

# MUMBAI METRO LINE-2B OF MMRDA

## GAD & GTP of 110 KV Cable Cleats make M/s Peace Power REV-01

DOCUMENT NO.:

CA40-2B-CSR-PSY-DEG-GTP-0122

	Name	Designation	Date	Signature
Approved by	K Sudharsan	Project Manager	23.06.2025	
Reviewed by	S.K. Srivastava	DPM/RVNL	23.06.2025	
Checked by	Nagboshan Rao	Design Engineer	23.06.2025	
Prepared by	Yeswanth Kumar Reddy. N	Execution Engineer (OHE)	23.06.2025	



MUMBAI METRO LINE-2B OF MMRDA	23.06.2025	<b>GAD &amp; GTP of 110 KV Cable Cleats make M/s Peace Power</b>
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APPROVALS					
GENERAL CONSULTANT			MMRDA		
Name	Designation	Signature	Name	Designation	Signature
Vijay Yadav	DPD (Systems)		Laxmi Prasad Kharat	Chief Engineer(Elect)	
Ankit N Aggarwal	Chief Traction Expert		Mohit Naagar	Executive Engineer (Elect)	
Ankit Aggarwal	Sr. Trac on Power Expert		Dinesh Pawar	Deputy Engineer (Elect.)	
G. Balaji	Senior T&C Engineer				



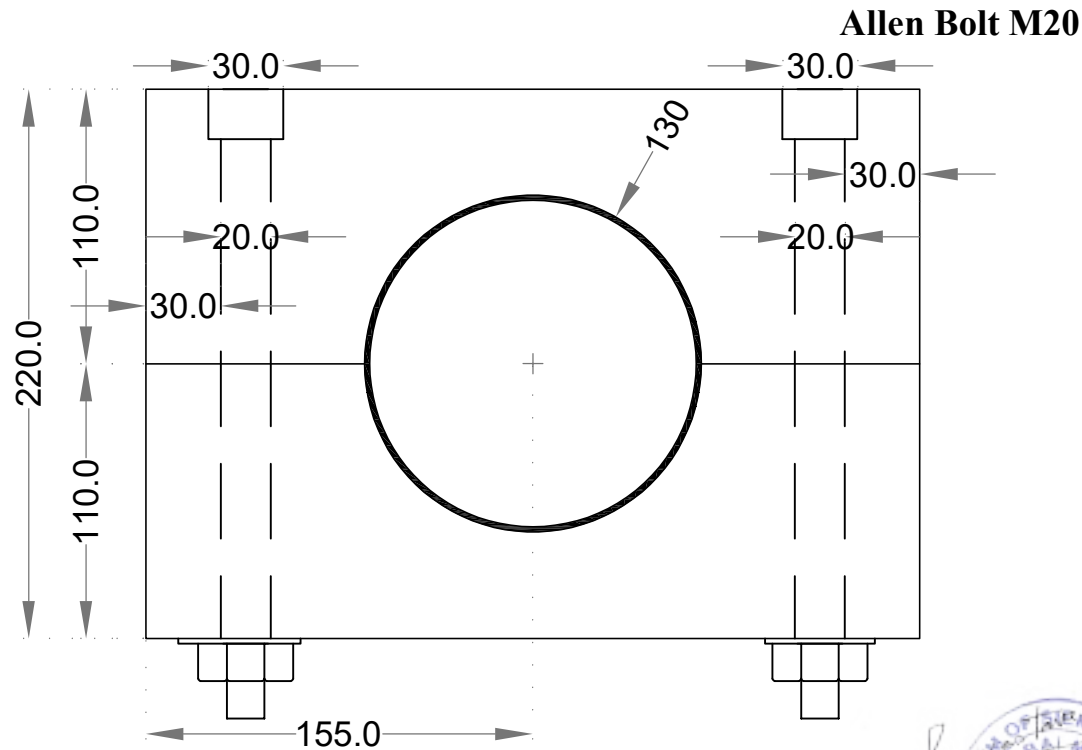
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Revision Log				
Rev	Author	Date	Reference	Changes/Subject of revision
01	Yeswanth Kumar Reddy. N	23.06.2025	Part II-Requirements-Section-6-Employers Requirements, Chapter-4	First Submission

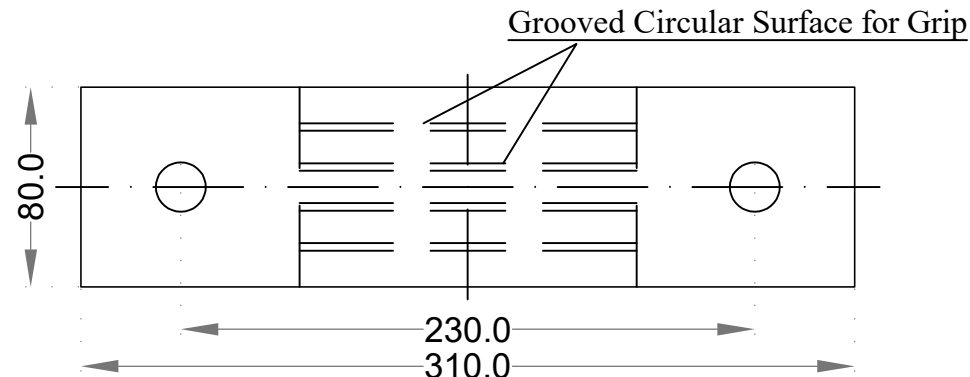


MUMBAI METRO LINE-2B OF MMRDA	23.06.2025	<b><u>GAD &amp; GTP of 110 KV Cable Cleats make M/s Peace Power</u></b>
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**TOP VIEW**



**SIDE VIEW**

### **TECHNICAL SPECIFICATIONS:**

Material of Construction: HDPE


Cable OD: 130 mm

Tolerance: +/- 5 mm

Rubber Liner : Gasket

Hardware: GIMS Nuts, Bolts & Washer

**Note: All Dimensions are in mm.**

		214, Anandraj Industrial Estate, Off LBS road, Sonapur lane, Bhandup(w) Mumbai-400078. Tel: 022-25666524 022-25669069 Email: info@peacepower.in	
TITLE OF DRAWING		HDPE cable cleat for 130 mm OD	
SCALE	PRODUCT CODE	DATE	REV.NO.
N.T.S	PP/HDPE-130	24.06.2025	01

# MUMBAI METRO LINE-2B OF MMRDA

## GTP of 195 sqmm Copper Condcutor M/s Maruti Metal Industries

REV-01

DOCUMENT NO.:

CA40-2B-CSR-PSY-DEG-GTP-0092

	Name	Designation	Date	Signature
Approved by	K Sudharsan	Project Manager	25.04.2025	
Reviewed by	S.K. Srivastava	DPM/RVNL	25.04.2025	
Checked by	Nagboshan Rao	Design Engineer	25.04.2025	
Prepared by	Yeswanth Kumar Reddy. N	Execution Engineer (OHE)	25.04.2025	



MUMBAI METRO LINE-2B OF MMRDA	25.04.2025	GTP of 195 sqmm Copper Condcutor M/s Maruti Metal Industries
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APPROVALS					
GENERAL CONSULTANT			MMRDA		
Name	Designation	Signature	Name	Designation	Signature
Vijay Yadav	DPD (Systems)		Laxmi Prasad Kharat	Chief Engineer (Elect.)	
Ankit N Aggarwal	Chief Traction Expert		Mohit Naagar	Executive Engineer (Elect.)	
Ankit Aggarwal	Sr. Traction Power Expert		Dinesh Pawar	Deputy Engineer (Elect.)	
G. Balaji	Senior T&C Engineer				



MUMBAI METRO LINE-2B OF MMRDA	25.04.2025	GTP of 195 sqmm Copper Conductor M/s Maruti Metal Industries
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Revision Log				
Rev	Author	Date	Reference	Changes/Subject of revision
01	Yeswanth Kumar Reddy. N	25.04.2025	Part II-Requirements-Section-6-Employers Requirements, Chapter-4	First Submission



MUMBAI METRO LINE-2B OF MMRDA	25.04.2025	GTP of 195 sqmm Copper Condcutor M/s Maruti Metal Industries
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Since-1975  
**MARUTI METAL INDUSTRIES**

MSME: UDYAM MICRO-MFG:MH-19-0079071, NSIC CERTIFIED COMPANY  
Manufactures & Stockiest In Ferrous & Non Ferrous Metals & Its Semis Products  
34. PrabhuShree Ram Mandir Marg, Dodia House (4th Kumbharwada) MUMBAI-400 004

PAN NO:ABNFM3652J GST.NO.27ABNFM3652JIZU

TECHNICAL DETAILS STANDARD COPPER CONDUCTORS CLIENTS:SKYLARK ENTERPRISES.

MATERIALS: Copper Stranded Conductor For Earthing,

Basic raw material: ETP Grade Annealed Copper Wire,

Relevant Standards: IS 191,

COPPER STRANDED :195SQMM

Dia Of Single Copper Strands/Wire:2.6+0.03mm,

Number Of Copper Strands(Min):37nos,

NOMINAL DIA MM :18.5MM

Approximate Weight/Meter:Approx.1.780kg/Mtr

Copper Purity(Minimum):99.9%,

WARM REGARDS

MN SINGH/DILIP SINGH-FOR MARUTI METAL INDUSTRIES

9869000753/9969127404, Tele:91-022-66362504

E-Mail: info@marutimetalindustries.com / marutimetals@gmail.com

This is computer generated a document and does not require a signature



To,  
The Project Director,  
Consortium of Ayasa-ITALFER-CEG-Ayasa India (AICA),  
MMRDA Office Building,  
Building No. B1,3<sup>rd</sup> Floor,  
Opp. to New Wadala Truck Terminal Police Station,  
Wadala East,  
Mumbai 400 037.

Name : K Sudharsan  
Department : RC-IN SMO RI-EL PE 5  
Mobile : +91 9840885066  
E-mail : sudharsan.k@siemens.com  
Our Ref : SIEMENS-MMRDA-2B-CA-40-2025-247  
Dated : 22<sup>nd</sup> Feb 2025

**Contract: CA No. MMRDA/2B/MMRP/CA-40: Design, Manufacture, Supply, Installation, Testing and Commissioning of 2 nos. 110kV Receiving Substation Including 110kV, 33kV & 25kV Cabling Work, Complete 25kV Overhead Catenary System along with Switching Station, 33kV Auxiliary Power Distribution System including 33/0.415 kV Auxiliary Sub-Station (ASS) and Complete SCADA System for Main Line & Depot of Mumbai Metro Line 2B of MMRDA.**

**Ref:** LOA: Metro-PIU/System/ML-2B/CA-40/2023/371, dated 09 May 2023.

**Subject:** Submission of GAD & GTP of 1-Phase and 3-Phase Link box with SVL & without SVL - M/s Peace Power Ltd.

Dear Sir,

With reference to the above, please find the below details of the document attached with the letter.

Sr.No.	Subject	Rev	Purpose
1	Definitive Design GAD & GTP of 1-Phase and 3-Phase Link box with SVL & without SVL - M/s Peace Power Ltd. (Doc No. CA40-2B-CSR-PSY-DEG-GTP-0073)	01	For review and approval

We kindly request you to review and accord your approval for the above document.

Thanking you and assuring you our best services always, we remain.

Yours Sincerely,

On behalf of Consortium of Siemens Ltd. & Rail Vikas Nigam L

  
K Sudharsan  
Contractor's Representative (CA – 40)

Encl : As above  
Response to : NA  
Resp. Requested : Yes

Cc: Director System, PIU, MMRDA

THE TATA POWER COMPANY LIMITED PROJECT ENGINEERING DEPARTMENT	
APPROVAL STATUS: 01/Mar/2025	
I	Approved
II	Approved subject to incorporation of comments as marked. Resubmit for formal approval.
III	Not Approved. Incorporate comments as marked. Resubmit for review / approval.
IV	IV(a) - Retained for information IV(b) - Resubmit after review & incorporation of comments.
<div style="display: flex; justify-content: space-between;"> <div>  Checked By </div> <div>  Approved by </div> </div>	

## MUMBAI METRO LINE-2B OF MMRDA

### GAD & GTP of 1-Phase,3-Phase Link box with SVL& with out SVL make M/s Peace Power Ltd

REV-01

DOCUMENT NO.:

CA40-2B-CSR-PSY-DEG-GTP-0073

	Name	Designation	Date	Signature
Approved by	K Sudharsan	Project Manager	22.02.2025	
Reviewed by	S.K. Srivastava	DPM/RVNL	21.02.2025	
Checked by	Nagboshan Rao	Design Engineer	21.02.2025	
Prepared by	Yeswanth Kumar Reddy. N	Execution Engineer (OHE)	21.02.2025	

MUMBAI METRO LINE-2B OF MMRDA	21.02.2025	GAD & GTP of 1-Phase,3-Phase Link box with SVL & with out SVL make M/s Peace Power Ltd
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APPROVALS					
GENERAL CONSULTANT			MMRDA		
Name	Designation	Signature	Name	Designation	Signature
Vijay Yadav	DPD (Systems)		Laxmiprasad Kharat	Chief Engineer	
Ankit N Aggarwal	Chief Traction Expert		Mohit Naagar	Executive Engineer	
D. Aldus Huxley	Sr. Quality Assurance Expert		Dinesh Pawar	Deputy Engineer (Elect.)	
G. Balaji	Senior T&C Engineer				
Rajesh Sanodia	Senior T&C Engineer				

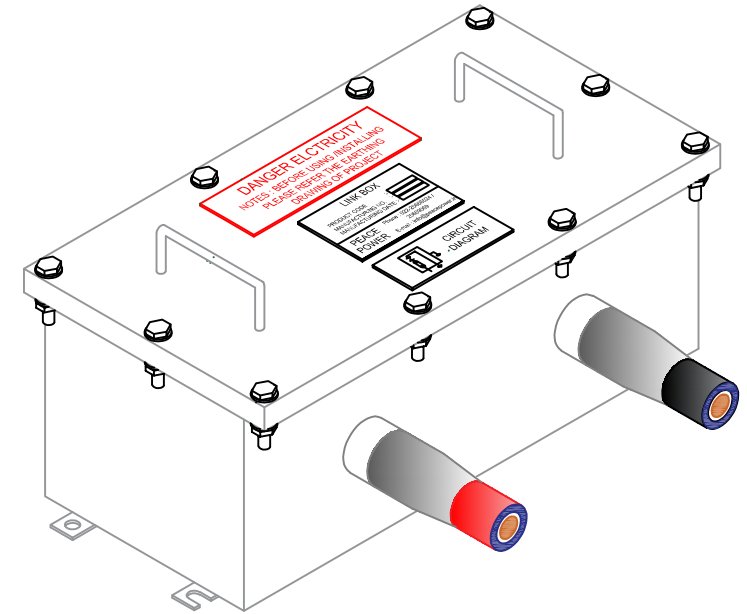
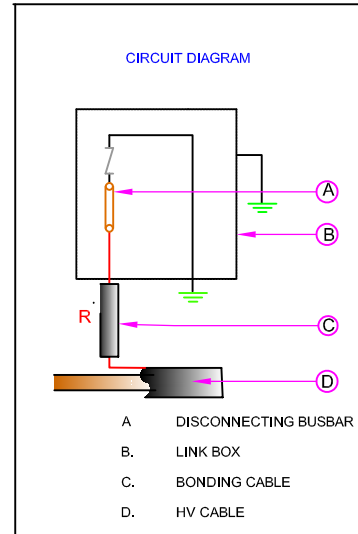
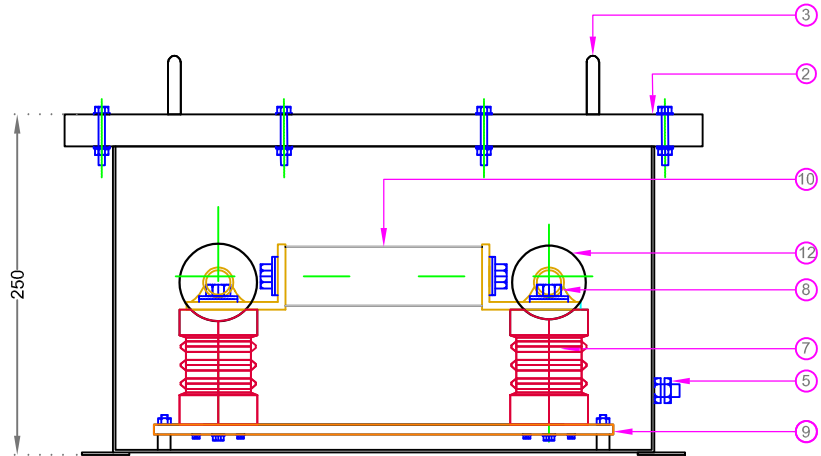
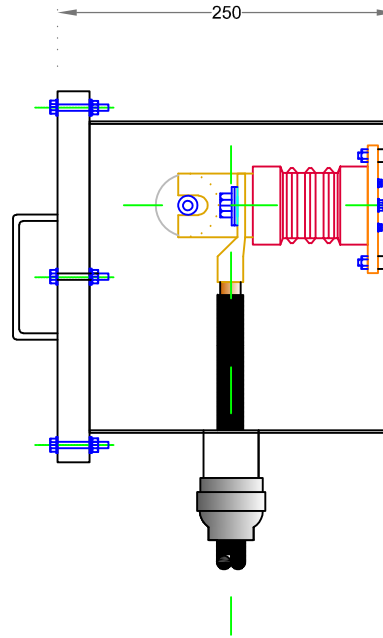
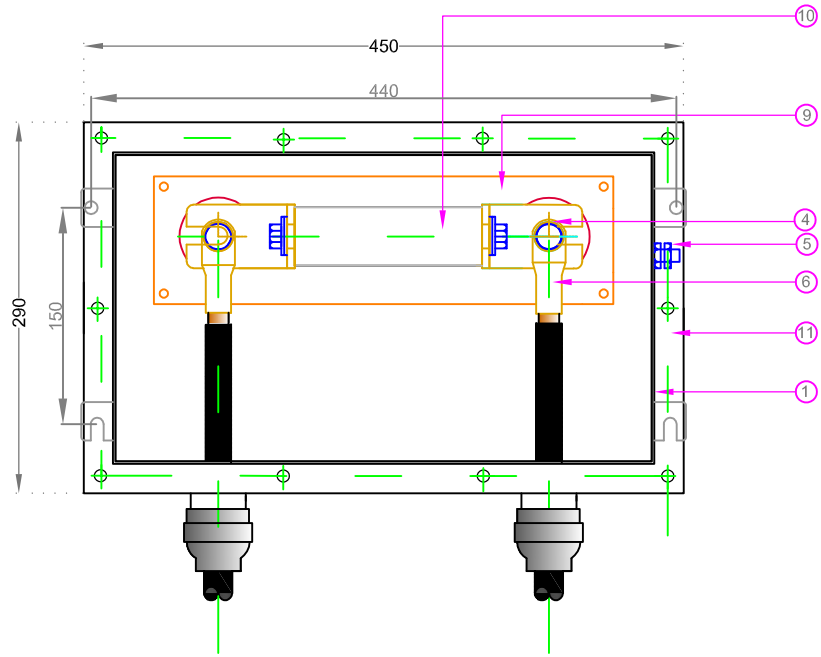


MUMBAI METRO LINE-2B OF MMRDA	21.02.2025	GAD & GTP of 1-Phase,3-Phase Link box with SVL & with out SVL make M/s Peace Power Ltd
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Revision Log				
Rev	Author	Date	Reference	Changes/Subject of revision
01	Yeswanth Kumar Reddy. N	21.02.2025	Part II-Requirements-Section-6-Employers Requirements, Chapter-4	First Submission



MUMBAI METRO LINE-2B OF MMRDA	21.02.2025	GAD & GTP of 1-Phase,3-Phase Link box with SVL & with out SVL make M/s Peace Power Ltd
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SR NO.	LIST OF MAIN PARTS	MATERIAL
1.	LINK BOX CASING	2 MM THK, S.S 304
2.	LINK BOX LID	2 MM THK, S.S 304
3.	HANDLE	S.S 304
4.	LINK PLATES	TINNED Cu
5.	BOX EARTHING BOLT	S.S 304
6.	CABLE LUGS	TINNED Cu
7.	INSULATOR	EPOXY RESIN
8.	BOLTS & NUTS	S.S 304
9.	INSULATING BASE PLATE	FRP
10.	SHEATH VOLTAGE LIMITER	ZnO
11.	RUBBER GASKET	NEOPRENE
12.	CABLE ENTRY	SS304

SR NO.	TYPE TESTS
1.	SHORT CIRCUIT TEST
2.	IP 68 TEST
3.	25 KV DC - HV TEST
4.	CONTACT RESISTANCE TEST

**NOTE:-**

- ALL DIMENSIONS ARE IN MM.
- SURFACE TREATMENT OF COPPER LINKS: SILVER/ TIN PLATED
- DIMENSIONAL TOLERANCE :  $\pm 5\%$
- ALL STAINLESS STEEL MATERIALS SHALL CONFIRM TO AISI: 304.
- ALL S.S FASTENERS SHALL CONFIRM TO IS: 1367-2002
- ALL COPPER LINKS SHALL CONFIRM TO IS: 1897-1983 & IS:191.
- SURFACE TREATMENT OF COPPER LINKS: TIN PLATED
- LINK BOX SURFACE IS POWDER COATED CONFIRM TO RAL 7032 COLOR
- LINK BOX DEGREES OF PROTECTION SHALL CONFORM TO IP-68 AS PER IS: 13947 / IEC 60529



214, Anandraj Industrial Estate, Off LBS road, Sonapur lane, Bhandup (west)  
Mumbai-400078.  
Tel: 022-25666524 / 25161524  
Email: info@peacepower.in

**DRAWING TITLE :**

**SINGLE PHASE LINK BOX WITH SVL**

PRODUCT CODE: PP/SP-01		DRAWING NO: PP/SP-01/68/1001	
DESIGNED BY:	SD	DATE OF ISSUE:	20.11.2018
DRAWN BY:	VN	DATE OF REV:	
APPROVED BY:	AD	SHEET: 01 of 02	SCALE: N.T.S. REV: 01



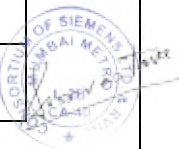
214, AnandRaj Ind. Estate, Bhandup-Sonapur Lane, Off L.B.S. Marg, Bhandup (W), Mumbai - 400 078  
Tel: 022-25666524 / 25669069 / 25161524 Email: [info@peacepower.in](mailto:info@peacepower.in) Website: [www.peacepower.in](http://www.peacepower.in)

## Guaranteed Technical Particulars for M/s. Peace Power Single Phase Link Boxes With SVL

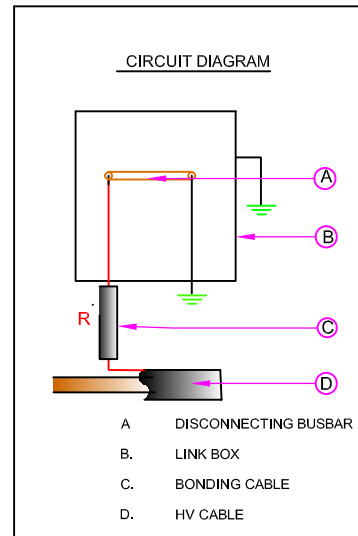
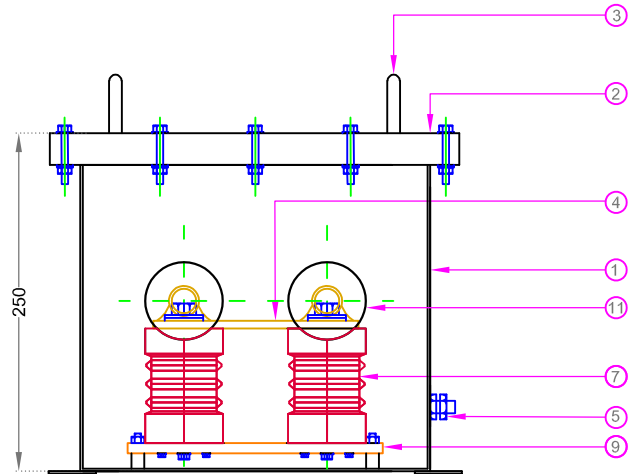
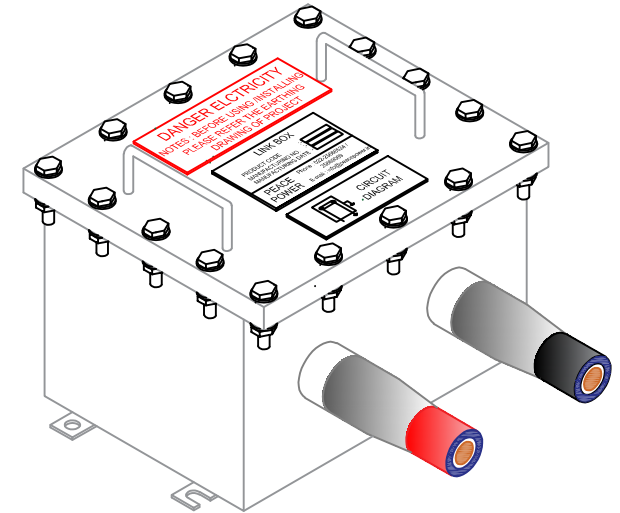
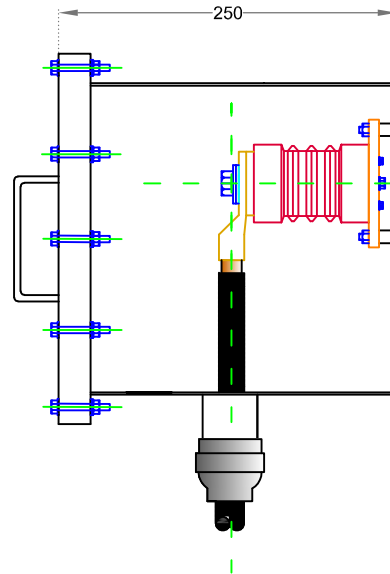
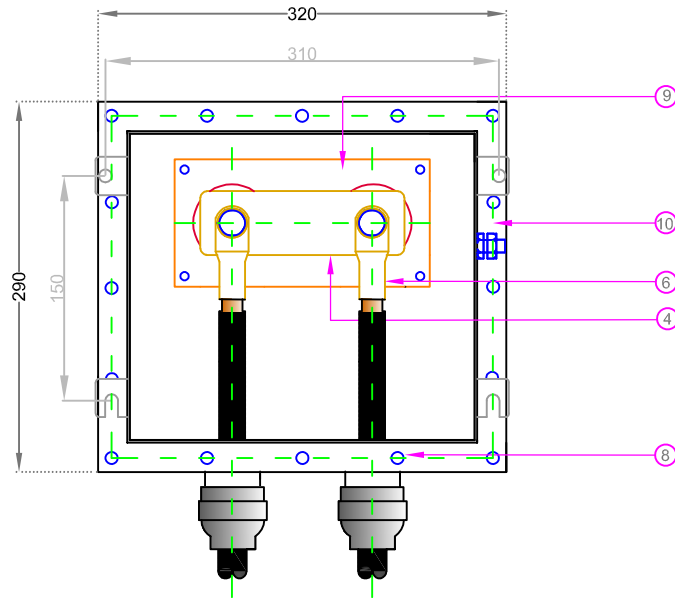
**Document No.:-** PP/SP-01/68/1001/GTP

S No	Particulars	Single Phase Link Box With SVL
1.	Material Grade	
A	Sheet	SS-304
B	Earthing Bus Bar	Electrolytic Cu
2.	Dimension (mm) L*W*H	450*290*250
3.	Thickness of Sheet	2 mm
4.	Cross Section of Link Bus Bar (mm)	50*6
5.	SCC Rating	40 kA for 1 Sec
6.	IP Class	68
7.	Weight (kg)	Approx. 15

S No.	Particulars	SVL (CCPU) As Per IEC 60099-4
1.	Name of Manufacturer	Raychem/Peace Power
2.	Size and Shape	Refer Data Sheet
3.	Rated Voltage	6 kV
4.	Details of characteristics	Refer Data Sheet for details
5.	Nominal discharge current	10 KA
6.	Power frequency withstand voltage	30 kV
7.	Impulse Withstand Voltage	75 kV







SR NO.	LIST OF MAIN PARTS	MATERIAL
1.	LINK BOX CASING	2 MM THK, S.S 304
2.	LINK BOX LID	2 MM THK, S.S 304
3.	HANDLE	S.S 304
4.	LINK PLATES	TINNED Cu
5.	BOX EARTHING BOLT	S.S 304
6.	CABLE LUGS	TINNED Cu
7.	INSULATOR	EPOXY RESIN
8.	BOLTS & NUTS	S.S 304
9.	INSULATING BASE PLATE	FRP
10.	RUBBER GASKET	NEOPRENE
11.	CABLE ENTRY	S.S 304

SR NO.	TYPE TESTS
1.	SHORT CIRCUIT TEST
2.	IP 68 TEST
3.	25 KV DC - HV TEST
4.	CONTACT RESISTANCE TEST



**NOTE:-**

- ALL DIMENSIONS ARE IN MM.
- SURFACE TREATMENT OF COPPER LINKS: SILVER/ TIN PLATED
- DIMENSIONAL TOLERANCE :  $\pm 5\%$
- ALL STAINLESS STEEL MATERIALS SHALL CONFIRM TO AISI: 304.
- ALL S.S FASTENERS SHALL CONFIRM TO IS: 1367-2002
- ALL COPPER LINKS SHALL CONFIRM TO IS: 1897-1983 & IS:191.
- SURFACE TREATMENT OF COPPER LINKS: TIN PLATED
- LINK BOX SURFACE IS POWDER COATED CONFIRM TO RAL 7032 COLOR
- LINK BOX DEGREES OF PROTECTION SHALL CONFORM TO IP-68 AS PER IS: 13947 / IEC 60529



214, Anandraj Industrial Estate, Off LBS road, Sonapur lane, Bhandup (west)  
Mumbai-400078.  
Tel: 022-25666524 / 25161524  
Email: info@peacepower.in

**DRAWING TITLE :**

**SINGLE PHASE LINK BOX WITHOUT SVL**

PRODUCT CODE: PP/SP-02		DRAWING NO: PP/SP-02/68/1003	
DESIGNED BY:	SD	DATE OF ISSUE:	22.11.2018
DRAWN BY:	VN	DATE OF REV:	
APPROVED BY:	AD	SHEET: 01 of 02	SCALE: N.T.S. REV: 01





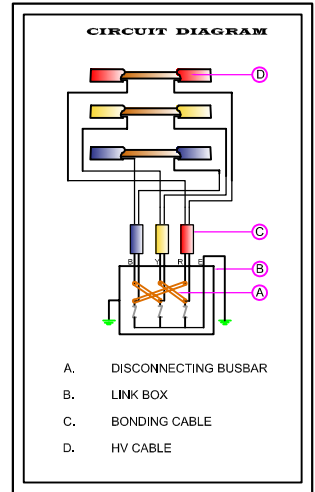
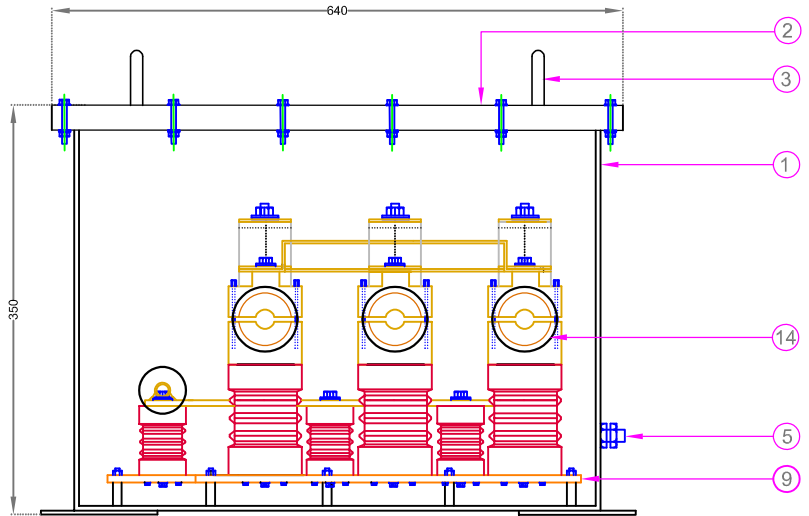
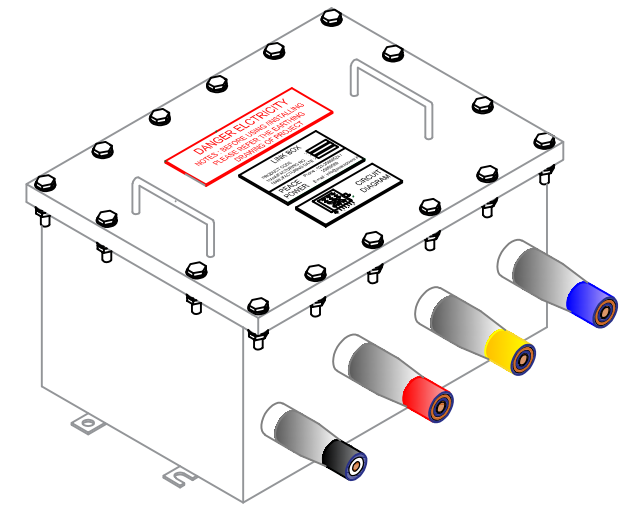
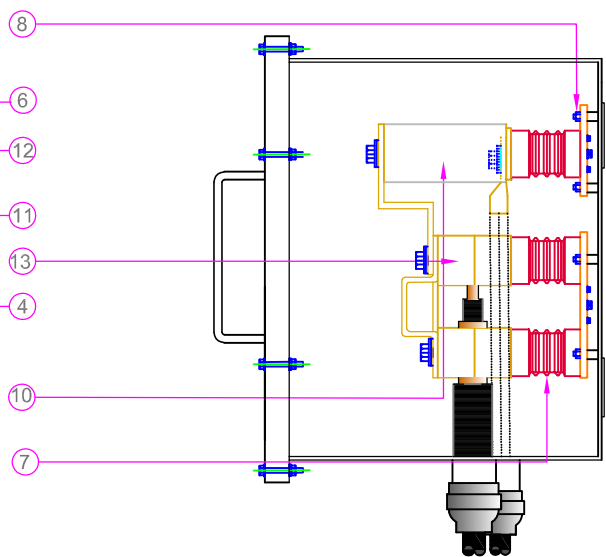
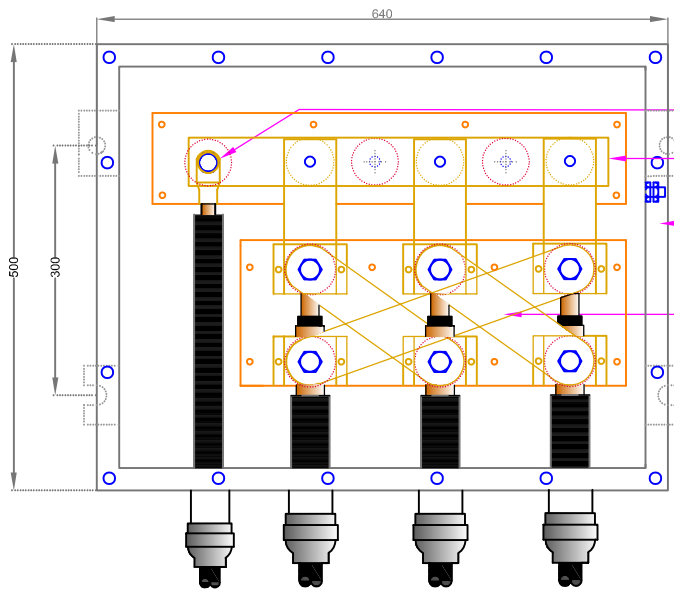
214, AnandRaj Ind. Estate, Bhandup-Sonapur Lane, Off L.B.S. Marg, Bhandup (W), Mumbai - 400 078  
Tel: 022-25666524 / 25669069 / 25161524 Email: [info@peacepower.in](mailto:info@peacepower.in) Website: [www.peacepower.in](http://www.peacepower.in)

## Guaranteed Technical Particulars for M/s. Peace Power Single Phase Link Box Without SVL

Document No.: - PP/SP-02/68/1003/GTP

S No	Particulars	Single Phase Link Box Without SVL
1.	Material Grade	
A	Sheet	SS-304
B	Earthing Bus Bar	Electrolytic Cu
2.	Dimension (mm) L*W*H	320*290*250
3.	Thickness of Sheet	2 mm
4.	Cross Section of Link Bus Bar (mm)	50*6
5.	SCC Rating	40 kA for 1 sec
6.	IP Class	68
7.	Weight (kg)	Approx. 13





SR NO.	LIST OF MAIN PARTS	MATERIAL
1.	LINK BOX CASING	4 MM THK, S.S 304
2.	LINK BOX LID	4 MM THK, S.S 304
3.	HANDLE	S.S 304
4.	LINK PLATES	TINNED Cu
5.	BOX EARTHING BOLT	S.S 304
6.	CABLE LUGS	TINNED Cu
7.	INSULATOR	EPOXY RESIN, 6.6 KV
8.	BOLTS & NUTS	S.S 304
9.	INSULATING BASE PLATE	FRP
10.	SHEATH VOLTAGE LIMITER	ZnO
11.	GASKET	NEOPRENE RUBBER
12.	EARTHING LINK	TINNED Cu
13.	CABLE MOUNTING CLAMP	TINNED Cu
14.	CABLE ENTRY	S.S 304

SR NO.	TYPE TESTS
1.	25 kV HI-POT TEST
2.	IP68 TEST
3.	SHORT CIRCUIT TEST
4.	CONTACT RESISTANCE TEST

**NOTE:-**  
 1. ALL DIMENSIONS ARE IN MM.  
 2. SURFACE TREATMENT OF COPPER LINKS: SILVER/ TIN PLATED  
 3. DIMENSIONAL TOLERANCE :  $\pm 5\%$   
 4. ALL STAINLESS STEEL MATERIALS SHALL CONFIRM TO AISI: 304.  
 5. ALL S.S FASTENERS SHALL CONFIRM TO IS: 1367-2002  
 6. ALL COPPER LINKS SHALL CONFIRM TO IS: 1897-1983 & IS:191.  
 SURFACE TREATMENT OF COPPER LINKS: TIN PLATED  
 7. LINK BOX SURFACE IS POWDER COATED CONFIRM TO RAL 7032 COLOR  
 8. LINK BOX DEGREES OF PROTECTION SHALL CONFORM TO IP-68 AS PER IS:13947 & IEC:60529



214, Anandraj Industrial Estate, Off LBS road, Sonapur lane, Bhandup (west) Mumbai-400078.  
 Tel: 022-25666524 / 25161524  
 Email: info@peacepower.in

DRAWING TITLE :

**THREE PHASE CROSS BONDING LINK BOX WITH SVL**

PRODUCT CODE: PP/TPCB-01		DRAWING NO: PP/TPCB-01/68/1019	
DESIGNED BY:	VN	DATE OF ISSUE:	29/11/2018
DRAWN BY:	TC	DATE OF REV:	
APPROVED BY:	AD	SHEET: 01 of 02	SCALE: N.T.S. REV: 01



214, AnandRaj Ind. Estate, Bhandup-Sonapur Lane, Off L.B.S. Marg, Bhandup (W), Mumbai - 400 078  
Tel: 022-25666524 / 25669069 / 25161524 Email: [info@peacepower.in](mailto:info@peacepower.in) Website: [www.peacepower.in](http://www.peacepower.in)

## Guaranteed Technical Particulars for M/s. Peace Power Three Phase Cross Bonding Link Box (3-1 way) With SVL

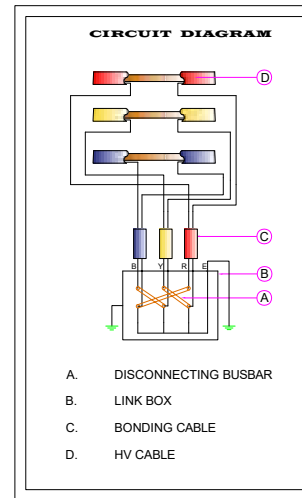
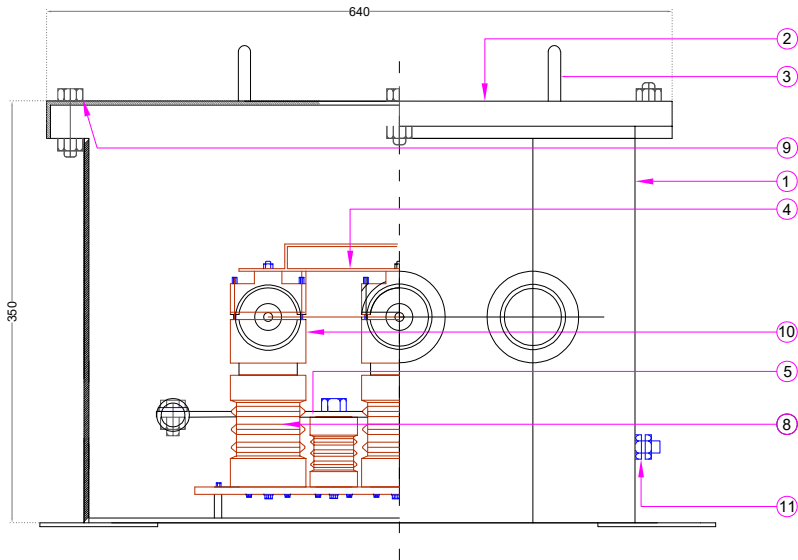
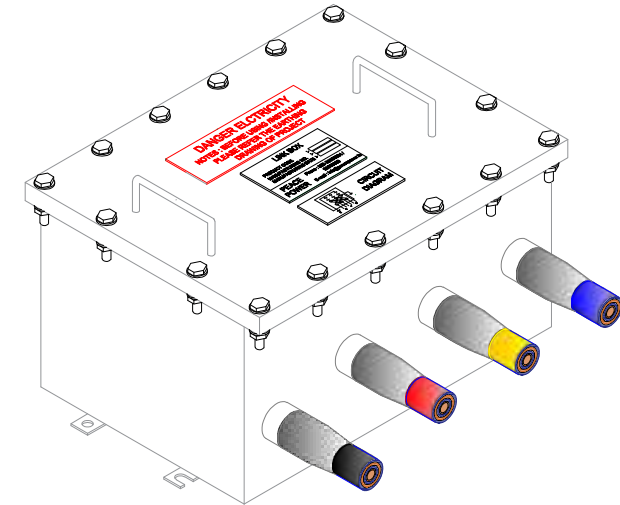
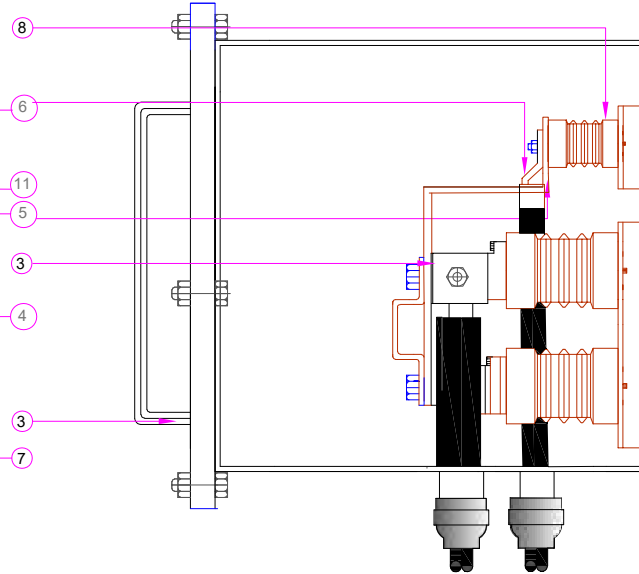
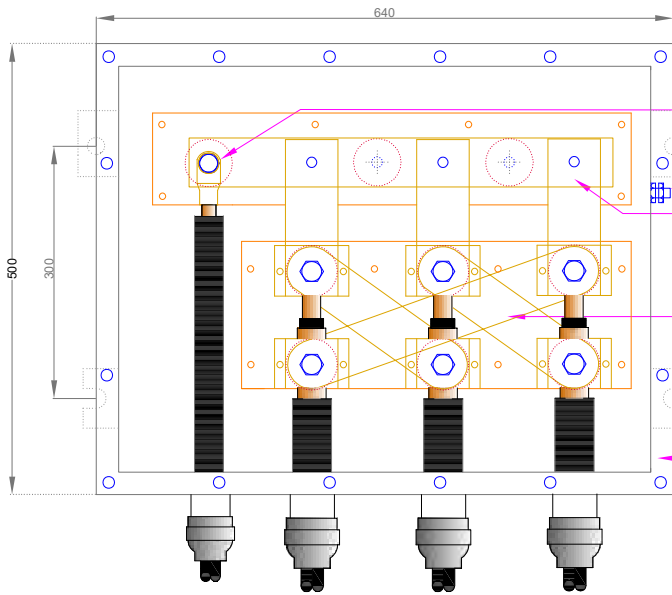
Document No.:- PP/TPCB-01/68/1019/GTP

S No	Particulars	Three Phase Cross Bonding Link Box With SVL
1.	Material Grade	
A	Sheet	SS-304
B	Earthing Bus Bar	Electrolytic Cu
2.	Dimension (mm) L*W*H	640*500*350
3.	Thickness of Sheet	4 mm
4.	Cross Section of Earth Bus Bar (mm)	50*6
5.	Cross Section of Link Bus Bar (mm)	50*6
6.	SCC Rating	40 kA for 1 sec
7.	IP Class	68
8.	Weight (kg)	Approx. 69

S No.	Particulars	SVL (CCPU) As Per IEC 60099-4
1.	Name of Manufacturer	Raychem/Peace Power
2.	Size and Shape	Refer Data Sheet
3.	Rated Voltage	6 kV
4.	Details of characteristics	Refer Data Sheet for details
5.	Nominal discharge current	10 KA
6.	Power frequency withstand voltage	30 kV
7.	Impulse Withstand Voltage	75 kV



NOTE: ALL DESIGN LAYOUTS & DRAWINGS REMAIN THE PROPERTY OF PEACE POWER & NO REPRODUCTION IN WHOLE OR PART IS ALLOWED WITHOUT WRITTEN CONSENT.



SR NO.	LIST OF MAIN PARTS	MATERIAL
1.	LINK BOX CASING	4 MM THK, S.S 304
2.	LINK BOX LID	4 MM THK, S.S 304
3.	HANDLE	S.S 304
4.	LINK PLATES	TINNED Cu
5.	EARTHING LINK	TINNED Cu
6.	COPPER LUGS	Cu
7.	GASKET	NEOPRENE RUBBER
8.	INSULATOR	EPOXY RESIN
9.	BOLTS & NUTS	S.S. 304
10.	CABLE MOUNTING CLAMP	TINNED Cu
11.	BOX EARTHING BOLT	S.S 304

SR NO.	TYPE TESTS
1.	25 KV HI-POT TEST
2.	IP68 TEST
3.	SHORT CIRCUIT TEST
4.	CONTACT RESISTANCE TEST

NOTE:-  
1. ALL DIMENSIONS ARE IN MM.  
2. SURFACE TREATMENT OF COPPER LINKS: SILVER/ TIN PLATED  
3. DIMENSIONAL TOLERANCE :  $\pm 5\%$   
4. ALL STAINLESS STEEL MATERIALS SHALL CONFIRM TO AISI: 304.  
5. ALL S.S FASTENERS SHALL CONFIRM TO IS: 1367-2002  
6. ALL COPPER LINKS SHALL CONFIRM TO IS: 1897-1983 & IS:191.  
SURFACE TREATMENT OF COPPER LINKS: TIN PLATED  
7. LINK BOX SURFACE IS POWDER COATED CONFIRM TO IS: 6005 IN RAL 7032 COLOR  
8. LINK BOX DEGREES OF PROTECTION SHALL CONFORM TO IP-68 AS PER IS: 13947



214, Anandraj Industrial Estate, Off LBS road, Sonapur lane, Bhandup (west) Mumbai-400078.  
Tel: 022-25666524 / 25161524  
Email: info@peacepower.in

DRAWING TITLE :

**THREE PHASE CROSS BONDING LINK BOX WITHOUT SVL**

PRODUCT CODE: PP/PCB-02

DRAWING NO: PP/PCB-02/68/1023

DESIGNED BY:

VN

DATE OF ISSUE:

29/01/2025

DRAWN BY:

HK

DATE OF REV:

APPROVED BY:

AD

SHEET: 01 of 02

SCALE: N.T.S.

REV: 00



214, AnandRaj Ind. Estate, Bhandup-Sonapur Lane, Off L.B.S. Marg, Bhandup (W), Mumbai - 400 078  
Tel: 022-25666524 / 25669069 / 25161524 Email: [info@peacepower.in](mailto:info@peacepower.in) Website: [www.peacepower.in](http://www.peacepower.in)

## Guaranteed Technical Particulars for M/s. Peace Power Three Phase Cross Bonding Link Box (3-1 way) Without SVL

Document No.: PP/TPCB-02/68/1023/GTP

S No	Particulars	Three Phase Cross Bonding Link Box Without SVL
1.	Material Grade	
A	Sheet	SS-304
B	Earthing Bus Bar	Electrolytic Cu
2.	Dimension (mm) L*W*H	640*500*350
3.	Thickness of Sheet	4 mm
4.	Cross Section of Earth Bus Bar (mm)	50*6
5.	Cross Section of Link Bus Bar (mm)	50*6
6.	SCC Rating	40 kA for 1 sec
7.	IP Class	68
8.	Weight (kg)	Approx. 66





GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

## Requirement of 110kV cable laying methodology/ method statement

**Kuwade Harshad** <harshad.kuwade@tatapower.com>

Thu, Jan 30, 2025 at 2:20 PM

To: GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

Cc: Divyendra Kumar Singh <dk Singh@aicagc.com>, Balaji G <balajig@aicagc.com>, Ankit N Agrawal <anagrawal@aicagc.com>, Ajay Konda <akonda@aicagc.com>, Atul Dubey <rvnl atulang@gmail.com>, Vetcha S K <subhashvetcha@tatapower.com>, Deodhar M V <mayureshdeodhar@tatapower.com>, Gawade Ravindra <ravindra.gawade@tatapower.com>, Tawre Ganesh <gstawre@tatapower.com>, Pophale A H <apophale@tatapower.com>, Patil Swapnil <swapnil.patil@tatapower.com>, Pawar Kishor <kbpawar@tatapower.com>, Dey Biswajit <biswajit.dey@tatapower.com>, Jadhav Avinash <avinash.jadhav@tatapower.com>

Dear Sir,

Please find the attached approved vendor details.

1. Link boxes.

Peace Power

2. Sheath Voltage Limiters. : will be provided inside link boxes.

3. Sheath Bonding cable.

Universal Cables Ltd.
Nicco Corporation Ltd.
KEC International
Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
KEI Cables
APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries

Havells
Torrent Cables

#### 4. Co-axial cables.

Universal Cables Ltd.
Nicco Corporation Ltd.
KEC International
Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
KEI Cables
APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries
Havells
Torrent Cables

#### 5. Cable cleats.

Peace Power

#### 6. Cable Tiles.

As per approved drawing : Patel Precast

Shreeji Precast

Rashmi Engineering

#### 7. Terminal connectors for outdoor termination.

Will be provided by termination vendor

8. FO cable joint box

9. FO termination panel.

10. FO termination kit.

Fibre Optic Cable Accessories : Dipali Automation / Microscan / Ninesec / Orient

We will provide the list of pending documents in a day or two due to a technical issue with the wrench system.

[Quoted text hidden]

[Quoted text hidden]



To,  
The Project Director,  
Consortium of Ayesa-ITALFER-CEG-Ayesa India (AICA),  
MMRDA Office Building,  
Building No. B1,3<sup>rd</sup> Floor,  
Opp. to New Wadala Truck Terminal Police Station,  
Wadala East,  
Mumbai 400 037.

Name : K Sudharsan  
Department : RC-IN SMO RI-EL PE 5  
Mobile : +91 9840885066  
E-mail : sudharsan.k@siemens.com  
Our Ref : SIEMENS-MMRDA-2B-CA-40-2025-261  
Dated : 25<sup>th</sup> Feb 2025

**Contract: CA No. MMRDA/2B/MMRP/CA-40: Design, Manufacture, Supply, Installation, Testing and Commissioning of 2 nos. 110kV Receiving Substation Including 110kV, 33kV & 25kV Cabling Work, Complete 25kV Overhead Catenary System along with Switching Station, 33kV Auxiliary Power Distribution System including 33/0.415 kV Auxiliary Sub-Station (ASS) and Complete SCADA System for Main Line & Depot of Mumbai Metro Line 2B of MMRDA.**

**Ref :** (1) SIEMENS-MMRDA-2B-CA-40-2025-244, dated 22 Feb 2025

**Subject:** Submission of GAD & GTP of Coaxial bonding cable - M/s Universal cables.

Dear Sir,

With reference to the above, we hereby superseding our earlier submission vide ref (1) and find the attached revised document as below.

Sr.No.	Subject	Rev	Purpose
1	Definitive Design GAD & GTP of Coaxial bonding cable p- M/s Universal cables. (Doc No. CA40-2B-CSR-PSY-DEG-GTP-0073)	01	For review and approval

We kindly request you to review and accord your approval for the above document.

Thanking you and assuring you our best services always, we remain.

Yours Sincerely,

On behalf of Consortium of Siemens Ltd. & Rail Vikas Nigam



K Sudharsan  
Contractor's Representative (CA – 40)

Encl : As above  
Response to : As above, ref – (1)  
Resp. Requested : Yes

Cc: Director System, PIU, MMRDA

THE TATA POWER COMPANY LIMITED PROJECT ENGINEERING DEPARTMENT	
APPROVAL STATUS: 01/Mar/2025	
I	Approved
II	Approved subject to incorporation of comments as marked. Resubmit for formal approval.
III	Not Approved. Incorporate comments as marked. Resubmit for review / approval.
IV	Not Approved. Retained for information. Resubmit after review & incorporation of comments.
<div style="display: flex; justify-content: space-between;"> <div>  Checked By </div> <div>  Approved by </div> </div>	




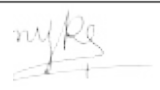
## MUMBAI METRO LINE-2B OF MMRDA

### GAD & GTP of Coaxial Bonding cable make M/s Universal cables

REV-01

DOCUMENT NO.:

CA40-2B-CSR-PSY-DEG-GTP-0073

	Name	Designation	Date	Signature
Approved by	K .Sudharsan	Project Manager	25.02.2025	
Reviewed by	S.K. Srivastava	DPM/RVNL	24.02.2025	
Checked by	Nagboshan Rao	Design Engineer	24.02.2025	
Prepared by	Yeswanth Kumar Reddy. N	Execution Engineer (OHE)	24.02.2025	

APPROVALS					
GENERAL CONSULTANT			MMRDA		
Name	Designation	Signature	Name	Designation	Signature
Vijay Yadav	DPD (Systems)		Laxmiprasad Kharat	Chief Engineer	
Ankit N Aggarwal	Chief Traction Expert		Mohit Naagar	Executive Engineer	
D. Aldus Huxley	Sr. Quality Assurance Expert		Dinesh Pawar	Deputy Engineer (Elect.)	
G. Balaji	Senior T&C Engineer				
Rajesh Sanodia	Senior T&C Engineer				

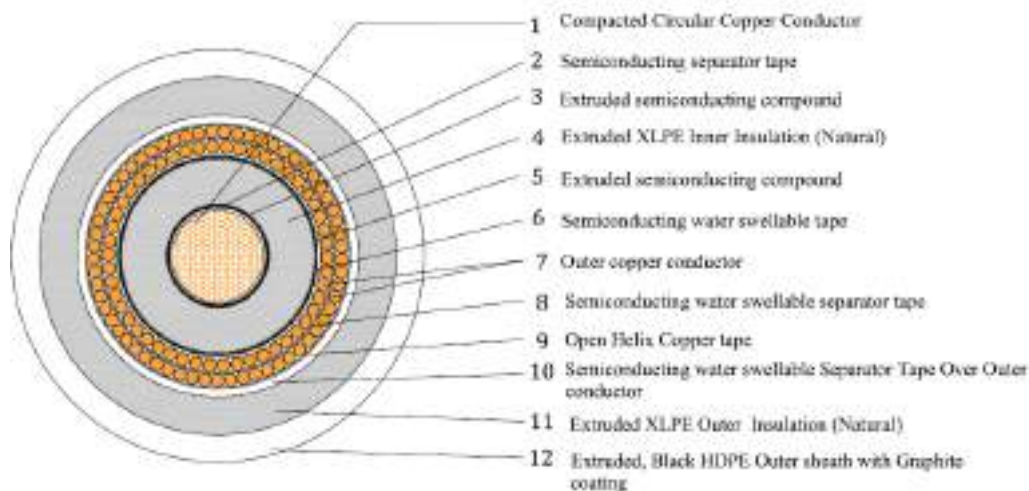
MUMBAI METRO LINE-2B OF MMRDA	24.02.2025	GAD & GTP of Coaxial cable make M/s Universal cables
Copyright © Siemens Limited 2025. All Rights Reserved.		Document No. CA40-2B-CSR-PSY-DEG-GTP-0073 Rev-01

Revision Log				
Rev	Author	Date	Reference	Changes/Subject of revision
01	Yeswanth Kumar Reddy. N	20.02.2025	Part II-Requirements-Section-6-Employers Requirements, Chapter-4	First Submission



MUMBAI METRO LINE-2B OF MMRDA	24.02.2025	GAD & GTP of Coaxial cable make M/s Universal cables
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Universal Cables Limited, Satna  
**Technical particulars for 300 Sq.mm Coaxial sheath bonding Cable.**



A	Name of Manufacturer		M/S Universal Cables Ltd, Satna (M.P.)
B	Reference Standard		Generally to IS 7098 -2/2011
C	Voltage Grade		6.35/11 kV
1	<b>Conductor</b>		
a	Material		Annealed Plain Copper to IS 8130
b	Nom. Cross sectional Area	Sqmm	300
c	Flexibility Class		Class 2, Stranded Compacted Circular
d	Max DC Res at 20 °C	Ohm/km	0.0601
e	Conductor diameter (approx.)	mm	19.9
2	Separator Over conductor		Semi-conducting Tape [ Thickness 0.1 mm (Nom.) before application ]
3	<b>Conductor screen</b>		
a	Material		Extruded Semiconducting Compound
b	Min.Thickness	mm	0.3
4	<b>Inner Insulation</b>		
a	Material		Extruded XLPE to IS 7098 Part-2, Natural
b	Nom.Thickness	mm	4.6
5	<b>Insulation screen</b>		
a	Material		Extruded Semiconducting Compound
b	Min.Thickness	mm	0.3
6	Separator Tape		Semi-conducting water swellable Tape [ Thickness 0.3 mm (Nom.) before application ]
7	<b>Outer conductor</b>		
a	Material		Double layer of annealed plain copper wires followed by Open Helix copper tape (Nom. Thickness 0.1 mm). Semi- conducting water swellable Tape as a separator to be provided in between the layers of copper wires.

Universal Cables Limited, Satna  
**Technical particulars for 300 Sq.mm Coaxial sheath bonding Cable.**

b	Nom area (total) of the conductor	sqmm	300
c	Separator Tape Over Outer conductor		Semi-conducting water swellable Tape [ Thickness 0.3 mm (Nom.) before application ]
8	<b>Outer Insulation</b>		
a	Material		Extruded XLPE to IS 7098 Part-2, Natural
b	Nom.Thickness	mm	3.5
9	<b>Outer Sheath</b>		
a	Material		Extruded, Black HDPE as per IS 7098 Pt. 2/11 (Type ST-7 as per IEC 60502-2)
b	Thickness	mm	Nom. 2.6
c	Conducting layer over outer sheath		Graphite coating
10	Approx Overall Diameter of Cable	mm	53.5 $\pm$ 2.0 mm
11	Test Voltage		Inner insulation - 20 kV ac for 5 minutes Outer Insulation - 25 kV dc for 1 minute.
12	Marking on Cable		UNISTAR UNIVERSAL CABLES LTD SATNA , “ <b>Tata Power</b> ”, 6.35/11 kV , 300 SQMM XLPE COAXIAL SHEATH BONDING CABLE (Year of Mfg)
13	Short circuit rating of conductor	kA	42.9 kA for 1 sec





GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

## Requirement of 110kV cable laying methodology/ method statement

**Kuwade Harshad** <harshad.kuwade@tatapower.com>

Thu, Jan 30, 2025 at 2:20 PM

To: GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

Cc: Divyendra Kumar Singh <dk Singh@aicagc.com>, Balaji G <balajig@aicagc.com>, Ankit N Agrawal <anagrawal@aicagc.com>, Ajay Konda <akonda@aicagc.com>, Atul Dubey <rvnl atulang@gmail.com>, Vetcha S K <subhashvetcha@tatapower.com>, Deodhar M V <mayureshdeodhar@tatapower.com>, Gawade Ravindra <ravindra.gawade@tatapower.com>, Tawre Ganesh <gstawre@tatapower.com>, Pophale A H <apophale@tatapower.com>, Patil Swapnil <swapnil.patil@tatapower.com>, Pawar Kishor <kbpawar@tatapower.com>, Dey Biswajit <biswajit.dey@tatapower.com>, Jadhav Avinash <avinash.jadhav@tatapower.com>

Dear Sir,

Please find the attached approved vendor details.

1. Link boxes.

Peace Power

2. Sheath Voltage Limiters. : will be provided inside link boxes.

3. Sheath Bonding cable.

Universal Cables Ltd.
Nicco Corporation Ltd.
KEC International
Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
KEI Cables
APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries

Havells
Torrent Cables

#### 4. Co-axial cables.

Universal Cables Ltd.
Nicco Corporation Ltd.
KEC International
Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
KEI Cables
APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries
Havells
Torrent Cables

#### 5. Cable cleats.

Peace Power

#### 6. Cable Tiles.

As per approved drawing : Patel Precast

Shreeji Precast

Rashmi Engineering

#### 7. Terminal connectors for outdoor termination.



Will be provided by termination vendor

8. FO cable joint box

9. FO termination panel.

10. FO termination kit.

Fibre Optic Cable Accessories : Dipali Automation / Microscan / Ninesec / Orient

We will provide the list of pending documents in a day or two due to a technical issue with the wrench system.

[Quoted text hidden]

[Quoted text hidden]

To,  
The Project Director,  
Consortium of Ayasa-ITALFER-CEG-Ayasa India (AICA),  
MMRDA Office Building,  
Building No. B1,3<sup>rd</sup> Floor,  
Opp. to New Wadala Truck Terminal Police Station,  
Wadala East,  
Mumbai 400 037.

Name : K Sudharsan  
Department : RC-IN SMO RI-EL PE 5  
Mobile : +91 9840885066  
E-mail : sudharsan.k@siemens.com  
Our Ref : SIEMENS-MMRDA-2B-CA-40-2025-262  
Dated : 25<sup>th</sup> Feb 2025

**Contract: CA No. MMRDA/2B/MMRP/CA-40: Design, Manufacture, Supply, Installation, Testing and Commissioning of 2 nos. 110kV Receiving Substation Including 110kV, 33kV & 25kV Cabling Work, Complete 25kV Overhead Catenary System along with Switching Station, 33kV Auxiliary Power Distribution System including 33/0.415 kV Auxiliary Sub-Station (ASS) and Complete SCADA System for Main Line & Depot of Mumbai Metro Line 2B of MMRDA.**

**Ref:** LOA: Metro-PIU/System/ML-2B/CA-40/2023/371, dated 09 May 2023.

**Subject:** Submission of GAD & GTP of Sheath bonding cable - M/s Universal cables.

Dear Sir,

With reference to the above, please find the below details of the document attached with the letter.

Sr.No.	Subject	Rev	Purpose
1	Definitive Design GAD & GTP of Sheath bonding cable - M/s Universal cables. (Doc No. CA40-2B-CSR-PSY-DEG-GTP-0075)	01	For review and approval

We kindly request you to review and accord your approval for the above document.

Thanking you and assuring you our best services always, we remain.

Yours Sincerely,

On behalf of Consortium of Siemens Ltd. & Rail Vikas Nigam L

  
K Sudharsan  
Contractor's Representative (CA – 40)

Encl : As above  
Response to : NA  
Resp. Requested : Yes

Cc: Director System, PIU, MMRDA

THE TATA POWER COMPANY LIMITED PROJECT ENGINEERING DEPARTMENT	
APPROVAL STATUS: 01/Mar/2025	
I	Approved
II	Approved subject to incorporation of comments as marked. Resubmit for formal approval.
III	Not Approved. Incorporate comments as marked. Resubmit for review / approval.
IV	(i) - Retained for information (ii) - Resubmit after review & incorporation of comments.
<div style="display: flex; justify-content: space-between;"> <div>                       Checked By                 </div> <div>                       Approved by                 </div> </div>	


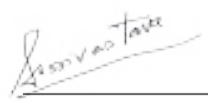


## MUMBAI METRO LINE-2B OF MMRDA

### GAD & GTP of Sheath Bonding cable make M/s Universal cables

REV-01

DOCUMENT NO.:

CA40-2B-CSR-PSY-DEG-GTP-0075

	Name	Designation	Date	Signature
Approved by	K .Sudharsan	Project Manager	25.02.2025	
Reviewed by	S.K. Srivastava	DPM/RVNL	24.02.2025	
Checked by	Nagboshan Rao	Design Engineer	24.02.2025	
Prepared by	Yeswanth Kumar Reddy. N	Execution Engineer (OHE)	24.02.2025	

MUMBAI METRO LINE-2B OF MMRDA	24.02.2025	GAD & GTP of Sheath Bonding cable make M/s Universal cables
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APPROVALS					
GENERAL CONSULTANT			MMRDA		
Name	Designation	Signature	Name	Designation	Signature
Vijay Yadav	DPD (Systems)		Laxmiprasad Kharat	Chief Engineer	
Ankit N Aggarwal	Chief Traction Expert		Mohit Naagar	Executive Engineer	
D. Aldus Huxley	Sr. Quality Assurance Expert		Dinesh Pawar	Deputy Engineer (Elect.)	
G. Balaji	Senior T&C Engineer				
Rajesh Sanodia	Senior T&C Engineer				



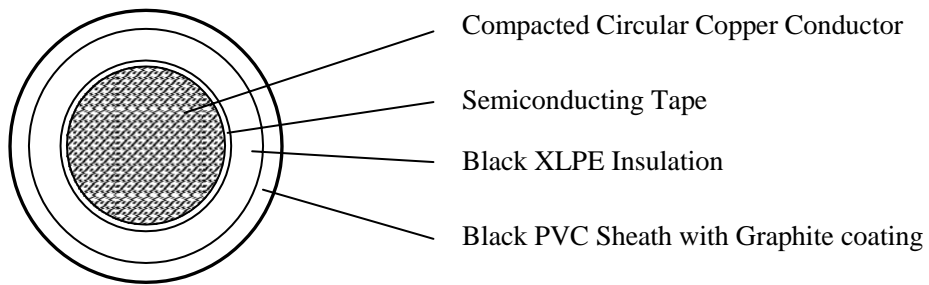
MUMBAI METRO LINE-2B OF MMRDA	24.02.2025	GAD & GTP of Sheath Bonding cable make M/s Universal cables
Copyright © Siemens Limited 2025. All Rights Reserved.		Document No. CA40-2B-CSR-PSY-DEG-GTP-0075 Rev-01

Revision Log				
Rev	Author	Date	Reference	Changes/Subject of revision
01	Yeswanth Kumar Reddy. N	20.02.2025	Part II-Requirements-Section-6-Employers Requirements, Chapter-4	First Submission



MUMBAI METRO LINE-2B OF MMRDA	24.02.2025	GAD & GTP of Sheath Bonding cable make M/s Universal cables
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Universal Cables Limited, Satna  
**Technical particulars for 300 Sqmm Unarmoured Sheath Bonding Cable**



1	Name of Manufacturer		M/S Universal Cables Ltd, Satna (M.P.)
2	Reference Standard		Generally IS 7098-2/2011
3	<b>Voltage grade</b>		6.35/11 kV
3	<b>Conductor</b>		
a	Material		Annealed Plain Copper to IS 8130
b	Nom. Cross sectional Area		300 Sqmm
c	Flexibility Class		Class 2, Stranded Compacted Circular
d	Max DC Res at 20 °C	Ohm/km	0.0601
e	Separator Over conductor		Semi-conducting Tape [ Thickness 0.1 mm (Nom.) before application ]
4	<b>Insulation</b>		
a	Material		Extruded XLPE to IS 7098-2, Natural
b	Nom.Thickness	mm	3.6
5	<b>Outer Sheath</b>		
a	Material		Extruded, Black PVC type ST2 to IS 5831
b	Nom.Thickness	mm	4.0
c	Conducting layer over outer sheath		Graphite coating
6	Approx Overall Diameter of Cable	mm	36.0 ±2 mm
7	Test Voltage		25 kV DC for 1 minute.
8	Embossing on Cable		UNISTAR UNIVERSAL CABLES LTD SATNA, <b>“Tata Power”</b> , 6.35/11 kV 300 SQMM XLPE SHEATH BONDING CABLE (Year of Mfg)
9	Short circuit rating of conductor		42.9 kA for 1 sec





GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

## Requirement of 110kV cable laying methodology/ method statement

**Kuwade Harshad** <harshad.kuwade@tatapower.com>

Thu, Jan 30, 2025 at 2:20 PM

To: GM RVNL CA40 &lt;gm.metro.mumbai.rvnl@gmail.com&gt;

Cc: Divyendra Kumar Singh <dk Singh@aicagc.com>, Balaji G <balajig@aicagc.com>, Ankit N Agrawal <anagrawal@aicagc.com>, Ajay Konda <akonda@aicagc.com>, Atul Dubey <rvnl atulang@gmail.com>, Vetcha S K <subhashvetcha@tatapower.com>, Deodhar M V <mayureshdeodhar@tatapower.com>, Gawade Ravindra <ravindra.gawade@tatapower.com>, Tawre Ganesh <gstawre@tatapower.com>, Pophale A H <apophale@tatapower.com>, Patil Swapnil <swapnil.patil@tatapower.com>, Pawar Kishor <kbpawar@tatapower.com>, Dey Biswajit <biswajit.dey@tatapower.com>, Jadhav Avinash <avinash.jadhav@tatapower.com>

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Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
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APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries

Havells
Torrent Cables

#### 4. Co-axial cables.

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Nicco Corporation Ltd.
KEC International
Cable Corporation of India Ltd.
Sterlite
Gemscab Industries
KEI Cables
APAR Industries
Gupta Cables.
Dynamic cables
Polycab Industries
Havells
Torrent Cables

#### 5. Cable cleats.

Peace Power

#### 6. Cable Tiles.

As per approved drawing : Patel Precast

Shreeji Precast

Rashmi Engineering

#### 7. Terminal connectors for outdoor termination.



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8. FO cable joint box

9. FO termination panel.

10. FO termination kit.

Fibre Optic Cable Accessories : Dipali Automation / Microscan / Ninesec / Orient

We will provide the list of pending documents in a day or two due to a technical issue with the wrench system.

[Quoted text hidden]

[Quoted text hidden]