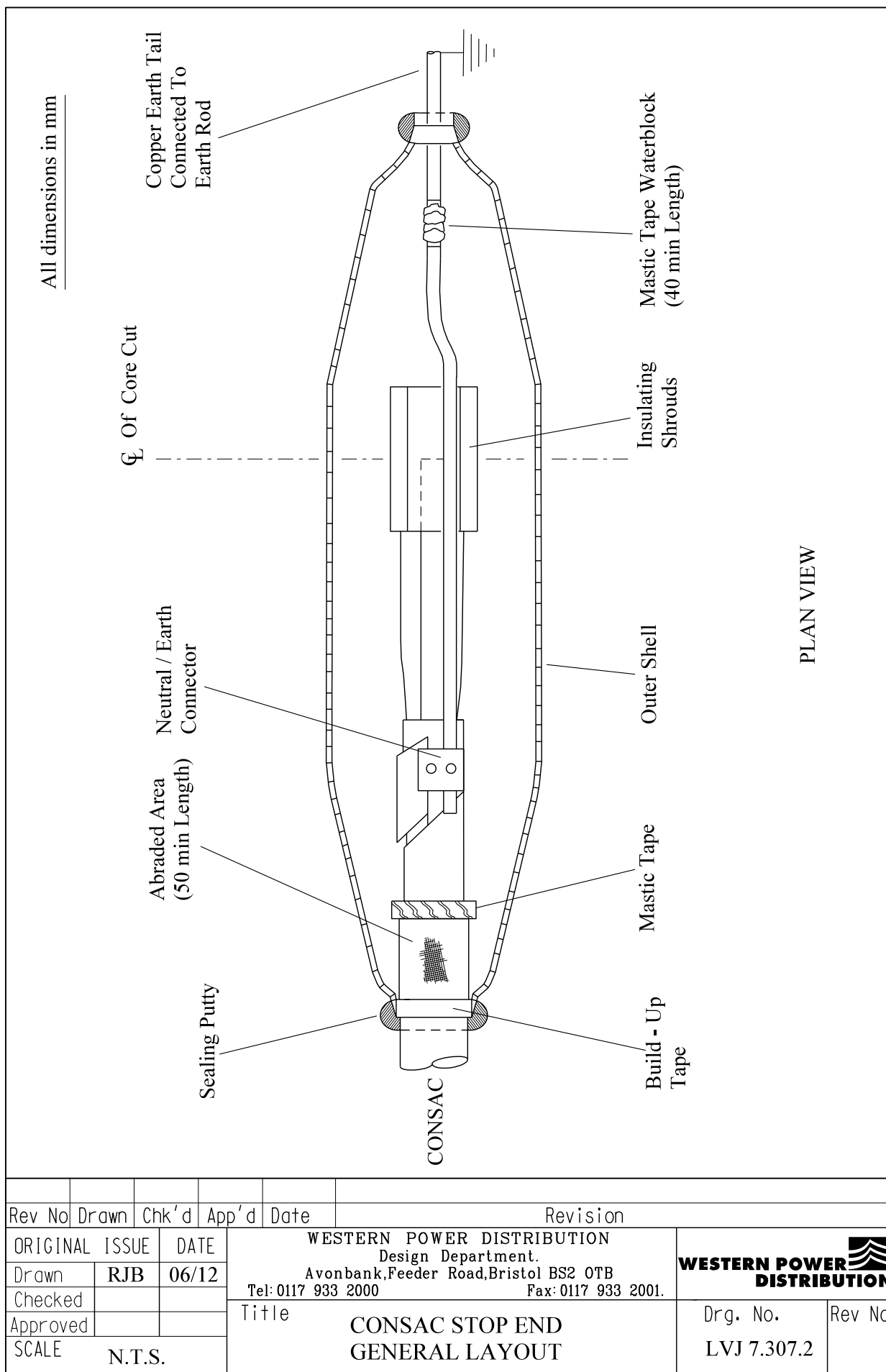


CABLE SIZE	A
95 - 185mm ²	320
240mm ²	340

PLAN VIEW

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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.308

**CONSAC MAINS CABLE
STOP END INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.308

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT REFERENCES (HYBRID SERVICES)							
	1 x 1 ph	2 x 1 ph	3 x 1 ph	4 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph	2 x 1 ph + 1 x 3 ph
95C	SES64	SES66	SES68	SES70	SES72	SES74	SES76	SES78
185C	SES65	SES67	SES69	SES71	SES73	SES75	SES77	SES79
240C	SES80	SES81	SES82	SES83	SES84	SES85	SES86	SES88

Key: - 95C = 95mm² Consac
185C = 185mm² Consac
240C = 240mm² Consac

Note: - 240mm² Consac is only to be found in the Midlands Region of WPD.

JOINTING PROCEDURE 7.308

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS				EARTH TAIL	EARTH ROD
	1580	1581	5 litre	6.5 litre	MSIP 185	MSIP 300	TA3	70mm ² LINE TAP	LVCU 1700/5	
SES64		1	2	1	1		2	1	1	1
SES65		1	2	1	1		2	1	1	1
SES66		1	2	1	1		2	1	1	1
SES67		1	2	1	1		2	1	1	1
SES68		1	2	1	2		2	1	1	1
SES69		1	2	1	2		2	1	1	1
SES70		1	2	1	2		2	1	1	1
SES71		1	2	1	2		2	1	1	1
SES72		1	2	1	3		2	1	1	1
SES73		1	2	1	3		2	1	1	1
SES74		1	2	1	3		2	1	1	1
SES75		1	2	1	3		2	1	1	1
SES76		1	2	1	3		2	1	1	1
SES77		1	2	1	3		2	1	1	1
SES78		1	2	1	3		2	1	1	1
SES79		1	2	1	3		2	1	1	1
SES80	1			3		1	2	1	1	1
SES81	1			3		1	2	1	1	1
SES82	1			3		2	2	1	1	1
SES83	1			3		2	2	1	1	1
SES84	1			3		2	2	1	1	1
SES85	1			3		3	2	1	1	1
SES86	1			3		3	2	1	1	1
SES87	1			3		3	2	1	1	1

JOINTING PROCEDURE 7.308 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
'H' metal
Abrasive metal
PVC tape
Emery cloth
Mastic Water blocking tape
Denso tape
De-solvit 1000FD
De-solvit 1000
Workhorse dry wipes

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

JOINTING PROCEDURE 7.308

Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.308.1, 7.308.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

CONSAC CABLE - Preparation

- | | | |
|----|---|----|
| 3. | Open and cut cable | 15 |
| 4. | Carry out moisture test | 19 |
| 5. | Prepare the neutral/earth sheath for jointing | -- |
| 6. | Form neutral/earth sheath into final position | 31 |

PVC SERVICE CABLE – Preparation

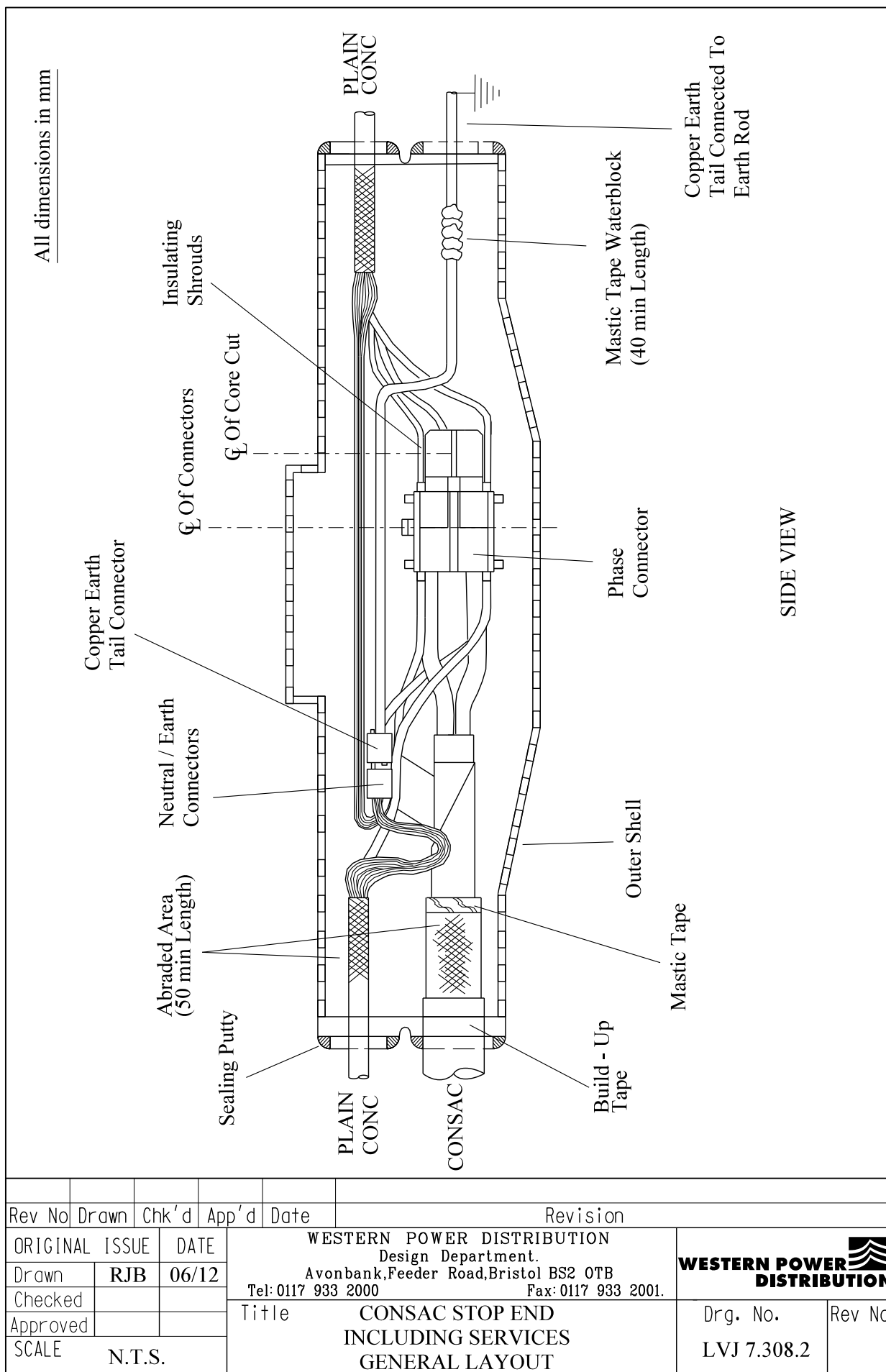
- | | | |
|----|--|----|
| 7. | Open and cut cable(s) | 17 |
| 8. | Prepare the neutral/earth wires for jointing | 8 |

COMPLETION OF JOINT

- | | | |
|-----|---|----|
| 9. | Set cores in joint position | 27 |
| 10. | Connect copper earth tail to neutral/earth sheath | 29 |
| 11. | Remove temporary earth connection applied in 3 | -- |
| 12. | Connect neutral/earth wires of service cable(s) | 29 |
| 13. | Apply temporary shrouding | 21 |
| 14. | Make phase connection(s) | 29 |

JOINTING PROCEDURE 7.308 - Continued

Actions	General Requirements (ST: CA1C/4)
15. Remove temporary shrouding applied in 13	--
16. Form neutral/earth wires into their final position	--
17. Abrade and build up oversheaths	32
18. Thoroughly degrease the joint	35
19. Apply mastic water blocks to copper earth tail and Consac PVC oversheath termination	33
20. Prepare and fit shell, ensuring 15mm clearance	36
21. Mix and pour resin	37



**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.309

PILC MAINS CABLE STOP END

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

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JOINTING PROCEDURE 7.309

MATERIALS LIST

CABLE SIZE – 50/120 Pile

Item	Quantity
Shell 1581	1
Resin	16 litre (2 x 5 litre + 1 x 6.5 litre)
Connector 70mm ² Line Tap	1
Earth Bond LVEB 08	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

185/300 Pile

Shell 1580	1
Resin	19 litre (3 x 6.5 litre)
Connector C12	1
Earth Bond LVEB 08	1
Earth Rod	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
PVC tape
Denso tape
De-Solvit 1000FD
De-Solvit 1000
Workhorse dry wipes

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

JOINTING PROCEDURE 7.309

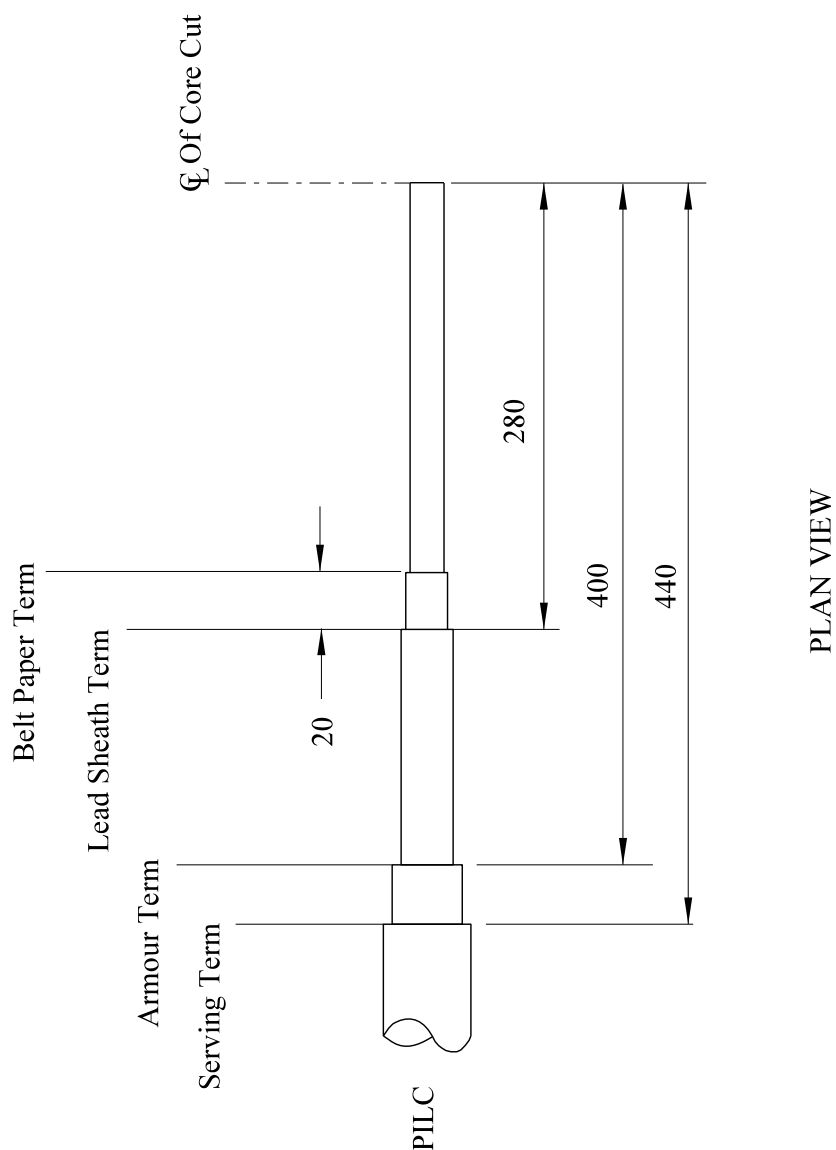
Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.309.1, 7.309.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Open and cut the cable	16
3.	Carry out moisture test	19
4.	Apply armour bond	22
5.	Apply lead sheath bond	23
6.	Connect copper earth tail to lead sheath bond	23
7.	Build up oversheath	--
8.	Thoroughly degrease the joint	35
9.	Apply mastic water blocks to lead sheath and copper earth tail	33
10.	Prepare and fit shell, ensuring 15mm clearance	36
11.	Mix and pour resin	37

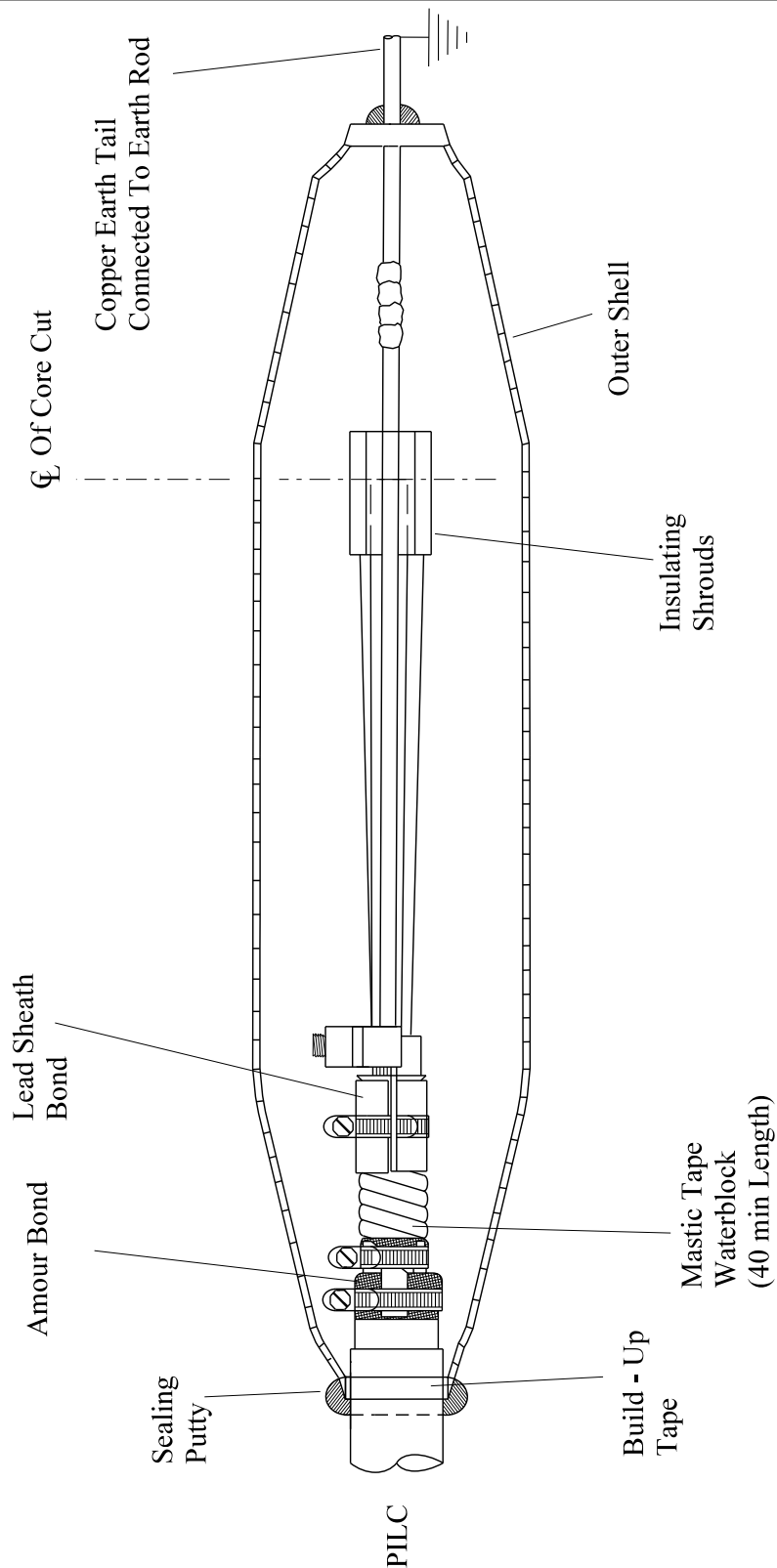
All dimensions in mm




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SCALE		N.T.S.	Drg. No. LVJ 7.309.1		
			Rev No		

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All dimensions in mm



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Drawn	RJB	06/12			
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SCALE		N.T.S.		Title	
				PILC STOP END GENERAL LAYOUT	
				Drg. No. LVJ 7.309.2	Rev No

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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.310

**PILC MAINS CABLE STOP END
INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.310

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT REFERENCES (SPLIT CONC SERVICES)				
	1 x 1 ph	2 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph
50 – 120 PILC	SES 88	SES 90	SES 92	SES 94	SES 96
185 – 300 PILC	SES 89	SES 91	SES 93	SES 95	SES 97

JOINTING PROCEDURE 7.310

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS			EARTH BOND	EARTH TAIL	EARTH ROD
	1581	1580	5 litre	6.5 litre	MSIP185	MSIP300	70mm ² LINE TAP	LVEB 08	LVCU 1700/5	
SES88	1		2	1	2		1	1	1	1
SES89		1		3		2	1	1	1	1
SES90	1		2		2		1	1	1	1
SES91		1		3		2	1	1	1	1
SES92	1		2	1	4		1	1	1	1
SES93		1		3		4	1	1	1	1
SES94	1		2	1	4		1	1	1	1
SES95		1		3		4	1	1	1	1
SES96	1		2	1	4		1	1	1	1
SES97		1		3		4	1	1	1	1

JOINTING PROCEDURE 7.310 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
PVC tape
Denso tape
De-solvit 1000FD
De-solvit 1000
Workhorse dry wipes

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

JOINTING PROCEDURE 7.310

Actions

General Requirements (ST: CA1C)

Refer to Drawing **LVJ 7.310.1, 7.310.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

PILC CABLE - Preparation

- | | | |
|----|-------------------------|----|
| 3. | Open and cut cable | 16 |
| 4. | Carry out moisture test | 19 |
| 5. | Apply armour bond | 22 |
| 6. | Apply lead sheath bond | 23 |

PVC SERVICE CABLE – Preparation

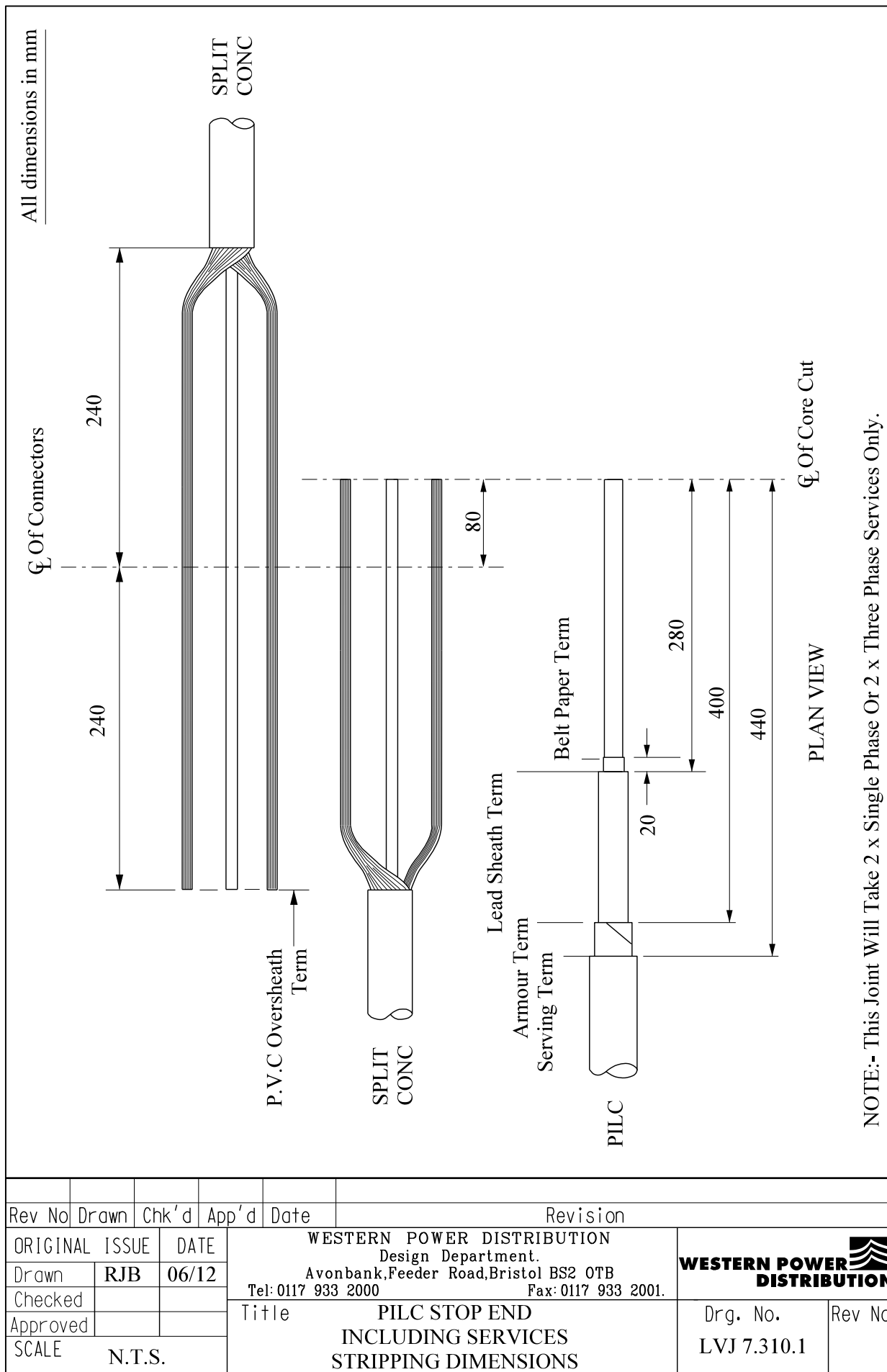
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|----|--|----|
| 7. | Open and cut cable(s) | 17 |
| 8. | Prepare neutral and earth wires for jointing | 8 |

COMPLETION OF JOINT

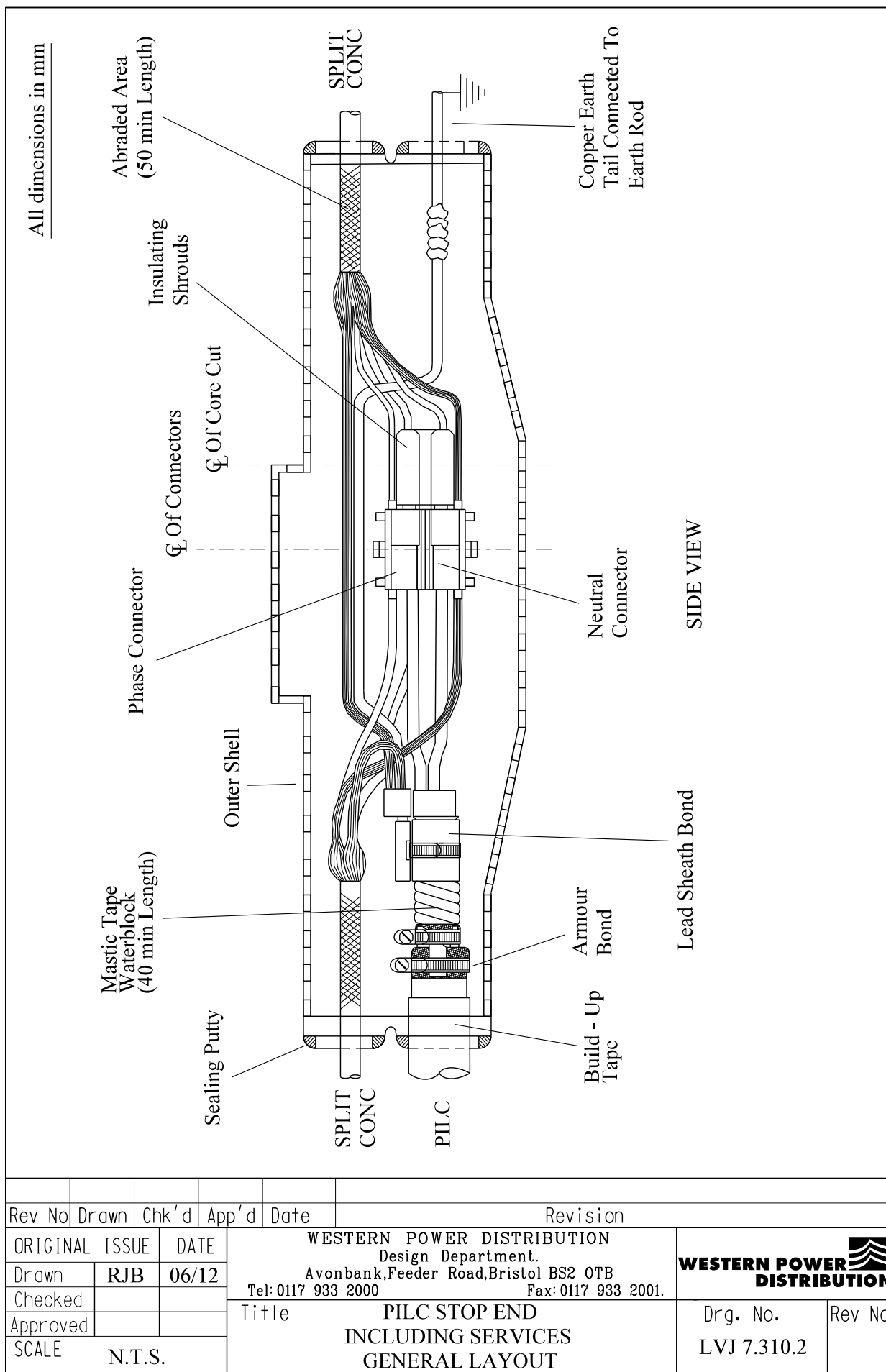
- | | | |
|------|---|----|
| 9. | Set cores in joint position | 27 |
| 10 . | Connect copper earth tail to lead sheath bond including the service earth wires | 23 |
| 11. | Apply temporary shrouding | 21 |
| 12. | Make neutral connection(s) | 29 |
| 13. | Make phase connections(s) | 29 |
| 14. | Remove temporary shrouding applied in 11 | -- |

JOINTING PROCEDURE 7.310 - Continued

Actions	General Requirements (ST: CA1C/4)
15. Form earth wires into their final position	--
16. Abrade and build up oversheaths	32
17. Thoroughly degrease the joint	35
18. Apply mastic water blocks to lead sheath and copper earth tail	33
19. Prepare and fit shell, ensuring 15mm clearance	36
20. Mix and pour resin	37



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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.311

**PILC CNE MAINS CABLE
STOP END**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.311

MATERIALS LIST

CABLE SIZE – 50/120 PILC

Item	Quantity
Shell 1581	1
Resin	16 litre (2 x 5 litre + 1 x 6.5 litre)
Connector MSIP 50/185	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Earth Bond LVEB 08	1
Copper Earth Tail LVCU 1700/5	1

185/300 PILC

Shell 1580	1
Resin	19 litre (3 x 6.5 litre)
Connector MSIP 185/300	1
Connector 70mm ² Line Tap	1
Earth Rod	1
Earth Bond LVEB 08	1
Copper Earth Tail LVCU 1700/5	1

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
35mm² PVC sheathed (green/yellow) copper
Denso tape
De-Solvit 1000FD
De-Solvit 1000
Workhorse dry wipes

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

JOINTING PROCEDURE 7.311

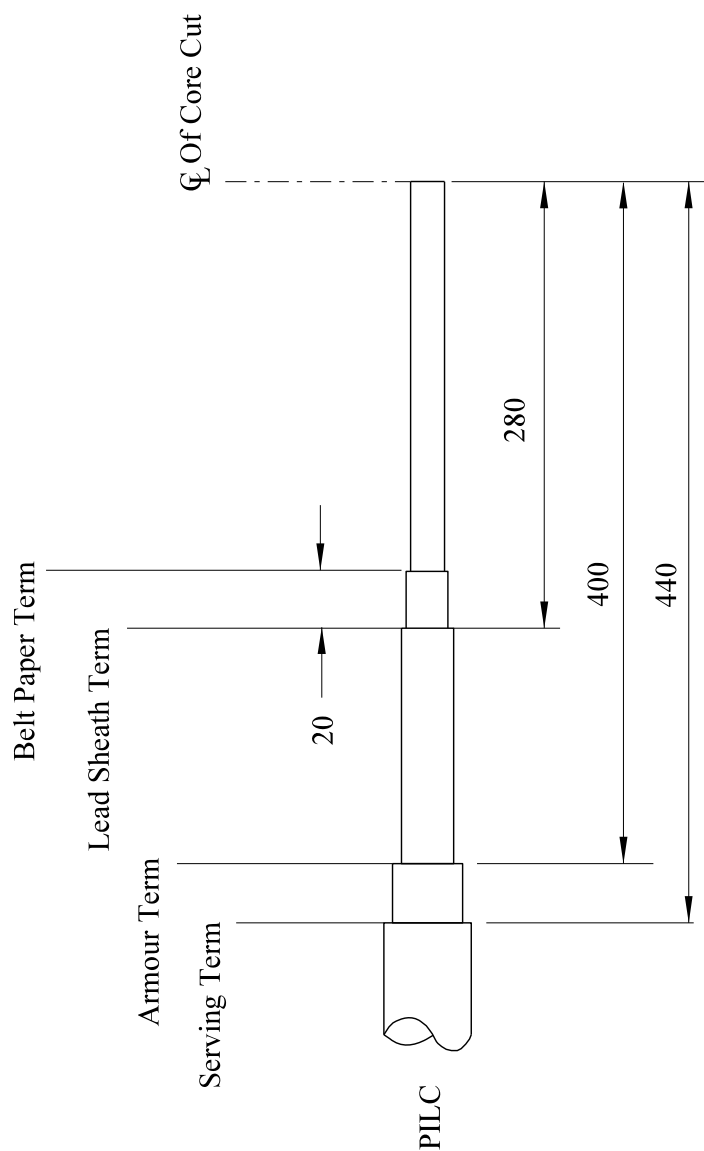
Actions

General Requirements (ST: CA1C/4)


Refer to Drawing **LVJ 7.311.1, 7.311.2** whilst undertaking this Jointing Procedure

1.	Set up and mark cable	4
2.	Install earth rod and connect copper earth tail	34
3.	Open and cut cable	16
4.	Carry out moisture test	19
5.	Apply armour bond	22
6.	Apply lead sheath bond	23
7.	Connect a 35mm ² copper neutral/earth bond to the neutral conductor	29
8.	Connect the copper earth tail to the lead sheath bond including the copper 35mm ² neutral/earth bond	29
9.	Build up oversheath	--
10.	Thoroughly degrease the joint	35
11.	Apply mastic water blocks to lead sheath and copper earth tail	33
12.	Prepare and fit shell, ensuring 15mm clearance	36
13.	Mix and pour resin	37

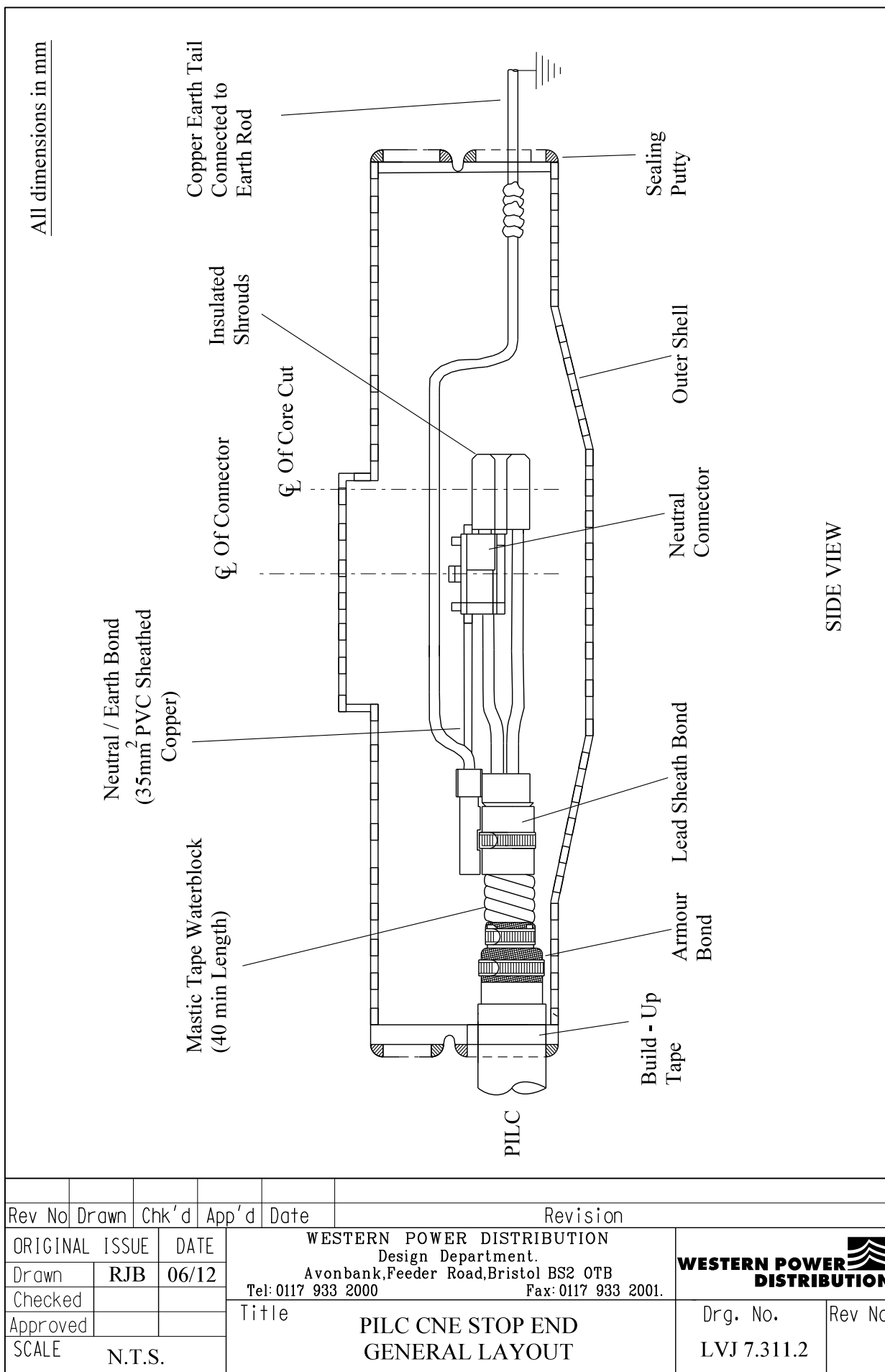
All dimensions in mm



PLAN VIEW

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Drawn	RJB	06/12			
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Approved					
SCALE		N.T.S.		Title	
				PILC CNE STOP END STRIPPING DIMENSIONS	
				Drg. No. LVJ 7.311.1	
				Rev No	

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**ST: CA1F/3 PROCEDURES FOR MAKING LV MAINS
CABLE STOP ENDS**

JOINTING PROCEDURE 7.312

**PILC CNE MAINS CABLE STOP END
INCLUDING SERVICES**

**This procedure is to be read in conjunction with the appropriate
General Requirements ST: CA1C/4 Section 6 Pt 1
of the LV Jointing Manual**

JOINTING PROCEDURE 7.312

JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT REFERENCES (HYBRID SERVICES)							
	1 x 1 ph	2 x 1 ph	3 x 1 ph	4 x 1 ph	1 x 3 ph	2 x 3 ph	1 x 1 ph + 1 x 3 ph	2 x 1 ph + 1 x 3 ph
50 – 120 PILC	SES90	SES92	SES94	SES96	SES98	SES100	SES102	SES104
185 – 300 PILC	SES91	SES93	SES95	SES97	SES99	SES101	SES103	SES105

JOINTING PROCEDURE 7.312

JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS			EARTH BOND	EARTH TAIL	EARTH ROD
	1581	1580	5 litre	6.5 litre	MSIP185	MSIP300	70mm ² LINE TAP	LVEB 08	LVCU 1700/5	
SES90	1		2	1	2		1	1	1	1
SES91		1		3		2	1	1	1	1
SES92	1		2	1	2		1	1	1	1
SES93		1		3		2	1	1	1	1
SES94	1		2	1	3		1	1	1	1
SES95		1		3		3	1	1	1	1
SES96	1		2	1	3		1	1	1	1
SES97		1		3		3	1	1	1	1
SES98	1		2	1	4		1	1	1	1
SES99		1		3		4	1	1	1	1
SES100	1		2	1	4		1	1	1	1
SES101		1		3		4	1	1	1	1
SES102	1		2	1	4		1	1	1	1
SES103		1		3		4	1	1	1	1
SES104	1		2	1	4		1	1	1	1
SES105		1		3		4	1	1	1	1

JOINTING PROCEDURE 7.312 - Continued

MATERIALS LIST

ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch
Black cotton tape
Sealing putty
Cable ties
Shell support
Whipping thread
PVC tape
35mm² PVC sheathed (green/yellow) copper
Denso tape
De-Solvit 1000FD
De-Solvit 1000
Workhorse dry wipes

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

JOINTING PROCEDURE 7.312

Actions

General Requirements (ST: CA1C/4)

Refer to Drawing **LVJ 7.312.1, 7.312.2** whilst undertaking this Jointing Procedure

- | | | |
|----|---|----|
| 1. | Set up and mark cable | 4 |
| 2. | Install the earth rod and connect copper earth tail | 34 |

PILC CABLE – Preparation

- | | | |
|----|-------------------------|----|
| 3. | Open and cut cable | 16 |
| 4. | Carry out moisture test | 19 |
| 5. | Apply armour bond | 22 |
| 6. | Apply lead sheath bond | 23 |

PVC SERVICE CABLE – Preparation

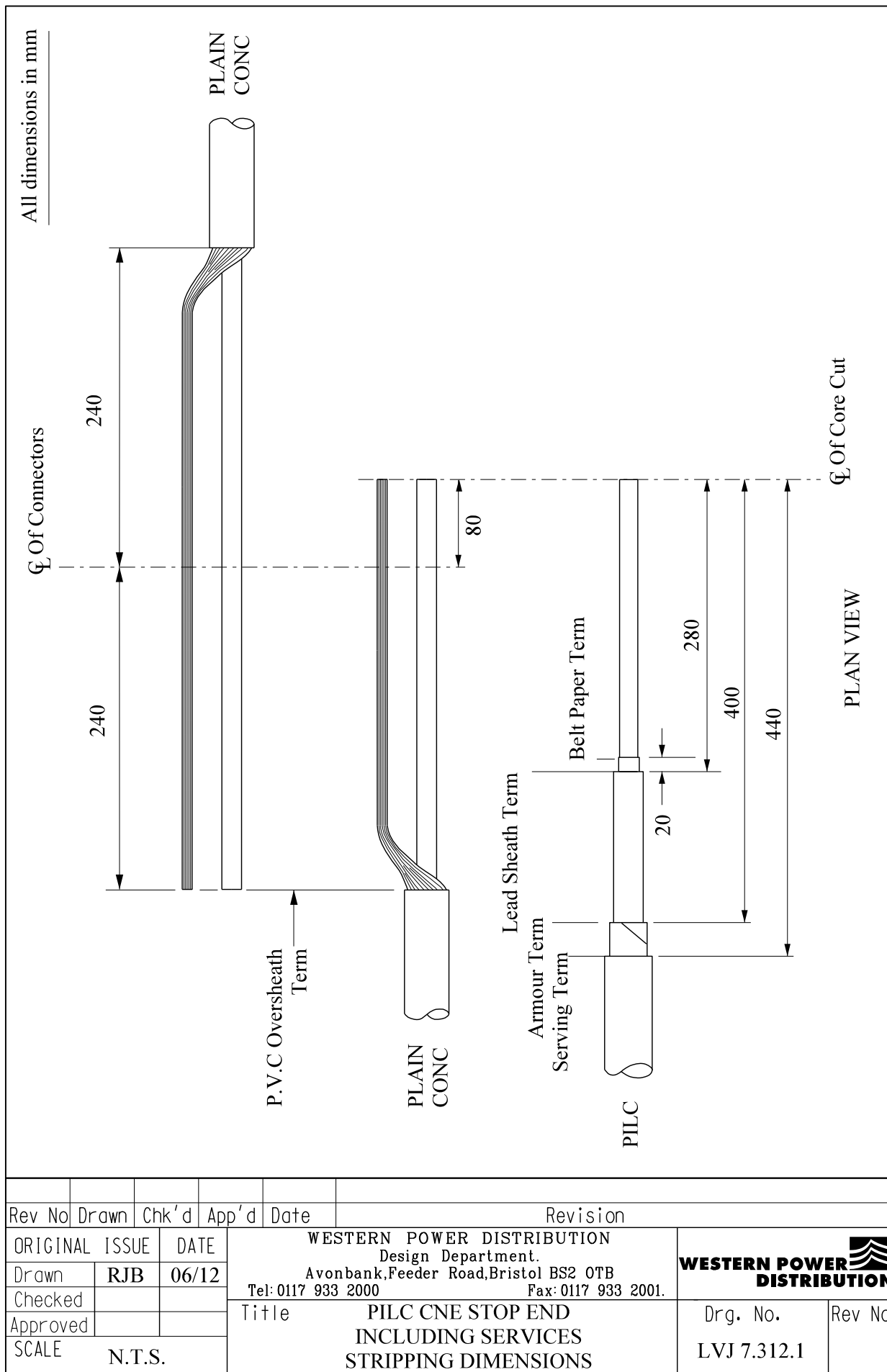
- | | | |
|----|--|----|
| 7. | Open and cut cable | 17 |
| 8. | Prepare neutral/earth wires for jointing | 8 |

COMPLETION OF JOINT

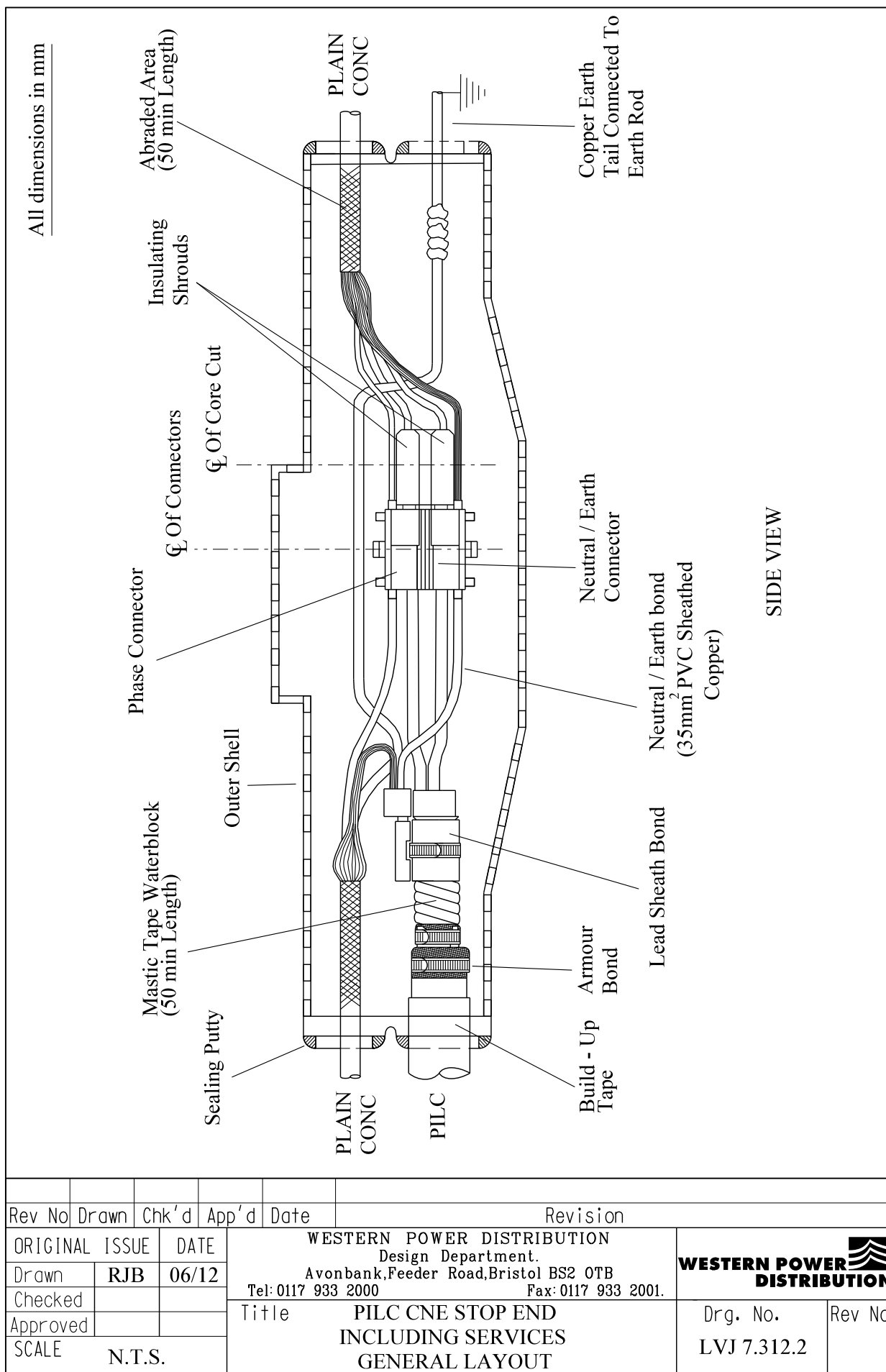
- | | | |
|-----|--|----|
| 9. | Set cores in joint position | 27 |
| 10. | Connect a 35mm ² neutral/earth bond to the neutral conductor | 29 |
| 11. | Connect copper earth tail to lead sheath bond including the 35mm ² neutral/earth bond and the service neutral/earth wires | 23 |
| 12. | Apply temporary shrouding | 21 |
| 13. | Make phase connection(s) | 29 |

JOINTING PROCEDURE 7.312 – Continued

Actions	General Requirements (ST: CA1C/4)
14. Remove temporary shrouding applied in 13	--
15. Form neutral/earth wires into their final position	--
16. Abrade and build up oversheaths	32
17. Thoroughly degrease the joint	35
18. Apply mastic water blocks to lead sheath and copper earth tail	33
19. Prepare and fit shell, ensuring 15mm clearance	36
20. Mix and pour resin	37



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APPENDIX A

SUPERSEDED DOCUMENTATION

This Standard Technique supersedes ST:CA1F/2 dated October 2001 which should now be withdrawn.

APPENDIX B

ASSOCIATED DOCUMENTATION

ST: CA1A, ST: CA1C/5, ST: CA1 D, ST: CA1E, ST: CA1G, 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

None, as this document has just been updated to incorporate the latest ST: HS8H and other minor changes.

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 Stop Ends.

APPENDIX F

DOCUMENT LAST REVIEWED

June 2012