



Detailed Specification

Enquiry:MM/172/G30866

Contact Details

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Please submit your offer for supply of the following items as per the instructions, technical specifications and other terms and conditions specified herein/ attached.

Note:

1. The delivery period mentioned in the BoQ is our indicative requirement. You may offer your earliest delivery period.

Please refer our above referred enquiry number in all correspondence.

SL No.	Material Code	Detailed Specification/s	Quantity	Unit of Measure
1	673185400	FRP cable tray fully conforming to the attached Technical Procurement Specification (CD-FRP-TRAY-01).	4	Set

SPECIAL TERMS AND CONDITIONS

1. Offer shall be strictly as per provided TPS - **CD-FRP-TRAY-01**

2. The OEM/ supplier shall provide warrantee for the supplied items for a period of One Year from the date of delivery.

3. Vendor shall submit duly filled and signed Technical Particulars, Compliance Statement and Type Test report at the time of offer.

4. Vendor shall submit drawing and BOM of cable tray after commitment for getting approval for manufacturing.

5. Vendor shall submit routine test reports for verification for issuing dispatch clearance.

6. Vendor shall submit installation and maintenance manuals/catalogues along with the supply.

TECHNICAL PROCUREMENT SPECIFICATION

TPS NO : CD-FRP-TRAY-01

ORIGINATING DEPT : ELECTRICAL

CLIENT : M/s. FACT-CD

LOCATION : AMBALAMEDU, KOCHI

PURCHASER : M/s. FACT-CD

ITEM : FRP CABLE TRAY

R1	07.10.2024	REV 1	JJM	SR	BKN
R0	23.09.2024	ORIGINAL ISSUE	JJM	SR	BKN
REV NO.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

ATTACHMENTS	FRP CABLE TRAY	CD-FRP-TRAY-01-ATT	
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ENGINEERING SPECIFICATION	FRP CABLE TRAY	CD-FRP-TRAY-01-ES	
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1.0.0 INTRODUCTION

- 1.1.0 FACT-CD receives electrical power from KSEB Brahmapuram substation at 110kV voltage level and it is being stepped down to 11kV using 3 numbers of power transformers in thermal plant. Two numbers of 11kV feeders, each having 4 runs of 3x400Sq.mm power cable is being used to transfer electrical power from Thermal plant to 11kV switchboard in Central substation, from there it is further distributed to all plants and utilities in Phase-2 area.
- 1.2.0 It is planned to install new FRP cable tray with covering to protect the power cables from direct sunlight and corrosive atmosphere. The size of cable tray required is Width-450mm, Height-150mm, Thickness-6mm. Two number of 11kV, 3x400 Sq.mm cables will be laid through single cable tray unit.
- 1.3.0 Each 'SET' shall consist of 450x150x6mm FRP cable trays, couplers, bends, tees, risers, reducers, crosses, splicers, clamps, clips, flat covers, cover clamps, connectors etc. required for successful completion of the project. The length of single 'SET' of cable tray unit is 360 meter.
- 1.4.0 Two 'SET' of cable tray is required for each feeder and total 4 'SET' required for the project.

2.0.0 SCOPE

- 2.1.0 The scope of work includes site visiting, design, engineering, manufacturing, shop testing, inspection, packing and delivery to site of FRP cable tray and accessories confirming to this specification.
- 2.2.0 The equipment offered shall be complete with all parts necessary for their effective and trouble-free operation. Such parts shall be deemed to be within the scope of the supply irrespective of whether they are specifically indicated in the commercial order or not.
- 2.3.0 The design of the cable tray shall be exclusive and specific responsibility of supplier and shall comply with current good engineering practice, the relevant codes and recommendation, the project specific requirements.

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3.0.0 STANDARDS

- 3.1.0 The FRP cable tray offered shall comply with the latest revisions of the following standards. If the equipment offered confirm to other latest amendments of standards, the tenderer shall furnish complete details by bringing out clearly the data at variance from the following standards.

IS 6746	Unsaturated Polyester Resin Systems [PCD 12: Plastics]
NEMA FG 1	Fiberglass Cable Tray Systems
ASTM-D-2863	Oxygen Index
ASTM-D-635	Flame Spread (Extent of burning)
ASTM-D-638	Tensile Strength at break
ASTM-D-790	Flexural Strength at break
ASTM-D-256	Izod Impact Strength
ASTM-D-149	Electric Strength short terms Oil
ASTM-D-570	Standard test method for water absorption of plastics.

4.0.0 SUPPLY OF FRP CABLE TRAY

- 4.1.0 The scope of work includes site visiting and designing ladder type FRP cable tray and accessories for installing on existing MS tray supports and concrete supports for laying 2 Runs of 11kV/11kV, 3Cx400 Sq.mm, Aluminium, Armoured power cables.
- 4.2.0 Vendor shall submit BOM and dimensional drawings with proposed clamping arrangement for verification and approval.
- 4.3.0 Cable tray and accessories shall be fully compliance with the requirements specified in the attached data sheet CD-FRP-TRAY-01-DS.
- 4.4.0 Only 'SS' nuts, bolts, washers and clamps shall be considered for fixing the FRP tray on existing MS tray supports and concrete supports.
- 4.5.0 FRP cable tray shall confirm to standards mentioned in clause no. 3.1.0.
- 4.6.0 The offered cable tray shall be type tested and shall have current certification/approval/listing by an approved agency or UL or FM.

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- 4.7.0 Supply of FRP cable trays, bends, tees, risers, reducers, crosses, splicers, clamps, clips, flat covers, cover clamps, connectors etc. required for successful completion of the work is in contractor's scope.
- 4.8.0 Cable tray shall be ladder type with high Corrosion resistance property and suitable for using in chemical industry.
- 4.9.0 The material used for construction shall be Antistatic and Flame Retardant Polyester-Isophthelic.
- 4.10.0 All composite materials shall be protected against degradation of material due to Ultra Violet radiation.
- 4.11.0 The side rails shall be of 'C' Section type and rung connection shall be square tube/channel type. Cable tray shall have provision for clamping cable.
- 4.12.0 Side rails and horizontal rungs shall be of same material. The rung shall be placed 300mm apart from each other. Side rail and rungs connections shall have mechanical & adhesive lock.
- 4.13.0 All straight sections shall be pre drilled for Coupler plates. All cut ends shall be resin coated.
- 4.14.0 There shall not be any sharp edges, projections, burrs inside the cable tray which will cause damage to the insulation of cables.
- 4.15.0 Cable load of 450mm wide cable tray shall be 75Kg/linear meter in addition to 80kg concentric point load placed at center of the span.
- 4.16.0 FRP flat cover sheet of minimum thickness 3mm shall be provided. FRP flat cover sheets shall have two different colours for easy identification of feeders.
- 4.17.0 Only 'SS' nuts, bolts and washers shall be used for tray coupling and fixing cover clamps.
- 4.18.0 Cover clamps shall be provides at 1.5 meter interval.
- 4.19.0 Destruction load test and deflection test on FRP cable tray shall be conducted and test reports shall be submitted.

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5.0.0 DOCUMENTATION

- 5.1.0 Vendor shall submit duly filled and signed Technical Particulars, Compliance Statement and Type Test report at the time of offer.
- 5.2.0 Vendor shall submit drawing and BOM of cable tray after commitment for getting approval for manufacturing.
- 5.3.0 Vendor shall submit routine test reports for verification for issuing dispatch clearance.
- 5.4.0 Vendor shall submit installation and maintenance manuals/catalogues along with the supply.

6.0.0 DEVIATION

- 6.1.0 If the bidder wish to deviate from the provisions of the specifications, either on account of manufacturing practice or any other reasons, he shall draw attention to the proposed point of deviation in the compliance statement attached with this specification. Bidder shall submit such full information, drawing and specification so that merits of his proposal may be fully understood. The specification shall be held binding unless the deviations have been fully accepted as requested.

DATA SHEET	FRP CABLE TRAY	CD-FRP-TRAY-01-DS	
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1.0	Type	Ladder Type
2.0	Material	Antistatic & ultraviolet resistant FRP
3.0	Cable tray width	450 mm
4.0	Side runner for the cable trays	Pultruded FRP Channel of size H-150mm, W-35mm, Thickness- 6mm
5.0	Rung spacing	300 mm
6.0	Thickness of cable tray and accessories	6 mm
7.0	Standard length of one cable tray unit	3000mm \pm 4mm
8.0	Total length of Cable tray including bends/risers/reducers/couplers and accessories for single unit (For 1 'SET')	360 Meter
9.0	Total cable tray requirement	4 SET
10.0	Glass content in cable trays	>55%
11.0	Manufacturing process	Pultrusion using automated pultrusion machines
12.0	Resin to be used	Corrosion & ultraviolet resistant resin, Flame retardant polyester resin
13.0	Loading on the cable trays (in addition to point load of 80Kg to be put at mid-span)	450 wide - 75Kg/m
14.0	Hardware for fixing cable tray to support structure /two successive lengths of cable trays (splicer/coupler plates)	Shall be same as that of tray material with SS bolt, nut and washers
15.0	Covering of cable tray	Required
16.0	Flat cover thickness	3 mm
17.0	Colour of flat cover	Two different colours for easy identification of feeders
18.0	Hardware for fixing flat cover to cable tray	FRP cover clip with fixing hardware. All fixing hardware shall be of 'SS'.

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DATA SHEET	FRP CABLE TRAY	CD-FRP-TRAY-01-DS	
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19.0	Oxygen index	Minimum 30%
20.0	Ultimate tensile strength	30000 PSI Longitudinal Direction
21.0	Tensile modulus	2.5 X 10 ⁶ PSI Longitudinal Direction
22.0	Flexural strength	30000 PSI Longitudinal Direction
23.0	Flexural modulus	1.6 x 10 ⁶ PSI Longitudinal Direction
24.0	Izod impact	25 Ft-LBS Longitudinal Direction
25.0	Compressive strength	30000 PSI Longitudinal Direction
26.0	Compressive modulus	2.5 X 10 ⁶ PSI Longitudinal Direction
27.0	Bar col thickness	Minimum 45 Longitudinal Direction
28.0	Dielectric strength (Axial)	>30kV/25mm
29.0	Dielectric strength (Radial)	>8kV/mm
30.0	Arc resistance	>120 seconds
31.0	Water absorption	≤ 0.5%

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TECHNICAL PARTICULARS	FRP CABLE TRAY	CD-FRP-TRAY-01-TP	
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Vendor shall submit duly filled and signed Technical Particulars at the time of offer.

1.0	FRP Cable tray	
1.1	Name of manufacturer	
1.2	Country of origin	
1.3	Standards applicable	
1.4	Type of cable tray	
1.5	Manufacturing process	
1.6	Material used for construction	
1.7	Glass content in cable trays	
1.8	Size of cable tray	
1.9	Thickness of cable tray and accessories	
1.10	Standard length of one cable tray unit	
1.11	Side runner for the cable trays	
1.12	Rung spacing	
1.13	Loading on the cable trays (in addition to point load of 80Kg to be put at mid-span)	
1.14	Flat cover thickness	
1.15	Colour of flat cover	
1.16	Total length of cable tray (for 4 'SET')	
1.17	Oxygen index	
1.18	Ultimate tensile strength	
1.19	Tensile modulus	
1.20	Flexural strength	
1.21	Flexural modulus	
1.22	Izod impact	
1.23	Compressive strength	
1.24	Compressive modulus	
1.25	Bar col thickness	
1.26	Dielectric strength (Axial)	
1.27	Dielectric strength (Radial)	
1.28	Arc resistance	
1.29	Water absorption	

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COMPLIANCE STATEMENT	FRP CABLE TRAY	CD-FRP-TRAY-01-CS	
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We here by state that our Quotation No is in full compliance with the documents issued against the Enquiry No except for the deviations listed below.

LIST OF DEVIATIONS

Sl. No.	Description	Reasons for Deviation

Name of Vendor:

Date:	Name & Designation	Signature & Seal
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PRE-QUALIFICATION CRITERIA

TENDER No. MM/172/G30866 Dated 28-01-2025

Sl No	Pre-Qualification Criteria (PQC) Conditions	Documents to be submitted along with bid	Bidders compliance
1	The bidder shall be the manufacturer of FRP cable tray or their authorized dealer/ distributor/ channel partner.	Self-declaration by the manufacturer with details of manufacturing facility and contact number. OR In the case of dealer/ distributor/ channel partner, tender specific authorization letter from the manufacturer to certify the competency of the vendor to quote on their behalf shall be submitted along with details of manufacturing facility of OEM and contact number.	
2	The bidder or manufacturer shall be in the business of supply of FRP cable trays for more than 5 years, as on the date of enquiry	Copies of relevant purchase order copies/ other documents to prove this.	
3	Experience of having successfully completed supply of FRP cable tray during the last 7 years, as on the date of enquiry which shall be either of the following. a) 3 completed works with value not less than Rs. 10,40,000 each b) 2 completed works with value not less than Rs. 13,00,000 each c) 1 completed work with value not less than Rs. 20,80,000	Copies of relevant purchase order/ work order and proof of successful commissioning such as Commissioning Report, Completion Certificate, etc. issued/ countersigned by the customer.	
4	a) Average annual turnover of the bidder for the last three financial years ending on 31-03-2024 shall be at least Rs. 52 /- Lakhs or above and b) Annual turnover for each year shall be at least Rs. 8 /- lakhs or above during the last three financial years ending on 31-03-2024	Self-attested copies of audited financial statements (Profit & Loss Account and Balance Sheet) for the last three financial years ending on 31-03-2024.	

NOTE: -

- 1) FACT shall have the liberty to verify the data submitted by the contractor by inspecting the workshop and contacting with their various customers.
- 2) Only technically and commercially prequalified bidders shall be considered for price bid opening and further evaluation.
- 3) Copies of all the above documents shall be duly attested by the bidder.
- 4) IMPORTANT: In case of ambiguity or incomplete or non submission of required relevant documents along with bid, FACT reserves the right, at its option, to reject the Bidders Bid without assigning any reason and without notice.

COMPLIANCE STATEMENT

Sl. No.	Terms	Bidder confirmation
1	Offer shall be strictly as per provided TPS - CD-FRP-TRAY-01	
2	The OEM/ supplier shall provide warrantee for the supplied items for a period of One Year from the date of delivery.	
3	Vendor shall submit duly filled and signed Technical Particulars, Compliance Statement and Type Test report at the time of offer.	
4	Vendor shall submit drawing and BOM of cable tray after commitment for getting approval for manufacturing.	
5	Vendor shall submit installation and maintenance manuals/catalogues along with the supply.	
6	Vendor shall submit routine test reports for verification for issuing dispatch clearance.	
7	Please mention shortest possible delivery period.	
8	Please confirm : Price Basis – FOR FACT Stores (as per Gem T & C)	
9	Please confirm : Taxes and Duties - The Price offered in GEM is all inclusive of TAX. (as per Gem T & C)	
10	Please confirm : Payment Terms : 100% payment will be released within 10 days of the issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills as per GEM terms and conditions. (as per Gem T & C)	
11	Please confirm : Liquidated Damages: As per GeM – “@ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever”(as per GeM T & C)	

Note : All the above columns shall be filled properly, without leaving blanks. Please upload / return this document duly filled-in, along with your bid.