

## **Company Directive**

### **STANDARD TECHNIQUE : CA1I/4**

#### **Relating to the Procedures for Making Low Voltage Mains Cable Service Branch Joints**

This Standard Technique document contains the various approved LV mains cable service branch joints, 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**

***All references to Western Power Distribution or WPD must be read as National Grid Electricity Distribution or NGED***

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# **ST: CA11/4 PROCEDURES FOR MAKING LV MAINS CABLE SERVICE BRANCH JOINTS**

## **INTRODUCTION**

This Standard Technique document contains the various approved LV mains cable service branch joints, 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

**Resin encapsulated joints are not to be broken down.**

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

## **CONTENTS**

- 7.601 Three Core Wavecon
- 7.602 Four Core Wavecon
- 7.603 Four Core Wavecon – CNE
- 7.604 Consac
- 7.605 PILC
- 7.606 PILC – CNE

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

**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.601**

**THREE CORE WAVECON MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.601

### 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	MSB 1	MSB 4	MSB 7	MSB 10	MSB 13	MSB 16	MSB 19	MSB 22
185W	MSB 2	MSB 5	MSB 8	MSB 11	MSB 14	MSB 17	MSB 20	MSB 23
300W	MSB 3	MSB 6	MSB 9	MSB 12	MSB 15	MSB 18	MSB 21	MSB 24

**Note: - 70mm<sup>2</sup> and 120mm<sup>2</sup> Wavecon used in South Wales will be sized as 95mm<sup>2</sup> (70) and 185mm<sup>2</sup> (120)**

Key: - 95W = 95mm<sup>2</sup> Wavecon  
185W = 185mm<sup>2</sup> Wavecon  
300W = 300mm<sup>2</sup> Wavecon

## JOINTING PROCEDURE 7.601

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN	CONNECTORS			EARTH TAIL
	1583	1582	5 litre	MSIP 185	MSIP 300	BCNE 3	LVCU 1700/5
MSB1	1		2	1		2	1
MSB2	1		2	1		2	1
MSB3		1	3		1	2	1
MSB4	1		2	1		2	1
MSB5	1		2	1		2	1
MSB6		1	3		1	2	1
MSB7		1	3	2		2	1
MSB8		1	3	2		2	1
MSB9		1	3		2	2	1
MSB10		1	3	2		2	1
MSB11		1	3	2		2	1
MSB12		1	3		2	2	1
MSB13		1	3	3		2	1
MSB14		1	3	3		2	1
MSB15		1	3		3	2	1
MSB16		1	3	3		2	1
MSB17		1	3	3		2	1
MSB18		1	3		3	2	1
MSB19		1	3	3		2	1
MSB20		1	3	3		2	1
MSB21		1	3		3	2	1
MSB22		1	3	3		2	1
MSB23		1	3	3		2	1
MSB24		1	3		3	2	1

#### ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch  
 Black cotton tape  
 Sealing putty  
 Cable ties  
 Shell support  
 Tinned copper braid (15 x 1.5)  
 16 swg tinned copper wire  
 PVC tape  
 Emery cloth  
 De-solvit 1000FD  
 Workhorse dry wipes

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

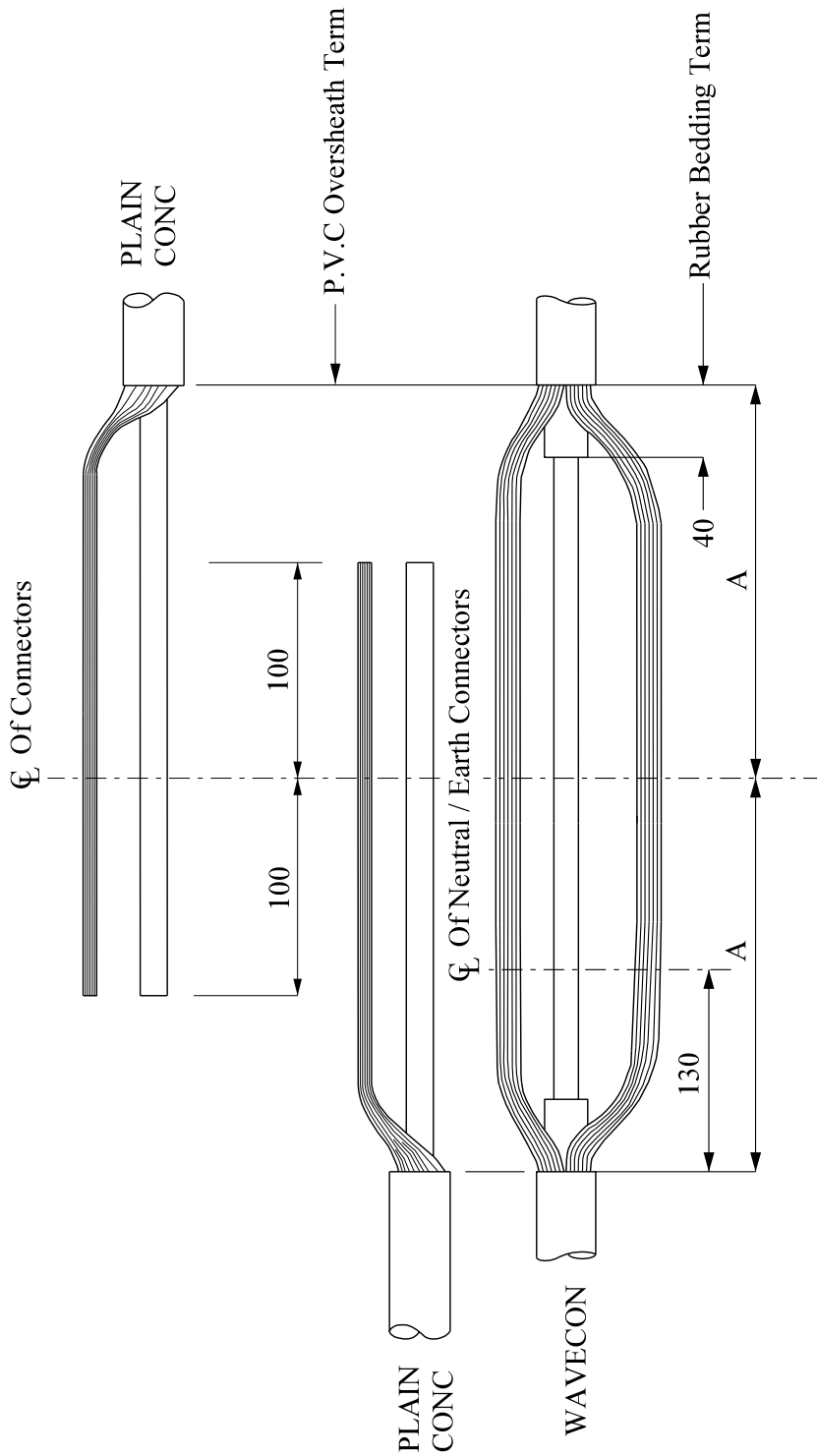
## JOINTING PROCEDURE 7.601

<b>Actions</b>	<b>General Requirements (ST: CA1C/4)</b>
Refer to Drawing LVJ 7.601.1, 7.601.2 whilst undertaking this Jointing Procedure	
1. Set up and mark the cables	
<b>SERVICE CABLE(s) - Preparation</b>	4
2. Open and cut cable(s)	17
3. Prepare neutral/earth wires for jointing	8
<b>WAVECON CABLE - Preparation</b>	
4. Remove PVC oversheath	
5. Prepare neutral/earth wires for jointing	8
6. Remove rubber bedding	9
<b>COMPLETION OF JOINT</b>	
7. Set cores in joint position	27
8. Make neutral/earth connection(s) including equalisation bond and copper earth tail	29
9. Apply temporary shrouding	21
10. Make phase connection(s)	29
11. Remove temporary shrouding applied in 9	--
12. Form neutral/earth wires into their final positions	--
13. Abrade and build up oversheaths	32
14. Thoroughly degrease the joint	35
15. Apply mastic water block to copper earth tail	33

## JOINTING PROCEDURE 7.601 - Continued


Actions	General Requirements (ST: CA1C/4)
16. Remove temporary binders	--
17. Prepare and fit shell, ensuring 15mm clearance	36
18. Mix and pour resin	37

All dimensions in mm



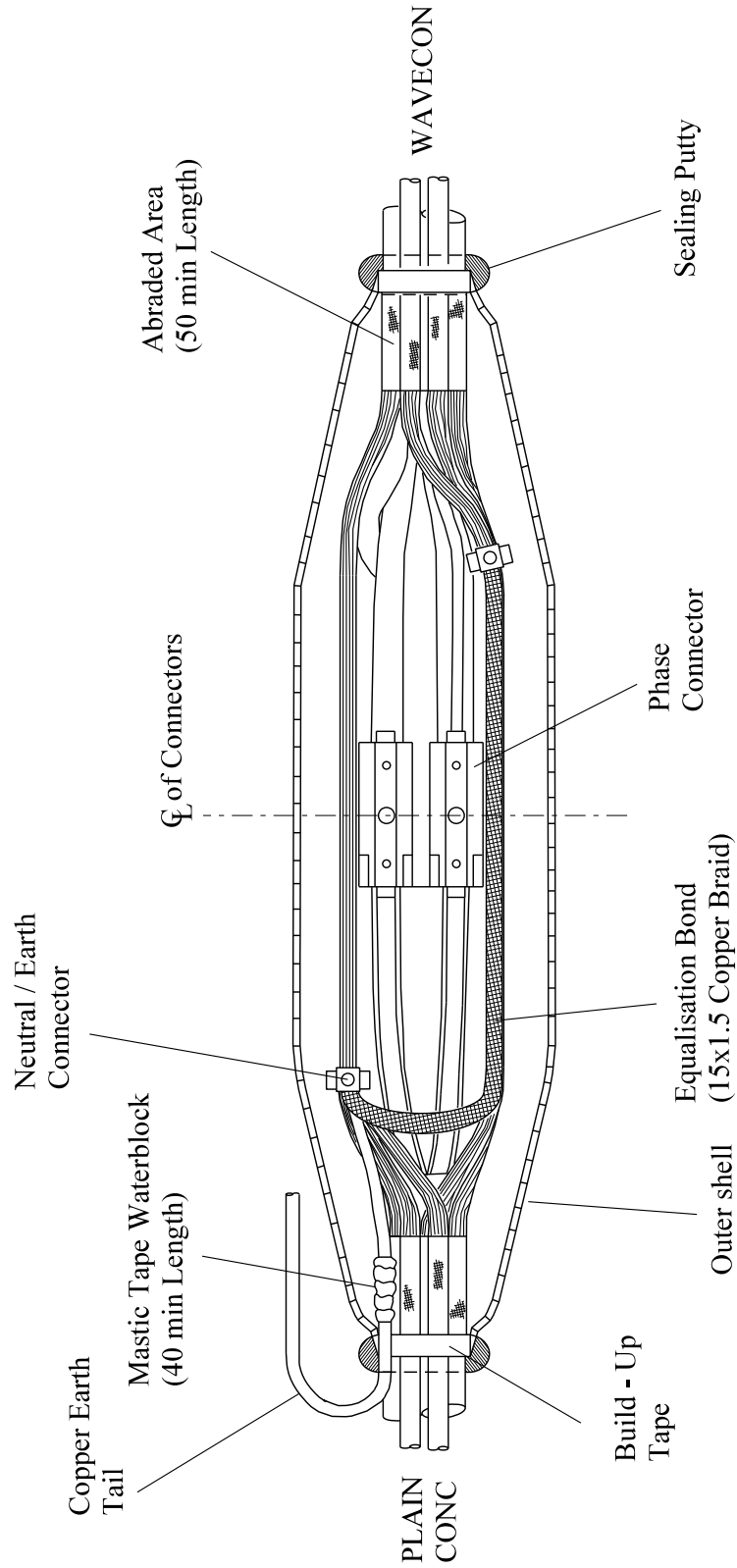
WAVECON	No: of Services	Dimension 'A'
70 - 185mm	1 or 2 single phase	175
70 - 185mm	3 or 4 single phase	200
	Any three phase	
300mm	Any service	

PLAN VIEW

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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.				
Drawn	RJB	06/12	Title			
Checked			THREE CORE WAVECON SERVICE BRANCH JOINT STRIPPING DIMENSIONS			Drg. No.
Approved						Rev No
SCALE	N.T.S.					LVJ 7.601.1


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All dimensions in mm



PLAN VIEW

NOTE:- Ensure Separation Between All Cables And The Copper Earth Tail.

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Checked			THREE CORE WAVECON SERVICE BRANCH JOINT GENERAL LAYOUT		LVJ 7.601.2	
Approved						
SCALE	N.T.S.					

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**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.602**

**FOUR CORE WAVECON MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.602

### JOINT KIT REFERENCES

CABLE SIZE	JOINT KIT (SPLIT CONC SERVICES)				1 x 1 ph + 1 x 3 ph
	1 x 1ph	2 x 1 ph	1 x 3ph	2 x 3 ph	
95W	MSB 25	MSB 28	MSB 31	MSB 34	MSB 37
185W	MSB 26	MSB 29	MSB 32	MSB 35	MSB 38
300W	MSB 37	MSB 30	MSB 33	MSB 36	MSB 39

Key: - 95W = 95mm<sup>2</sup> Wavecon  
185W = 185mm<sup>2</sup> Wavecon  
300W = 300mm<sup>2</sup> Wavecon

## JOINTING PROCEDURE 7.602

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS			EARTH TAIL
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	BCNE 3	LVCU 1700/5
MSB25	1		2	1	2		2	1
MSB26		1		3	2		2	1
MSB27		1		3		2	2	1
MSB28	1		2	1	2		2	1
MSB29		1		3	2		2	1
MSB30		1		3		2	2	1
MSB31	1		2	1	4		2	1
MSB32		1		3	4		2	1
MSB33		1		3		4	2	1
MSB34	1		2	1	4		2	1
MSB35		1		3	4		2	1
MSB36		1		3		4	2	1
MSB37	1		2	1	4		2	1
MSB38		1		3	4		2	1
MSB39		1		3		4	2	1

#### ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch  
 Black cotton tape  
 Sealing putty  
 Cable ties  
 Shell support  
 Tinned copper braid (15 x 1.5)  
 16 swg tinned copper wire  
 Emery cloth  
 De-solvit 1000FD  
 Workhorse dry wipes

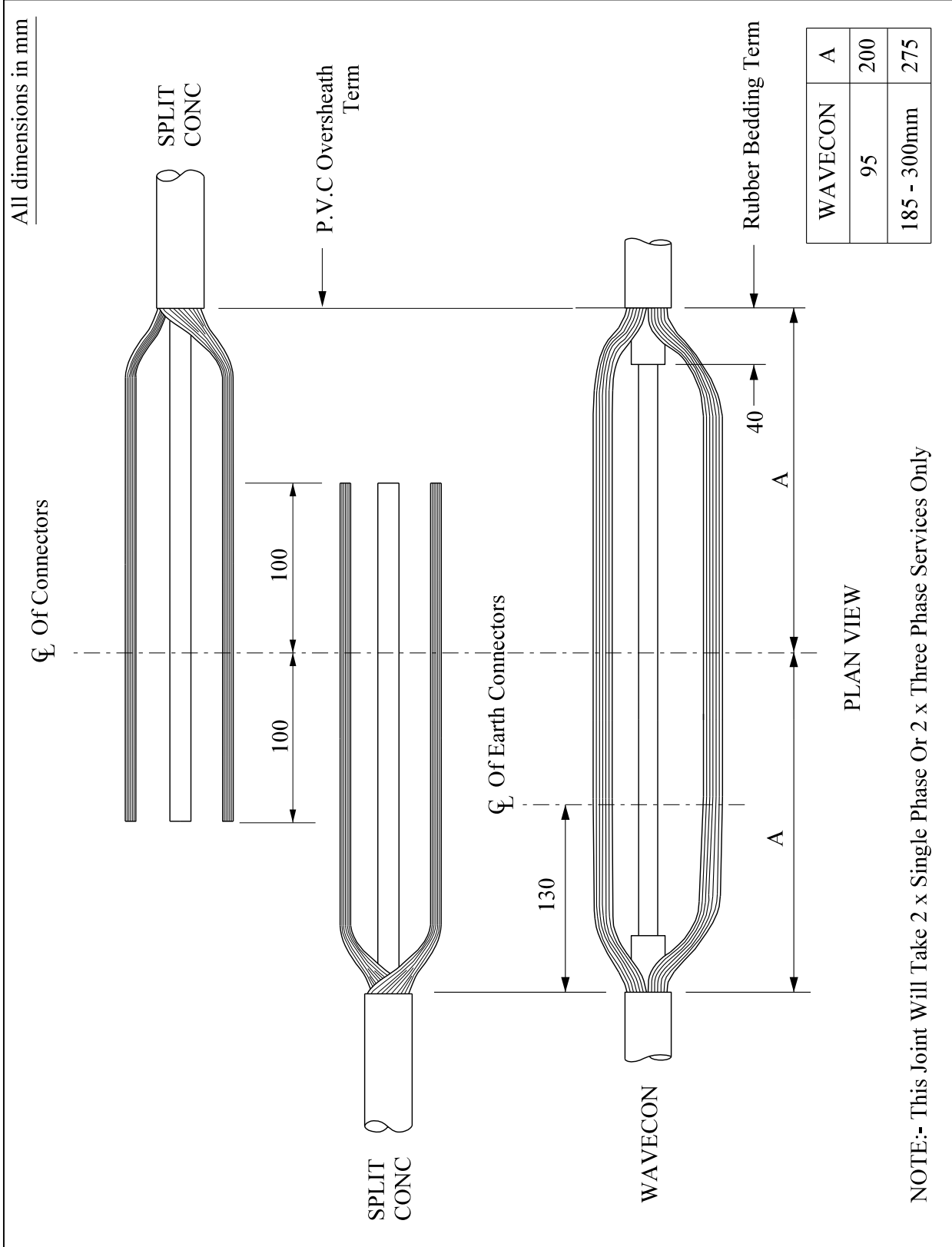
**Note: - Individual material item numbers (SHOPS) are to be found in Section 4 - Part I of the LV Mains Jointing Manual.**

## JOINTING PROCEDURE 7.602

<b>Actions</b>	<b>General Requirement (ST: CA1C/4)</b>
Refer to Drawing <b>LVJ 7.602.1, 7.602.2</b> whilst undertaking this Jointing Procedure	
1. Set up and mark the cables	4
<b>SERVICE CABLE(s) - Preparation</b>	
2. Open and cut cable	17
3. Prepare neutral/earth wires for jointing	8
<b>WAVECON CABLE - Preparation</b>	
4. Remove PVC oversheath	6
5. Prepare neutral/earth wires for jointing	8
6. Remove rubber bedding	9
<b>COMPLETION OF JOINT</b>	
7. Set cores in joint position	27
8. Connect earth wires including equalisation bond and copper earth tail	29
9. Apply temporary shrouding	21
10. Make neutral connection(s)	29
11. Make phase connections(s)	29
12. Remove temporary shrouding applied in 9	--
13. Form earth wires into their final positions	--
14. Abrade and build up oversheaths	32
15. Thoroughly degrease the joint	35

## JOINTING PROCEDURE 7.602 - Continued

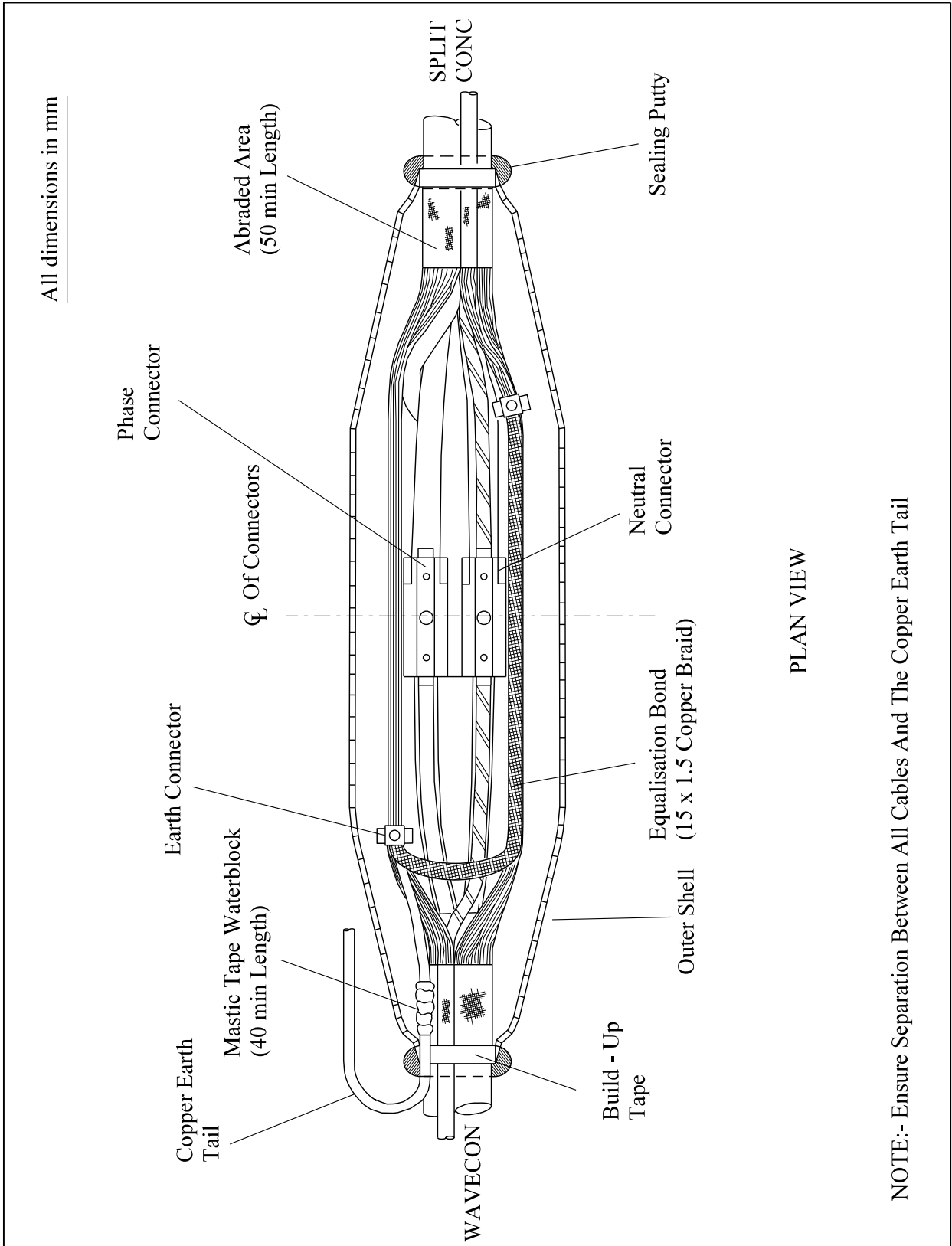
Actions	General Requirements (ST: CA1C/4)
16. Apply mastic water block to copper earth tail	33
17. Remove temporary binders	--
18. Prepare and fit shell, ensuring 15mm clearance	36
19. Mix and pour resin	37



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


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Drawn	RJB 06/12	Title FOUR CORE WAVECON SERVICE BRANCH JOINT STRIPPING DIMENSIONS			
Checked					Rev No
Approved					
SCALE	N.T.S.				

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PLAN VIEW

NOTE:- Ensure Separation Between All Cables And The Copper Earth Tail

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Checked			FOUR CORE WAVECON SERVICE BRANCH JOINT GENERAL LAYOUT		LVJ 7.602.2	
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**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.603**

**FOUR CORE WAVECON CNE MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.603

### 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	MSB 40	MSB 43	MSB 46	MSB 49	MSB 52	MSB 55	MSB 58	MSB 61
185W	MSB 41	MSB 44	MSB 47	MSB 50	MSB 53	MSB 56	MSB 59	MSB 62
300W	MSB 42	MSB 45	MSB 48	MSB 51	MSB 54	MSB 56	MSB 60	MSB 63

## JOINTING PROCEDURE 7.603

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS			EARTH TAIL
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	BCNE 3	LVCU 1700/5
MSB40	1		2	1	2		2	1
MSB41		1		3	2		2	1
MSB42		1		3		2	2	1
MSB43	1		2	1	2		2	1
MSB44		1		3	2		2	1
MSB45		1		3		2	2	1
MSB46	1		2	1	3		2	1
MSB47		1		3	3		2	1
MSB48		1		3		3	2	1
MSB49	1		2	1	3		2	1
MSB50		1		3	3		2	1
MSB51		1		3		3	2	1
MSB52	1		2	1	4		2	1
MSB53		1		3	4		2	1
MSB54		1		3		4	2	1
MSB55	1		2	1	4		2	1
MSB56		1		3	4		2	1
MSB57		1		3		4	2	1
MSB58	1		2	1	4		2	1
MSB59		1		3	4		2	1
MSB60		1		3		4	2	1
MSB61	1		2	1	4		2	1
MSB62		1		3	4		2	1
MSB63		1		3		4	2	1

#### ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch  
 Black cotton tape  
 Sealing putty  
 Cable ties  
 Shell support  
 16 swg tinned copper wire  
 PVC tape  
 35mm<sup>2</sup> PVC sheathed (green/yellow) copper  
 Emery cloth  
 De-solvit 1000FD  
 Workhorse dry wipes

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

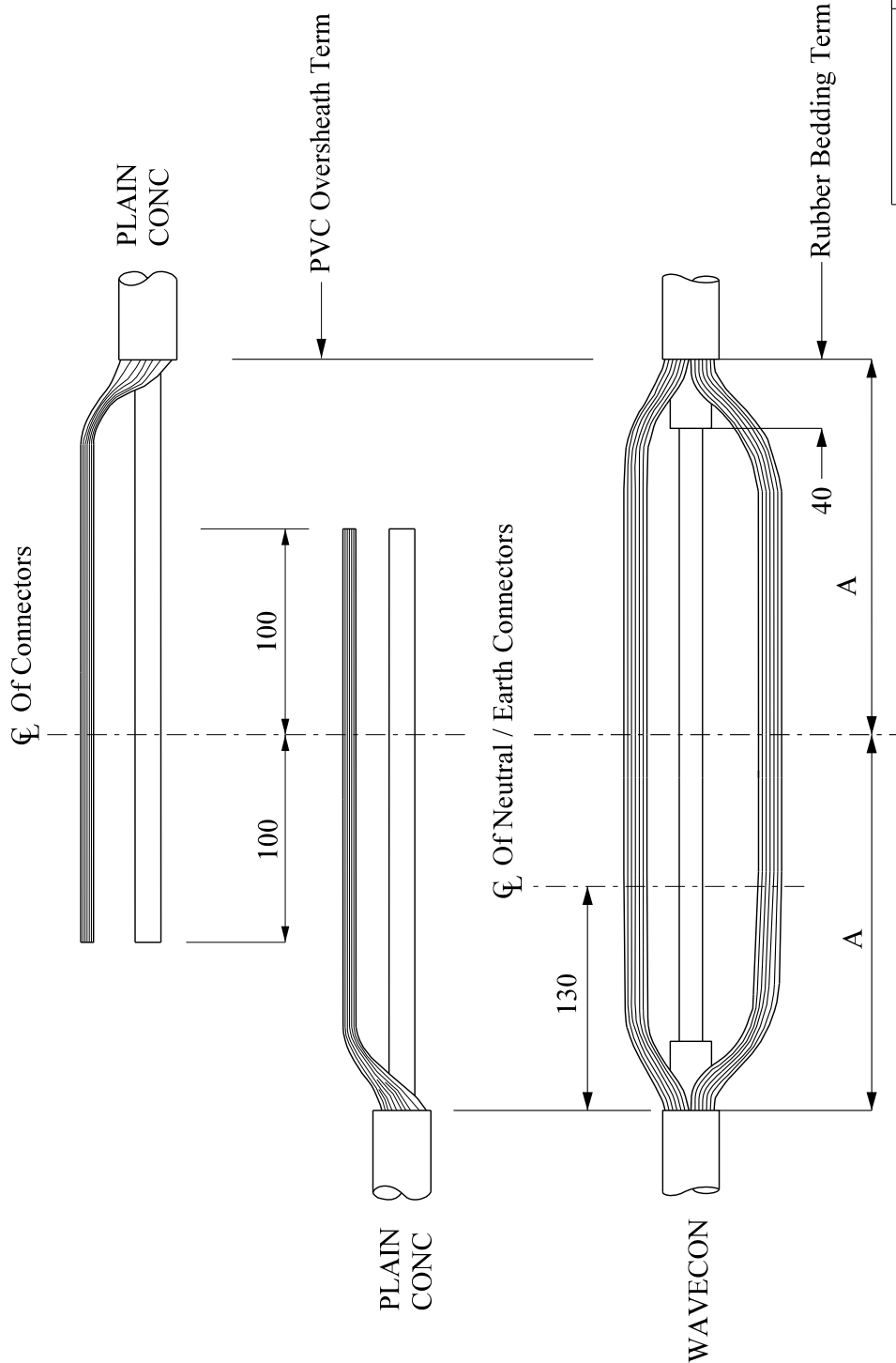
## JOINTING PROCEDURE 7.603

<b>Actions</b>	<b>General Requirement (ST: CA1C/4)</b>
Refer to Drawing <b>LVJ 6.703.1, 6.703.2</b> whilst undertaking this Jointing Procedure	
1. Set up and mark the cables	4
<b>SERVICE CABLE(s) - Preparation</b>	
2. Open and cut cable	17
3. Prepare neutral/earth wires for jointing	8
<b>WAVECON CABLE - Preparation</b>	
4. Remove PVC oversheath	6
5. Prepare neutral/earth wires for jointing	8
6. Remove rubber bedding	9
<b>COMPLETION OF JOINT</b>	
7. Set cores in joint position	27
8. Connect 35mm <sup>2</sup> neutral/earth bond to neutral conductor	29
9. Make neutral/earth connections including neutral/earth bond and copper earth tail	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 positions	--
14. Abrade and build up oversheaths	32


## JOINTING PROCEDURE 7.603 - Continued

Actions	General Requirements (ST: CA1C/4)
16. Thoroughly degrease the joint	35
17. Apply mastic water block to copper earth tail	3
18. Remove temporary binders	--
19. Prepare and fit shell, ensuring 15mm clearance	36
20. Mix and pour resin	37

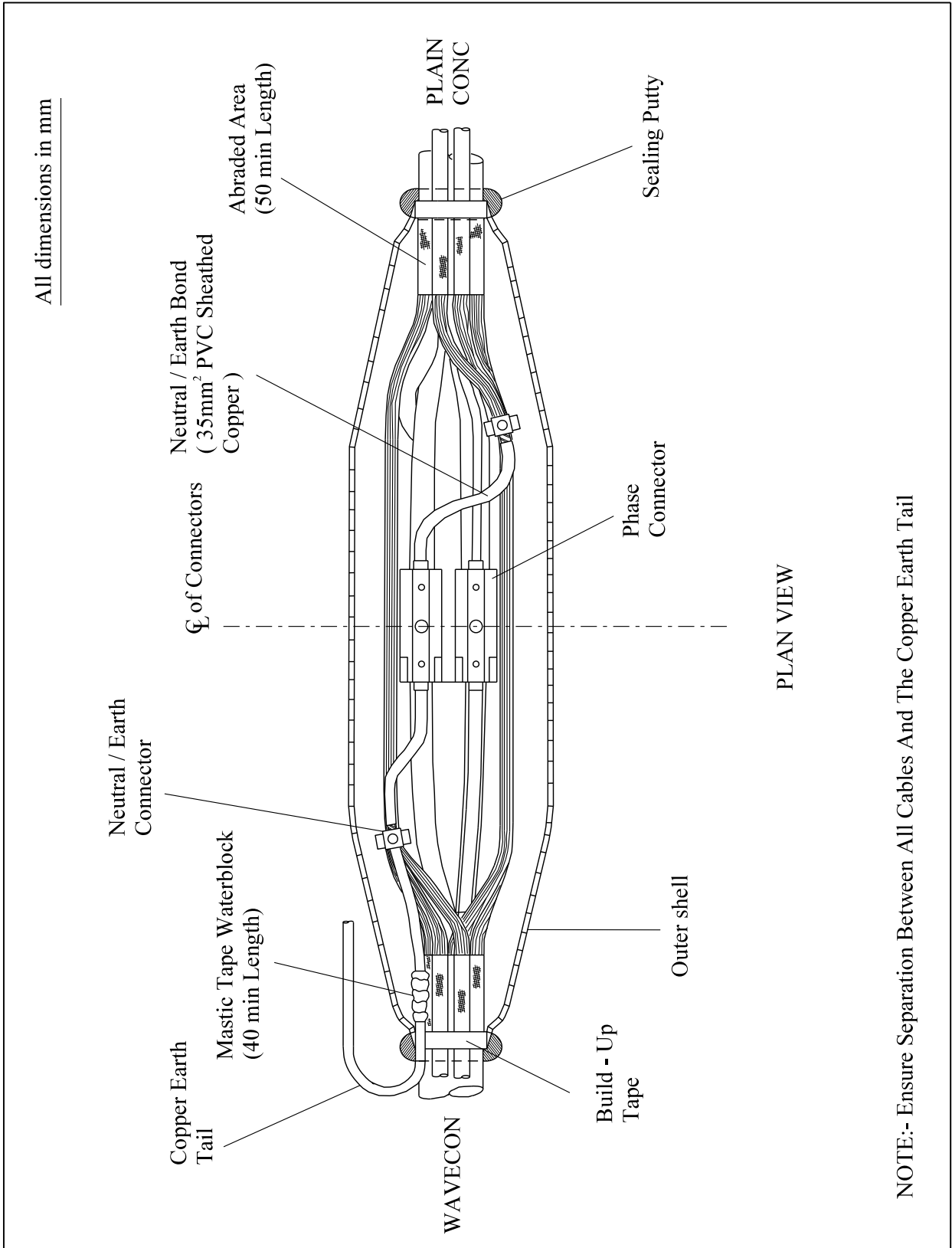
All dimensions in mm



WAVECON	A
95	200
185 - 300mm	275

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Checked		FOUR CORE WAVECON CNE SERVICE BRANCH JOINT STRIPPING DIMENSIONS			LVJ 7.603.1	
Approved		SCALE			N.T.S.	


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All dimensions in mm

PLAN VIEW

NOTE:- Ensure Separation Between All Cables And The Copper Earth Tail

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Checked			FOUR CORE WAVECON CNE SERVICE BRANCH JOINT GENERAL LAYOUT		LVJ 7.603.2	
Approved						
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**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.604**

**CONSAC MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.604

### 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	MSB 64	MSB 66	MSB 68	MSB 70	MSB 72	MSB 74	MSB 76	MSB 78
185C	MSB 65	MSB 67	MSB 69	MSB 71	MSB 73	MSB 75	MSB 77	MSB 79
240C	MSB 80	MSB 81	MSB 82	MSB 83	MSB 84	MSB 85	MSB 86	MSB 87

Key: -

95C = 95mm<sup>2</sup> Consac

185C = 185mm<sup>2</sup> Consac

240C = 240mm<sup>2</sup> Consac

**Note: - 240mm<sup>2</sup> Consac is only to be found in the Midlands Region of WPD.**

## JOINTING PROCEDURE 7.604

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS			EARTH TAIL
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	TA3	LVCU 1700/5
MSB 64	1		2	1	1		2	1
MSB 65	1		2	1	1		2	1
MSB 66	1		2	1	1		2	1
MSB 67	1		2	1	1		2	1
MSB 68	1		2	1	2		2	1
MSB 69	1		2	1	2		2	1
MSB 70	1		2	1	2		2	1
MSB 71	1		2	1	2		2	1
MSB 72	1		2	1	3		2	1
MSB 73	1		2	1	3		2	1
MSB 74	1		2	1	3		2	1
MSB 75	1		2	1	3		2	1
MSB 76	1		2	1	3		2	1
MSB 77	1		2	1	3		2	1
MSB 78	1		2	1	3		2	1
MSB 79	1		2	1	3		2	1
MSB 80		1		3		1	2	1
MSB 81		1		3		1	2	1
MSB 82		1		3		2	2	1
MSB 83		1		3		2	2	1
MSB 84		1		3		3	2	1
MSB 85		1		3		3	2	1
MSB 86		1		3		3	2	1
MSB 87		1		3		3	2	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 block tape  
Emery cloth  
De-solvit 1000FD  
De-solvit 1000  
Workhorse dry wipes

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

**Note: - 240mm<sup>2</sup> Consac is only to be found in the Midlands Region of WPD.**

## JOINTING PROCEDURE 7.604

<b>Actions</b>	<b>General Requirement (ST: CA1C/4)</b>
----------------	---

Refer to Drawing **LVJ 7.604.1, 7.604.2** whilst undertaking this Jointing Procedure

- |    |                        |   |
|----|------------------------|---|
| 1. | Set up and mark cables | 4 |
|----|------------------------|---|

### **SERVICE CABLE(s) - Preparation**

- |    |  |    |
|----|--|----|
| 2. | Open and cut                             | 17 |
| 3. | Prepare neutral/earth wires for jointing | 8  |

### **CONSAC CABLE - Preparation**

- |    |  |    |
|----|--|----|
| 4. | Remove PVC oversheath                          | 6  |
| 5. | Open and prepare neutral/earth sheath          | 12 |
| 6. | Remove belt papers and carry out moisture test | 19 |

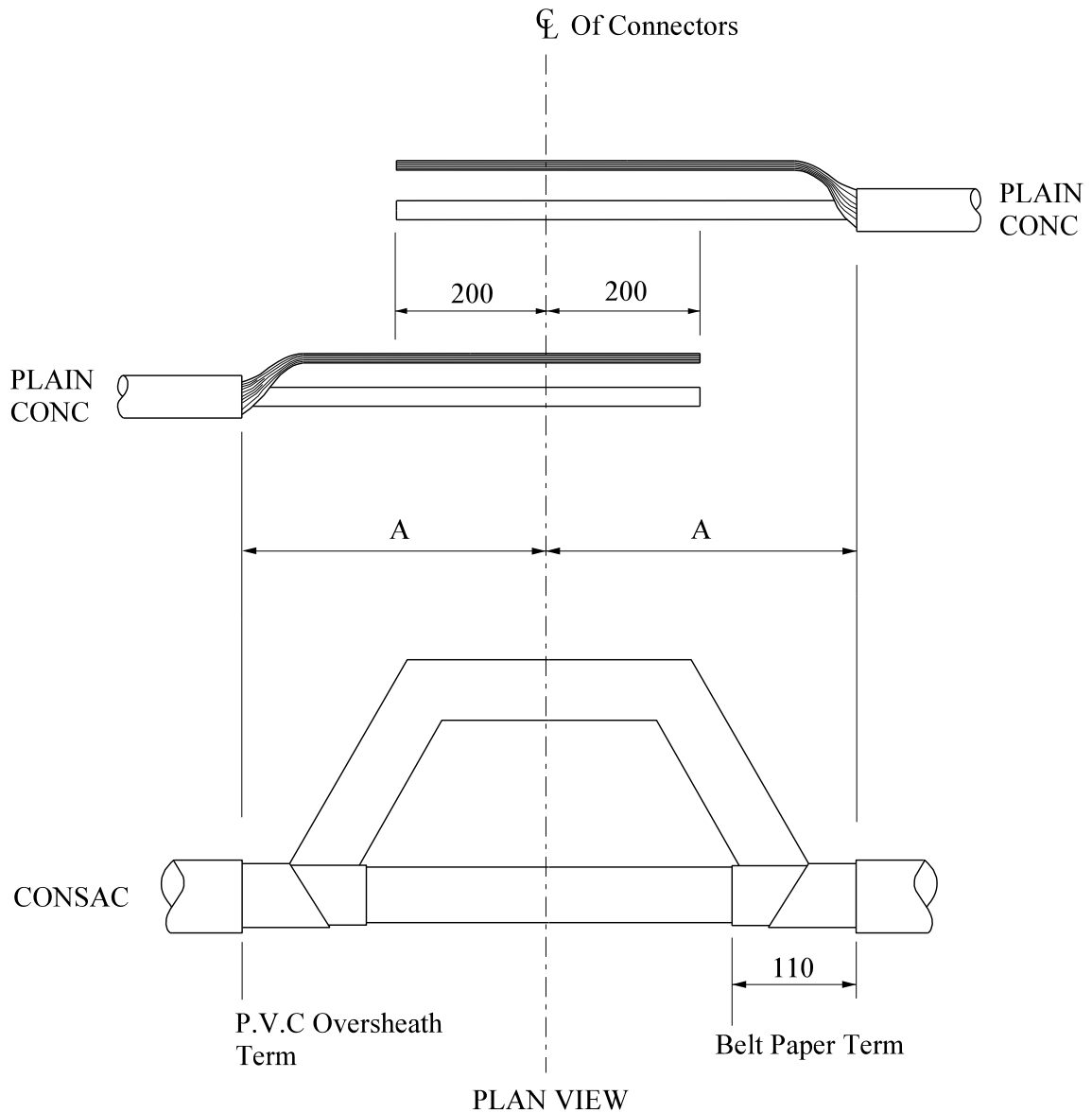
### **COMPLETION OF JOINT**

- |     |   |    |
|-----|---|----|
| 7.  | Set cores in joint position   | 27 |
| 8.  | Connect neutral/earth wires to neutral/earth sheath                         | 29 |
| 9.  | Apply temporary shrouding   | 21 |
| 10. | Make phase connections  | 29 |
| 11. | Remove temporary shrouding applied in 10                                    | -- |
| 12. | Form neutral/earth wires and neutral/earth sheath into their final position | 31 |
| 13. | Connect copper earth tail to neutral/earth sheath                           | 29 |
| 14. | Abrade and build up oversheaths   |    |


## JOINTING PROCEDURE 7.604 - Continued

Actions	General Requirements (ST: CA1C/4)
15. Thoroughly degrease the joint	35
16. Apply mastic water blocks to copper earth tail and Consac PVC oversheath termination	33
17. Prepare and fit shell, ensuring 15mm clearance	36
18. Mix and pour resin	37

All dimensions in mm

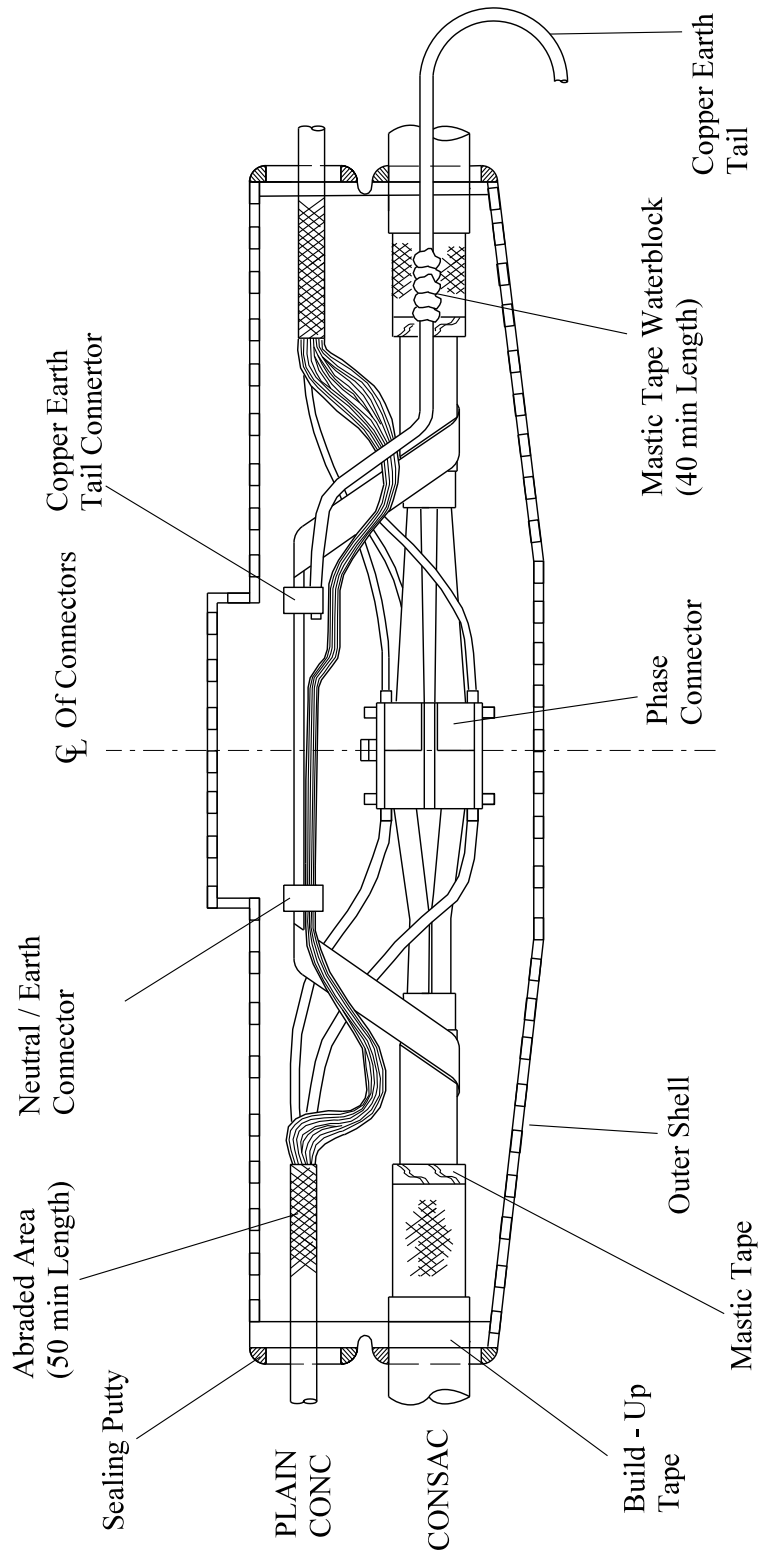


CABLE SIZE	A
95 - 185mm <sup>2</sup>	240
240mm <sup>2</sup>	310

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SCALE	N.T.S.						


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All dimensions in mm



SIDE VIEW

NOTE:- Ensure Separation Between All Cables And The Copper Earth Tail

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**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.605**

**PILC MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.605

### JOINT KIT REFERENCES

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

## JOINTING PROCEDURE 7.605

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS		EARTH BOND	EARTH TAIL
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	LVEB 08	LVCU 1700/5
MSB 88	1		2	1	2		2	1
MSB 89		1		3		2	2	1
MSB 90	1		2	1	2		2	1
MSB 91		1		3		2	2	1
MSB 92	1		2	1	4		2	1
MSB 93		1		3		4	2	1
MSB 94	1		2	1	4		2	1
MSB 95		1		3		4	2	1
MSB 96	1		2	1	4		2	1
MSB 97		1		3		4	2	1

#### ADDITIONAL ITEMS FOR EACH JOINT

Insulation patch  
 Black cotton tape  
 Sealing putty  
 Cable ties  
 Shell support  
 Whipping thread  
 PVC tape  
 35mm<sup>2</sup> PVC sheathed (green/yellow) copper  
 Emery cloth  
 De-solvit 1000FD  
 De-solvit 1000  
 Workhorse dry wipes

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

**Note: - 240mm<sup>2</sup> Consac is only to be found in the Midlands Region of WPD.**

## JOINTING PROCEDURE 7.605

<b>Actions</b>	<b>General Requirement (ST: CA1C/4)</b>
----------------	---

Refer to Drawing **LVJ 7.605.1, 7.605.2** whilst undertaking this Jointing Procedure

1.	Set up and mark the cables	4
----	----------------------------	---

### **SERVICE CABLE(s) - Preparation**

2.	Open and cut cable	17
3.	Prepare neutral and earth wires for jointing	8

### **PILC CABLE - Preparation**

4.	Remove serving, armour and bedding then thoroughly clean the lead sheath	10
5.	Apply armour bonds to lead sheaths	23
6.	Fit temporary earth continuity bond to lead sheath	11
7.	Remove lead sheath	13
8.	Remove belt papers and carry out moisture test	19
9.	Apply lead sheath bonds	23

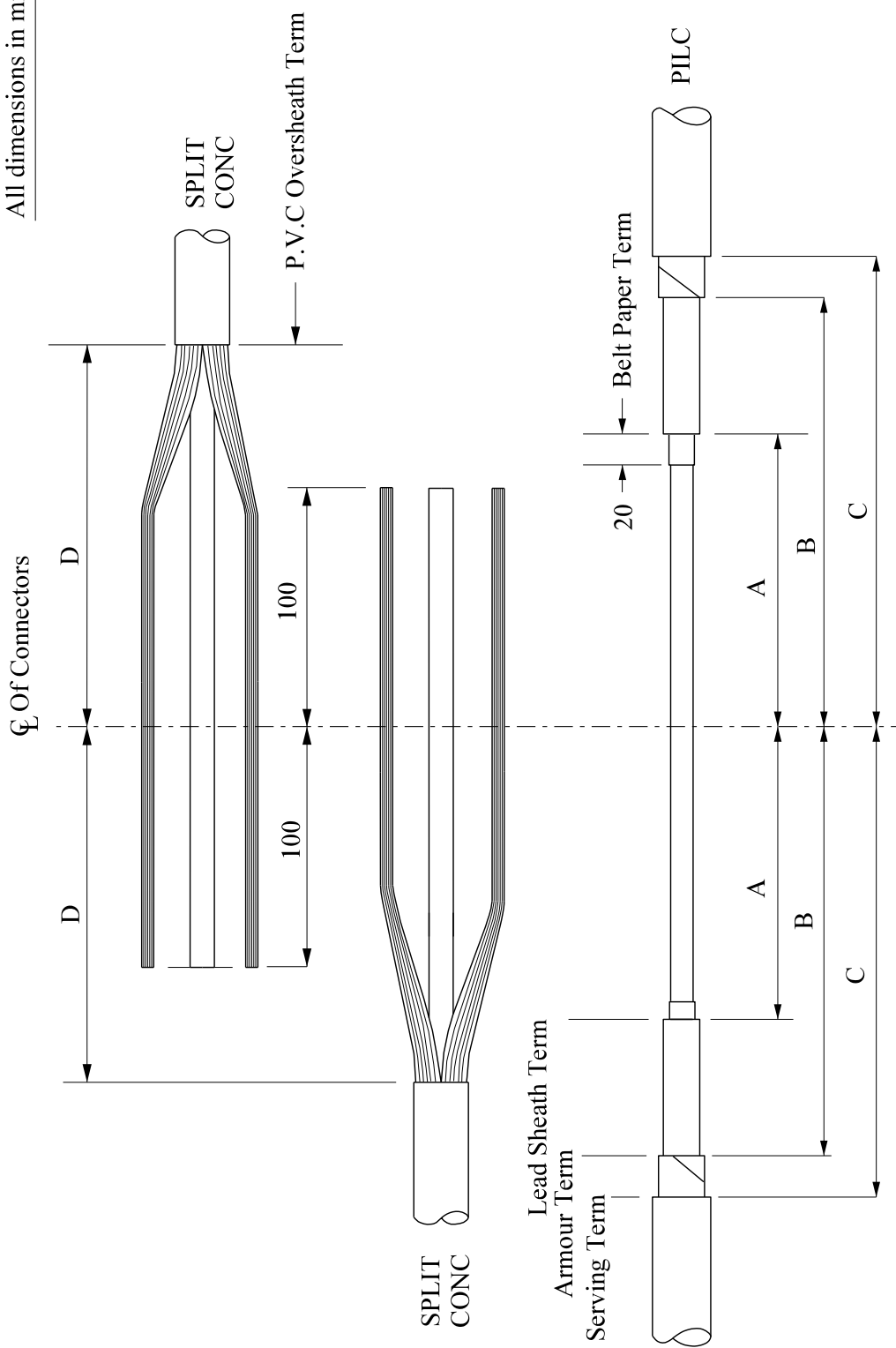
### **COMPLETION OF JOINT**

10.	Set cores in joint position	27
11.	Connect a 35mm <sup>2</sup> earth wire to lead sheath bonds including copper earth tail and earth wires of service cable	--
12.	Remove temporary earth continuity bond applied in 6	--
13.	Apply temporary shrouding	21
14.	Make neutral connection(s)	29

## JOINTING PROCEDURE 7.605 - Continued

Actions	General Requirements (ST: CA1C/4)
15. Make phase connection(s)	29
16. Remove temporary shrouding applied in 13	--
17. Abrade and build up oversheaths	32
18. Thoroughly degrease the joint	35
19. Apply mastic water blocks to lead sheaths and copper earth tail	33
20. Prepare and fit shell, ensuring 15mm clearance	36
21. Mix and pour resin	37


All dimensions in mm



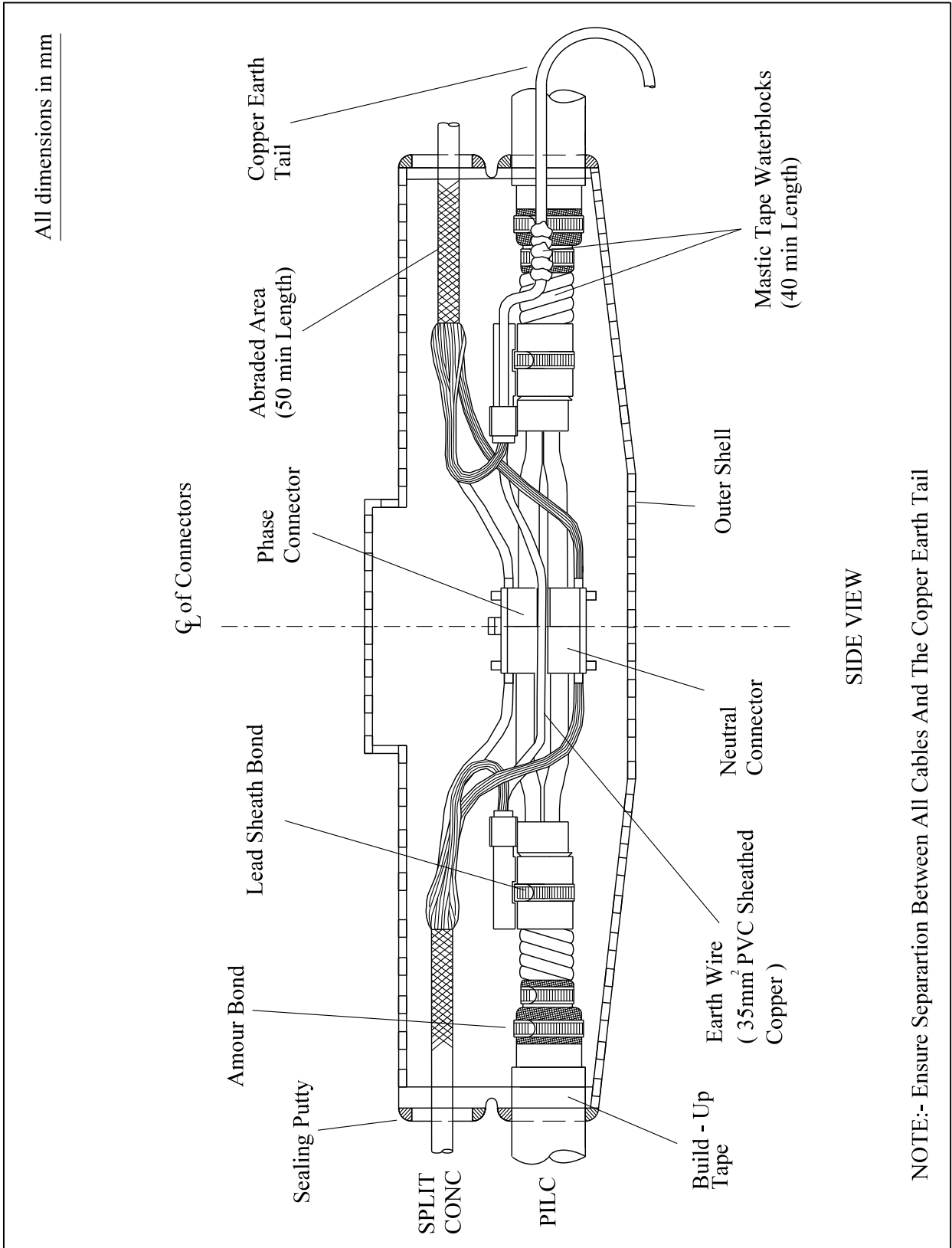
PILC	A	B	C	D
50 - 120	200	320	360	240
185 - 300	275	395	435	315

PLAN VIEW

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

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SCALE	N.T.S.					

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SCALE	N.T.S.				

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**ST: CA1I/4 PROCEDURES FOR MAKING LV MAINS CABLE  
SERVICE BRANCH JOINTS**

**JOINTING PROCEDURE 7.606**

**PILC CNE MAINS CABLE  
SERVICE BRANCH JOINT**

**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 7.606

### JOINT KIT REFERENCES

CABLE SIZE	JOINT BOX 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	MSB 98	MSB 100	MSB 102	MSB 104	MSB 106	MSB 108	MSB 110	MSB 112
185 – 300 PILC	MSB 99	MSB 101	MSB 103	MSB 105	MSB 107	MSB 109	MSB 111	MSB 113

## JOINTING PROCEDURE 7.606

### JOINT KIT MATERIALS

KIT REF.	SHELL		RESIN		CONNECTORS		EARTH BOND	EARTH TAIL
	1581	1580	5 litre	6.5 litre	MSIP 185	MSIP 300	LVEB 08	LVCU 1700/5
MSB98	1		2	1	2		2	1
MSB99		1		3		2	2	1
MSB100	1		2	1	2		2	1
MSB101		1		3		2	2	1
MSB102	1		2	1	3		2	1
MSB103		1		3		3	2	1
MSB104	1		2	1	3		2	1
MSB105		1		3		3	2	1
MSB106	1		2	1	4		2	1
MSB107		1		3		4	2	1
MSB108	1		2	1	4		2	1
MSB109		1		3		4	2	1
MSB110	1		2	1	4		2	1
MSB111		1		3		4	2	1
MSB112	1		2	1	4		2	1
MSB113		1		3		4	2	1

### ADDITIONAL ITEMS FOR EACH JOINT

Insulation Patch  
 Black cotton tape  
 Sealing putty  
 Cable ties  
 Shell support  
 Whipping thread  
 PVC tape  
 35mm<sup>2</sup> PVC sheathed (green/yellow) copper  
 Emery cloth  
 De-solvit 1000FD  
 De-solvit 1000  
 Workhorse dry wipes

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

## JOINTING PROCEDURE 7.606

<b>Actions</b>	<b>General Requirement (ST: CA1C/4)</b>
----------------	---

Refer to Drawing **LVJ 7.606.1, 7.606.2** whilst undertaking this Jointing Procedure

- |    |                            |   |
|----|----------------------------|---|
| 1. | Set up and mark the cables | 4 |
|----|----------------------------|---|

### **SERVICE CABLE(s) - Preparation**

- |    |  |    |
|----|--|----|
| 2. | Open and cut cable                       | 17 |
| 3. | Prepare neutral/earth wires for jointing | 8  |

### **PILC CABLE - Preparation**

- |    |  |    |
|----|--|----|
| 4. | Remove serving, armour and bedding then thoroughly clean the lead sheath | 10 |
| 5. | Apply armour bonds to lead sheaths                                       | 23 |
| 6. | Fit temporary earth continuity bond to lead sheath                       | 11 |
| 7. | Remove lead sheath   | 13 |
| 8. | Remove belt papers and carry out moisture tests                          | 19 |
| 9. | Apply lead sheath bonds  | 23 |

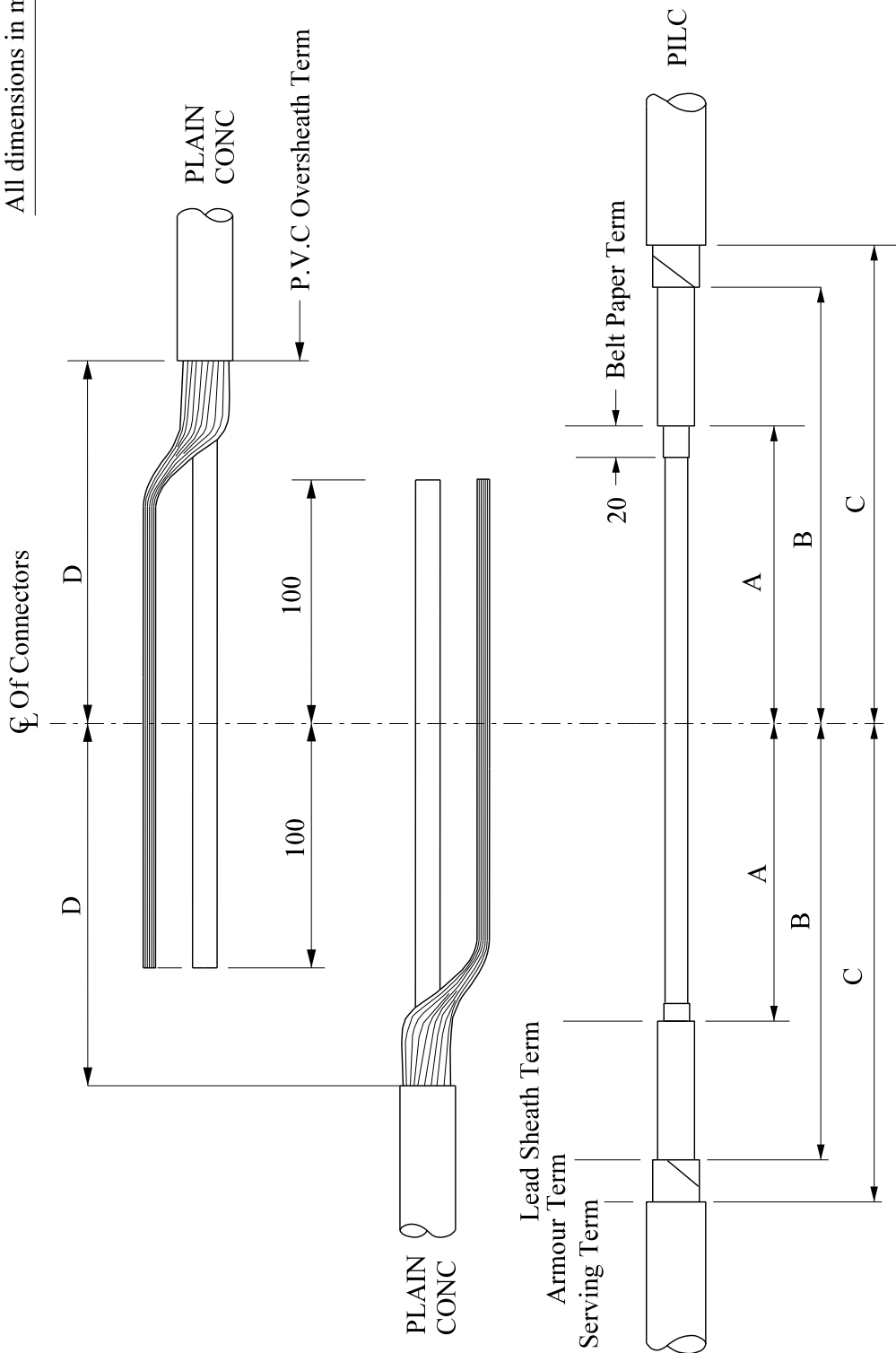
### **COMPLETION OF JOINT**

- |     |   |    |
|-----|---|----|
| 10. | Set cores in joint position   | 27 |
| 11. | Connect a 35mm <sup>2</sup> neutral/earth bond to the neutral conductor   | 29 |
| 12. | Connect a 35mm <sup>2</sup> earth wire to lead sheath bonds including the neutral/earth bond, service neutral/earth wires and copper earth tail | 29 |
| 13. | Remove temporary earth continuity bond applied in 6   | -- |

## JOINTING PROCEDURE 7.606 - Continued


Actions	General Requirements (ST: CA1C/4)
14. Apply temporary shrouding	21
15. Make phase connection(s)	29
16. Remove temporary shrouding applied in 14	--
17. Abrade and build up oversheaths	32
18. Thoroughly degrease the joint	35
19. Apply mastic water blocks to lead sheaths and copper earth tail	33
20. Prepare and fit shell, ensuring 15mm clearance	36
21. Mix and pour resin	37

All dimensions in mm



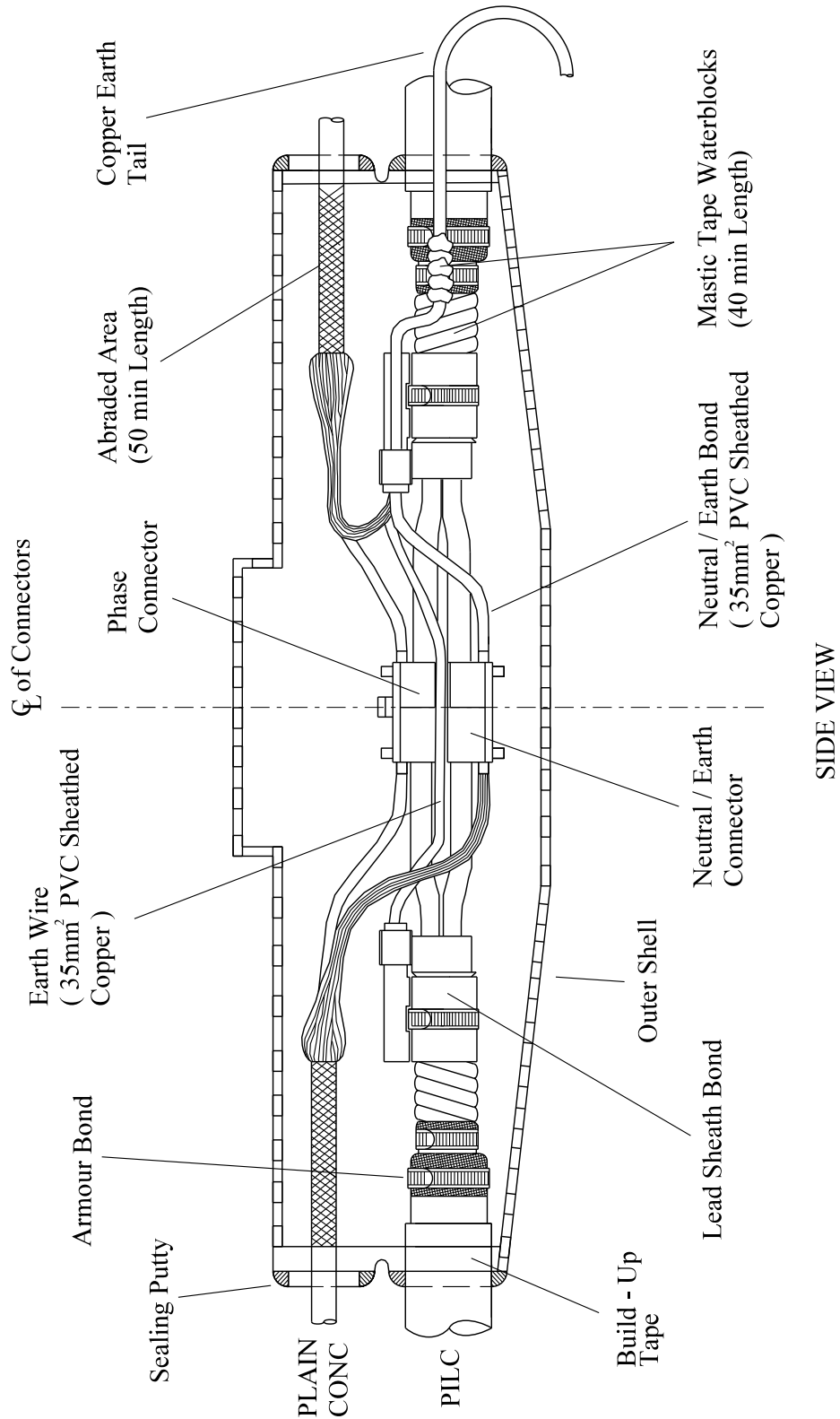
P.I.L.C	A	B	C	D
50 - 120	200	320	360	240
185 - 300	275	395	435	315

PLAN VIEW


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SCALE	N.T.S.					

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All dimensions in mm



NOTE:- Ensure Separation Between All Cables And The Copper Earth Tail

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## **APPENDIX A**

### **SUPERSEDED DOCUMENTATION**

This Standard Technique supersedes ST:CA1I/3 dated October 2001 which should now be withdrawn.

## **APPENDIX B**

### **ASSOCIATED DOCUMENTATION**

ST: CA1A, ST: CA1C/5, ST: CA1 D, ST: CA1E, ST: CA1F, ST: CA1G, ST: CA1H, 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 cable branch joint with services.

## **APPENDIX F**

### **DOCUMENT LAST REVIEWED**

June 2012