

GOVERNMENT OF TRIPURA
RURAL DEVELOPMENT DEPARTMENT
OFFICE OF THE EXECUTIVE ENGINEER
R.D. KUMARGHAT DIVISION

PRESS NOTICE INVITING e-TENDER NO: e-PT-45/EE/RD/KGT/DIV/2023-24 Dt.16/02/2024

On behalf of the Governor of Tripura, The Executive Engineer, R D Kumarghat Division, Kumarghat, Unakoti, Tripura invites **percentage rate e-tender** in PWD Form No. 7 on double bid system from the Central & State public sector Undertaking/Enterprise and eligible Contractors/Firms/Agencies of appropriate class registered with PWD/TTAADC /MES/ CPWD/ Railway/Other State PWD/other appropriate class up to **11.00 A.M. of 08/03/2024** for the following works:-

Sl. No.	NAME OF THE WORK	ESTIMATED COST	EARNEST MONEY	COST OF TENDER FORM	TIME FOR COMPLETION	LAST DATE AND TIME FOR e-bidding	TIME AND DATE OF OPENING OF BID	DOCUMENT DOWNLOADING AND BIDDING AT APPLICATION	CLASS OF TENDERER
1	Constn. of RCC Foot Bridge over Manu river between Indira Colony,Fatikroy to Saidabari under Kumarghat R.D Block.5 th Call. DNIT.No. eDT-33/RCC Foot Bridge/FTK-Saidabari/MNU-RVR/CE/RDD/KGT-DIV/2023-24 dated 10.10.2023	₹ 2,82,66,225.00	₹ 5,65,325.00	₹ 8000.00	365 Days				
2.	Construction of 500 seated Multipurpose Community Hall at Pecharthal under Unakoti District during FY 2023-24. DNIT.No. e-DT-70/500S/COM-HALL/PTL/CE/RDD/KGT-DIV/DNIT/2023-24, Dated: 12/02/2024	₹ 2,31,18,284.00	₹ 4,62,366.00	₹ 8000.00	320 Days	Up to 11.00AM on 08/03/2024	At 12.00 PM on 08/03/2024	https://tripuratenders.gov.in	Appropriate class

The e-Procurement website will not allow any Bidder to attempt bidding, after the scheduled date and time. **Submission of bids physically is not permitted.**

Earnest Money and bid fee are to be paid online in payment gateway in favour of the Executive Engineer, RD Kumarghat Division, Kumarghat, Unakoti, Tripura. For any enquiry, please contact by e-mail to een1kgt@gmail.com

(Er. S. K Roy)
 Executive Engineer
 RD Kumarghat Division,
 Kumarghat, Unakoti, Tripura.

Copy to:

1. The Chief Engineer, RD Department, Agartala.
2. The District Magistrate and Collector, Unakoti District, Kailashahar, Tripura.
3. The Superintending Engineer, R D 3rd Circle, Kumarghat.
4. The Executive Engineer, RD Store Division (Nodal Officer), Agartala with request to arrange for e-bidding through website <https://tripuratenders.gov.in> on behalf of the undersigned and also to open the bid through online. It is also requested to send the results/output after bid opening along with all downloaded documents etc. to the undersigned.
5. The Executive Engineer, RD Division (Bishramganj/Teliamura/Udaipur/Satchand/Amarpur/ Santirbazar/ Agartala/ Kanchanpur/ Ambassa/Manu) with request to display the NIT in their respective notice board for publication.
6. The Executive Engineer, PWD Division (Kumarghat /Kailashahar), Power Division (Kumarghat/ Kailashahar), PHE Division (Kumarghat/Kailashahar), IFC Division (Kailashahar), Agri Engineering Division (Dharmanagar) with request to display in their respective notice board for publication.
7. The All Block Development Officers under Unakoti District with a request to display the notice in the notice board.
8. The All Assistant Engineers, Junior Engineers, Technical Assistant, Head Clerk, Accountant/Cashier/Store keeper, Work assistant, Mechanic, Tender Section of this division. They are requested to take necessary action for wide publication of the same.
9. The General Secretary, All Tripura Contractors Association, Aitorma Sentrum, 4thFloor, Sakuntala Road, Agartala-799001, West Tripura/ The Secretary, All Tripura Contractors Association, Kumarghat/ Kailashahar for information & necessary action
10. M/S / Sri _____
11. E-Tender File.
12. Work File.
13. Office notice board.

Executive Engineer

Supply-Installation-Testing&CommissioningofStoragewatercoolerwithbuilt in RO+UV

purifier:



Now enjoy cold drinking water that is 100% pure too!

With over seven decades of experience, Blue Star – India's leader in air conditioning and refrigeration solutions – has always been at the forefront of innovation and R&D, bringing you cutting edge products and solutions that offer you more.

Already leaders in the storage water cooler market, Blue Star now brings you storage water coolers with in-built RO+UV purification and filtration processes that not only supply non-stop cold water but also ensure its purity for safe consumption.

Impure drinking water is one of the main causes of infection, even mild poisoning, in many cases. Hence, it is important to have in-built purification processes in the water cooler. That is why Blue Star Water Coolers incorporate everything that is required – reliable cooling systems, RO+UV purification and contaminant filtration – all within the same housing, integrating the systems together for seamless, efficient operation. They are therefore comprehensive and compact solutions for safe, clean and cold drinking water.

The Blue Star range of storage water coolers with in-built RO+UV purification is also designed for faster cooling and with larger storage tanks, to cater to high-volume requirements in schools, colleges, corporates, factories, hospitals and public spaces such as railway stations, airports, pilgrim centres and fuel stations.

Unique 7-stage purification process

Unique polypropylene yarn can detect and remove physical impurities from input water.

Specially treated pre-carbon block for absorbing colour, organic impurities and chlorine.

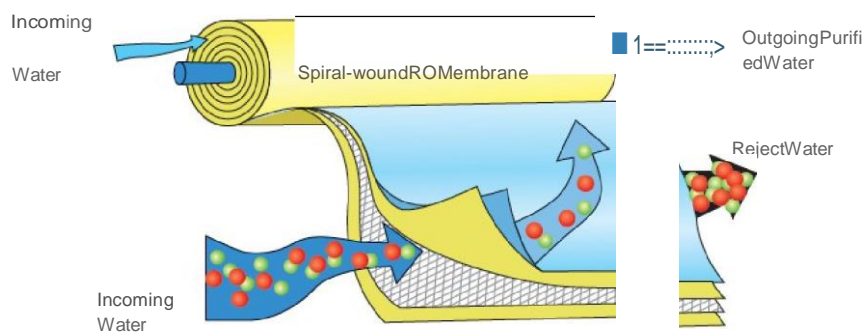
Anti-sealant filter to prevent deposits over the RO membrane.

This sediment filter traps all the fine sediments present in the input water.

RO membrane filter (porosity of .0001 micron) strains micro-organisms and TDS from the input water.

Post-carbon filter to enhance the taste of purified water.

UV disinfection chamber to disinfect the water.



Storage Water Coolers with in-built RO+UVPurifier

Model	SWCSDLX6080UVR0E	
Performance Parameters	Storage capacity (upto float valve level)	80Ltr
	Capacity with comfort level Water outlet temp at 17°C ± 1°C at rated condition	60LPH
	Running current in amps (max) at rated condition	4.5 ± 10%
	Power in wans (max) at rated condition	700:1:10%
	Operating power supply	230:1:10% VAC, 50Hz, 1PH
	Thermal insulation for storage tank	PUF
	No. of faucets	2
	No. of cold water faucets	2
	No. of normal water faucets	NA
	Recommended maximum water flow rate through the faucets in LPM	50LPH
Filtration stages	No. of stages for filter cum purifier	7
	1" stage of purification	Sediment purification
	2" stage of purification	Carbon block purification
	3" stage of purification	Anti-sealant purification
	4" stage of purification	Sediment purification
	5" stage of purification	Reverse Osmosis membrane purification (2 per circuit)
	6" stage of purification	Post-carbon block filtration
RO system	RO membrane rating	4x75GPD or equivalent
	% of purified water recovery	25%, 50LPH
	% rejection of TDS	75%
	Operating temperature	15°C to 45°C
	RO membrane flushing	Auto-flush at every start, every stop and every one hour for 1 minute
	RO system & water cooler operating voltage	180-250V
Body	Storage tank material	S5304
	Outer body material	S5304
	Type of product construction	Concealed
	Type of installation	Indoor
Dimensions & Net Weight	Dimensions (WxDxH) mm	660x480x1355
	Net weight (Kg)	73
Refrigerant	Refrigerant	R134a

SPECIAL CONDITIONS FOR CIVIL (BUILDING) WORKS

1. CEMENT:

The contractor shall procure 43 grades Ordinary Portland Cement

(OPC) conforming to IS 8112, or Portland Pozzolana Cement (PPC) conforming to IS:

1489 (Part 1) as required in the work, from reputed manufacturers of grey cement. Supply of cement shall be taken in 50 Kg. bags bearing

manufacturer's name or his registered trademarks if any and grade and type of cement as well as and ISI marking on bags indicating relevant Bureau of Indian Standards (BIS) Code No. The packing of the cement bags shall be as per CPWD specifications. Samples of cement arranged by the Contractor shall be taken by the Engineer-in-charge and got tested in accordance with provisions of relevant BIS codes. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the Contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.

The cement shall be brought at site in bulk supply as decided by the Engineer-in-charge. The cement godown of required capacity to store the cement shall be constructed by the agency at site of work.

The cement godown shall always be accessible for the Engineer-in-Charge or his representative for inspection.

The cement shall be got tested by the Engineer-in-charge and shall be used on the work only after satisfactory test results are received. The agency shall supply free of charge the cement required for testing including its transportation cost to testing laboratories.

The damaged cement shall be removed from the site immediately by the agency on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the agency.

2. DESIGN MIX CONCRETE FROM BATCH MIX PLANT OR READY-MIX CONCRETE:

Design mix is to be carried out as per IS 10262, IS 456 and other relevant IS codes

/CPWD Specifications amended upto 18.04.2019.

The agency shall install fully automatic Batch Mix Plant at site or in nearby area wherever permissible. If required, agency will arrange concrete from Ready Mix Concrete (RMC) producing plants (located within **50 km** distance from the site of work) with prior approval from Engineer-in-charge. For all purposes, the agency shall be fully responsible for manufacturer of concrete or arrange for concrete from other

source.

The Engineer-in-

Charge will reserve the right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user's end.

The Engineer-in-charge reserves the right to exercise control over the:

Additional Conditions & Specifications

Page 160

Ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recording of test results and declaring the materials fit or unfit for use in production of mix.

Calibration check of the RMC plant.

Weight and quantity check on the ingredients, water and admixtures added for batch mixing.

Time of mixing of concrete.

Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action, if required.

For exercising such control, the Engineer-in-charge shall periodically depute his authorized representative at the RMC plant. It shall be responsibility of the agency to ensure that all necessary equipment, manpower & facilities are made available to Engineer-in-Charge and/or his authorized representative at RMC plant.

All required relevant records of produced and used concrete shall be made available to the Engineer-in-Charge or his authorized representative. Engineer-in-Charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials, production & transportation of concrete mix which shall be binding on the agency. Only concrete as approved in design mix by Engineer-in-Charge shall be produced and transported to the site.

The concrete mix design with and without admixture will be carried out by the agency, at his own cost, through one of the following laboratories/ Test houses to be approved by Engineer-in-charge:

Site laboratory of approved RMC plant or own batch mix plant approved by Engineer-in-charge.

NIT Soranyi Govt. Engineering College.

In the event of all the above laboratories being unable to carry out the requisite design/testing; the agency shall have to get the same done from any other reputed laboratory with prior approval of the Engineer-in-Charge.

3. STEEL REINFORCEMENT BARS:

The reinforcement bars shall conform to relevant Bureau of Indian Standards (BIS) Specifications and it should be laid as per CPWD Specifications.

The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding

and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.

The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement.

To ensure proper cover, factory made round type cover blocks will be used to avoid displacement of bars in any direction.

The steel reinforcement shall be brought to site as per direction of the Engineer-in-charge.

The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different grades, sizes and lengths shall be stored separately to facilitate easy counting and checking.

The reinforcing steel brought to site of work shall be stored on brick timber platform of 30 to 40 cm height, nothing extra shall be paid on this account.

Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer-in-Charge.

The contractor shall have to obtain vouchers and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in the relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected and it shall be removed from the site of work by the contractor at his cost within a week of written orders from the Engineer-in-charge to do so.

For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

Size of Bar	For consignment below 100 tonne	For consignment above 100 tonne
Under 10mm dia. bars	One sample for each 25 tonne or part thereof	One sample for each 40 tonne or part thereof
10mm to 16mm dia. bars	One sample for each 35 tonne or part thereof	One sample for each 45 tonne or part thereof

Over 16 mm dia. bars	One sample for each 45 tonne or part thereof	One sample for each 50 tonne or part thereof
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Additional Conditions & Specifications

Page 163

The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.

Steel bars brought by the contractor for use in the work shall be got checked from the Engineer-in-charge or his authorized representative of the work on receipt of the same at site before use.

The standard sectional weights referred to as in CPWD specifications for works 2019 Vol. I will be considered for conversion of length of various sizes of MS bars, HSD steel bars and TMT bars into standard weight.

Records of actual sectional weight shall also be kept dia-wise & lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-charge shall

be final for the procedure to be followed for determining the average sectional

weight of each lot. Quantity of each diameter of steel received at site for work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the weighted average sectional weight shall be termed as derived actual weight.

If the derived weight as in para 3.15 above is lesser than the standard weight, the derived actual weight shall be taken for payment.

If the derived actual weight is found more than the standard weight than the standard weight as worked out in para 3.14 above shall be taken for payment. In such case nothing extra shall be paid for the difference between the derived actual weight and the standard weight.

For plain and reinforced cement concrete (PCC and RCC) or pre-stressed concrete (PSC) works, the reinforcement bars as the case may be, shall consist of the following grades:

Mild Steel (MS) : Grade-1 (conforming to IS 432).

High Strength Deformed (HSD) / Thermo Mechanically Treated (TMT) Steel : Fe 415, Fe 415D, Fe 415S, Fe 500, Fe 500D, Fe 500S, Fe 550, Fe 550D & Fe 600

(conforming to IS 1786).

HSD/TMT bars supplied by the contractor shall possess following properties :

Having minimum elongation of 14.5%

The actual 0.2% proof strength of steel bars based on tensile test must not exceed their characteristic 0.2% proof strength by more than 20%

The ratio of the actual ultimate strength to the actual 0.2% proof strength / yield strength shall be at least 1.15.

Corrosion resistant steel rebars.

Additional Conditions & Specifications

The contractor shall obtain manufacturer's certificate stating the process of manufacture, chemical composition and test sheet giving result of each

mechanical test applicable to the material purchased and submit to the Engineer-in-charge. Each test certificate indicates the number of the cast to which it applies, corresponding to the number or identification mark to be found on the material.

The **Engineer-in-charge** shall get each consignment **tested** for both **chemical composition & physical properties** (including bend & re-bend test) as specified IS: 1786 (HSD) or IS: 432 (MS) from National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited or, Bureau of Indian Standards (BIS) certified or, any Government Laboratory.

In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work by the contractor at his own cost within 3 (three) days of written orders from the Engineer in charge to do so.

4. STRUCTURAL STEEL:

GENERAL :

For all steel related erection & fabrication work, the necessary steel fabrication shop drawing has to be submitted by the contractor/ agency to the Engineer-in-Charge for approval before starting any steel structure related fabrication & erection work.

Joints in steel section will be done as per steel shop drawing particularly on location specified in the shop drawing.

Detailing of joints to be done as per connection detail provided in the approved shop drawing.

All base plates, anchor bolts and side plates shall be properly grouted (between RCC & steel plate) with non-shrink grout as per standard practice. Generally, the grade of grout is chosen one grade higher than that of RCC column / pedestal.

The end of the RCC column / pedestal shall be machine finished so that there shall be perfect touch between the column section and the base plate. The machine finished surface could be checked by trying to pass a ray of torch. If the light does not pass, the desired machine finished has been achieved.

All steel sections shall be clean, rust free and straightened, if necessary.

Open end of all hollow steel sections shall be sealed with steel plate.

MATERIAL-STEEL HOLLOW SECTION:

All Steel Hollow [Square / Rectangular] Section to be used, should conform to Yst310 Grade (or higher grade as specified in the structural/shop drawing) of IS 4923:

2017 [Hollow steel sections for structural use - specification].

All Steel Hollow [Circular] Section to be used, should conform to Yst310 Grade (or higher grade as specified in the structural/shop drawing) of IS 1161: 2014 [Steel tubes for structural purposes - specification].

Marking: Manufacturer name/Logo/Trade-mark shall be embossed on

each hollow section. Each hollow section shall have sized designation suitably marked on it. Alternatively, a label containing the particulars may be attached to a bundle of hollow sections. Hollow sections may also be marked with the Standard Mark. Also, hollow sections may be marked with the relevant BIS Standard Mark. These marks shall be checked & verified with the approved structural/ fabrication shop drawing before the starting of erection & fabrication work.

Testing: Random sample of Steel Hollow Section [Square/Rectangular / Circular] for testing shall be collected as per concerned code procedure and necessary code specified test shall be done from National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited or, Bureau of Indian Standards (BIS) certified testing facility/laboratory. The test report of steel hollow section shall be submitted to the concerned design office & get approved before erection & fabrication of structure.

MATERIAL-STEEL HOT ROLLED SECTION:

All Hot Rolled Steel Section [Angles, Tees, Beams, Channels, etc] to be used, should be minimum Grade "E250 (or higher grade as specified in the structural/ fabrication shop drawing), Sub-quality-A" conforming to IS 2062: 2011 [Hot Rolled Medium and High Tensile Structural Steel – Specification].

Marking: Each product shall carry a tag or be marked with the manufacturer's name or trade-mark. Designation of steel should also be similarly marked on the product or tag. Every heavy, medium structural mill and plate mill product shall be marked with the cast number. The ends of the rolled products shall be painted with a colour code, as agreed to between the purchaser and the supplier. Also, each section may be marked with the relevant BIS Standard Mark. These marks shall be checked & verified with the approved structural/ fabrication shop drawing before the starting of erection & fabrication work.

Testing: Random sample of Hot Rolled Steel Section [Angles, Tees, Beams, Channels, etc] for testing shall be collected as per concerned code procedure and necessary code specified test shall be done from National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited or, Bureau of Indian Standards (BIS) certified testing facility/laboratory. The test report of Hot Rolled Steel Section shall be submitted to the concerned design office & get approved before erection & fabrication of structure.

MATERIAL-STEEL PLATES, STRIPS, SHEETS, BARS & FLATS:

Additional Conditions & Specifications

Page 168

All steel plates, strips, sheets, bars & flats to be used, should conform to IS 2062: 2011 & IS 1730:1989.

For plates, strips, sheets & flats, minimum grade of steel to be used should be E250 (or higher grade as specified in the structural/ fabrication shop drawing), Sub-quality-A unless otherwise specified in steel shop drawing.

Marking: Each product (Bars and flats) shall carry a tag bearing the manufacturer's name or trade-mark. Designation of steel should also be similarly marked on the product or tag. Plates and sheets shall be supplied in bundles, and strips in coils. Each bundle a metal tag or adhesive label/sticker bearing the cast number or identification mark or lot number traceable to the cast number and the manufacturer's name or trademark. Alternatively, top sheet/plates shall be legibly marked with the cast number or identification mark or lot number traceable to the cast number, name of the manufacturer or trade-mark. These marks shall be checked & verified with the approved structural/ fabrication shop drawing before the starting of erection & fabrication work.

Testing: Random sample of plates, strips, sheets, bars & flats for testing shall be collected as per concerned codal procedure and necessary codal specified test shall be done from National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited or, Bureau of Indian Standards (BIS) certified testing facility/laboratory. The test report of plates, strips, sheets & flats shall be submitted to the concerned design office & get approved before erection & fabrication of structure.

BOLT:

All fastener bolts, nuts shall be of minimum "Property Class 4.6" (or higher property class as mentioned in structural/ fabrication shop drawing) and shall conform to latest edition of IS 1367 (part 1/2 /3).

All foundation bolts, nuts shall be of minimum "Property Class 4.6" (or higher property class as mentioned in structural/ fabrication shop drawing) and shall conform to IS 5624:1993 [Reaffirmed year: 2019].

All fastener hexagonal head bolts, nuts shall be of minimum "Property Class " (or higher property class as mentioned in structural/ fabrication shop drawing) and shall conform to latest edition of IS 1364 (part 1/2/3).

Marking: Property class is marked in each bolt head for easy identification of bolt. This shall be checked & verified with the approved structural/ fabrication shop drawing before the starting of erection & fabrication work.

Testing: Random sample of bolts for testing shall be collected as per concerned codal procedure and necessary codal specified test shall be done from National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited or, Bureau of Indian Standards (BIS) certified testing facility/laboratory. The test report of bolts shall be submitted to the concerned design office & get approved before erection & fabrication of bolts.

WELDING:

Welding is the process of joining two similar or dissimilar metals by heat or by pressure or by both using a filler metal to achieve a defect less joint having the physical properties similar to that of parent metal.

All welded connection shall be done as per weld size & detail specified in steel fabrication shop drawing.

All weldings shall conform to IS 816:1969 [Reaffirmed year:2013].

Electrodes to be used for mild steel welding shall conform to **IS 814: 2004** [reaffirmed year: 2021] or **any other code as per steel fabrication shop drawing** and the same shall be selected according to welding procedure and quality thickness of metal to be welded.

All the required stages of inspection on welding shall be done conforming to IS 822:1970 [reaffirmed year:2019] and as per direction of Engg-in-Charge.

All the welding connection **Non-Destructive Testing "Die Penetrant Test"** shall be done as per IS 3658:1999. Necessary standard correcting measures should be taken at site based on the test report of welding and a Report on total procedure of testing & correcting measure of welding adopted at site shall be submitted to the concerned design office during the process of erection & fabrication of structure.

Correct size/dia. & type of **electrode (Rutile covering)** should be used.

Damp or damaged electrodes should not be used.

Proper current & voltage should be adjusted with respect to size of electrode and work.

The runs of welding should be in proper number and they should be deposited with adequate arrangement in case of multi-run welds.

Steel sections to be welded should properly be prepared by cleaning, chamfering or profiling for particular type of welding joint.

Welding is not the process of filling gap, so skilled person shall prepare the template & cut/profiling the members/sections to be welded so that no visible gap shall prevail between the members / sections.

A sequence of weldings should be welded to minimize the effect of distortion.

Wherever required, pre or post heating should be resorted to avoid cracking of weld metal.

Before depositing a run, the slag over a bottom run already deposited should be thoroughly chipped and cleaned with wire brush and the weld metal is examined for any defects.

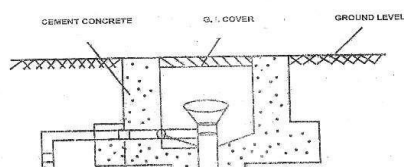
**ADDITIONAL SPECIFICATION & SPECIAL CONDITIONS FOR
INTERNALELECTRIFICATION WORKS**

1. The work shall have to be carried out in accordance with the requirements of Electricity Act, 2003, Indian Standard Specification (ISS) and Central Electricity Authority (Measures relating to safety of Electric supply) Regulations 2003 as applicable in this work.
2. The contractor shall have to carry-out the work under the supervision and instruction of the Engineer-in-Charge of work whose decision shall be final and binding on the contractor.
3. The contractor shall have to make his own arrangement for the procurement of the materials required for the execution of the work except for the materials stipulated to be issued to the contractor as per provision in the agreement and their proper storage and custody at the site of the work.
4. All the materials are to be supplied and to be used in the work by the contractor are to be approved by the Executive Engineer, or the authorized Engineer-in-Charge. Any materials used without prior approval may

beliable to be rejected.

5. The contractor may require to make holes on the wall, ceiling etc. in the buildings and in course of such action may damage the building, which shall have to be made good to the satisfaction of the Engineer-in-Charge. The opening made shall have to be filled up and finished to the satisfaction of the Engineer-in-Charge.
6. The switches (Flash type) and the plug shall have to bear ISI certification marks, Pendant/Batten/Bracket holders and the Ceiling Roses shall be made of Bakelite and shall bear ISI certification mark,
7. Departmental materials like fans will be issued to the contractor at the final stage i.e. after satisfactory Progress/completion of all other items of work in the agreement.
8. Earthing shall have to be done as per drawing and as per ISI No, IS ; 3043, 3966, Earth pipe shall be of G.I. pipe of medium quality conforming to ISI and of Tata/Jindal make.
9. Manufacturers Certificate/Test certificate of light fittings are to be produced before fixing the fittings.
10. Cables shall bear 1st certification mark.
11. All wooden fittings such as boards, blocks etc, shall be of well-seasoned Gamair wood or of any approved insulating materials and shall be of double type i.e. separate bases on top, The wooden board shall be well burnished on all side (both inside and outside) and as specified by the Engineer-in-Charge.
12. The wiring shall not in any circumstances be bent so as to form a right angle, but shall be rounded off at the corners to a radius not less than six times the overall diameter of the cable.
13. The PVC sheathed wirings shall be painted with a synthetic enamel paint of quick drying type.
14. Wooden round blocks should be 76x38mm. and iron screws should be 45mm.
15. The electrical wiring shall conform in all respect to IS: specification (Electrical wiring installation for system voltage not exceeding 650 volts)
16. Completion report will have to be submitted in prescribed form i.e., Appendix-D of IS: 732-1963.
17. The materials where specific name of the manufacturer is mentioned are to be procured from the authorized dealer of the products and related Challan/Voucher are to be submitted in original whenever so asked for by the Engineer-in-Charge Guarantee certificate of gears / fixtures are to be produced,
18. The successful contractor will arrange safe guarding of the electrical installations for a period of 45 (forty- five) days after completion of work free of cost. The S.D.O. (Elect.) concern will arrange handing over of the electrical installation to the owner of the building within that period.
19. All electrical materials are to be of make of as per list of approved materials in the agreement
20. Wiring work should be carried out as per instruction given in T.S.R. (Internal Electrification work) 2021.
21. If there is any printing or typing mistake found in the work schedule in case of schedule item of T.S.R. (I.E work) 2021, work is to be carried out as per specification and rates are to be given as per T.S.R. (I.E work) 2021.
22. The Tender(s) shall have to submit attested copy of the valid copy of the valid license regarding engagement of workers in the contract works from Labour Department, Government of Tripura along with tender. In case of failure to submit the attested copy of the valid license for engagement of labourers for contract works along with the tender, the tender shall be rejected.
23. All work shall be carried out in accordance with the Tripura PWD specification and where Tripura PWD specification is silent the specifications of CPWD/CPHEEO/CWC/MORT&H/BIS or if any specified separately will be followed.

METHODS OF EARTHING



SPECIAL TERMS AND CONDITION FOR LAN, EPABX, PA, FIRE DETECTION & ALARM SYSTEM, CCTV SURVEILLANCE AND DG SET/UPS/INVERTER

A. LAN/EPABX/PA/FireDetection&Alarmsystem/CCTVSurveillance:

1. All products should be procured by the Agency from the authorized dealer/manufacturers. Necessary purchase documents (Challan / invoice as desired by the Executive engineer) and product Manual Books of items concerned must be submitted to the concerned Executive Engineer. If necessary, the contractor / firm shall have to supply manufacturer's test certificate of various equipment prior installation of the equipment at site. The Agency will be liable to ensure that the system so installed satisfies the specifications of the contract. After completion of the work the Agency must furnish the actual drawing of the total installation to the concerned Executive Engineer.
2. Tenderer will ensure that the equipment supplied under this contract are vermin proof and defects arising due to rendering any insect or reptile etc. will be made good by the tenderer. The system is deemed to have life span of 10 years. Under no circumstances the system will be declared obsolete during above 10 years period by the firm/ manufacture.
3. GUARANTEE. The contractor shall guarantee that the material and workmanship of the apparatus installed by him under these specifications are new and as per specification in every respect and for that he will make good any defect for the period of minimum 12 months guarantee period offer by the manufacturer firm of apparatus from the date of completion of 30 days trouble free operation. If any sorts of problem arise within this period, the Agency shall have to repair the same at his own cost and risk.
4. INSPECTION:- If required the equipment/material shall be got inspected by firm from Engineer-in-Charge or his representative in token of approval of material before the same is transported to the site work. Manufacture test certificates should be given by the Contractor for EPBAX, Fire Alarm, LAN & CCTV system and instruments.
5. Performance of the PA system must be carried out by the agency for at least 05 (Five Hours) in presence of the Engineer in charge before claiming for bill.
6. Performance of the Alarm and detection system must be carried out by the agency for at least 10 (Ten Hours) in presence of the Engineer in charge. Indication of affected zone in panel and maximum audio distance from the hot term must be recorded and will have to be submitted to the concerned Executive Engineer.
7. After completion of work the Fire Alarm System shall be got checked / inspected from the concerned Fire Officer and his satisfactory inspection report shall be supplied to the department.
8. COMPLETION: After completion of maintenance work or its termination by deptt. Mid way, due to any reason what-so-ever, the firm will hand over the complete system in working order with every part intact. In case, if any part is found missing or of substandard specifications, due recovery will be made for such a deficiency and measures to affect such recovery as deemed fit, will also be taken against the firm.
9. After final completion of system, the same will be inspected by the Engineer / Technical person of manufacturer to ensure that installation is technically correct. Necessary certificate to this effect shall also be submitted duly signed by the competent person.
10. FREE MAINTENANCE: After 30 days trouble free operation, mtc. service for the system shall be provided free for a period of 12 months. The mtc. service shall include at least monthly examination of installation during regular working hours by trained staff and shall include all necessary adjustment, overhauling, cleaning, setting right of defects including replacement of defective parts with genuine standard parts only as required to keep the

equipment in proper operation. There shall not be delay of more than 24 hours in attending to minor breakdown/defect and 48 hours for the major breakdown/defect reported in station. In case the firm does not adhere to the schedule of monthly examination and attending of complaints as mentioned above, the same shall be got done and attended to at the risk and cost of firm and amount the expenditure incurred will be recovered from the firm from his pending dues / security deposit.

11. The part, if replaced by the firm shall be OEM parts matching with the existing equipment. Defective / removed parts will be the property of the firm.

12. The department will have prerogative / option to discontinue the maintenance work of complete / part system without assigning any reason at any time without paying any compensation for such an act. However, a valid one-month notice will be given before taking any such action as mentioned above or maintenance charges will be paid to firm for the period for which notice falls short.

13. The successful tenderer will have to train two persons nominated by the department for proper handling and minor routine maintenance if felt necessary.

14. The firm shall be liable to pay compensation in event of any accident occurring to the person using

or intending to use the system in instrument due to the fault in the system on account of non-keeping the system in proper working order and other safety measures.

B. DG Set/UPS/INVERTER:

1. All products should be procured by the Agency from the authorized dealer/manufacturers. Necessary

purchased documents (Challan/invoice as desired by the Executive Engineer) and product Manual Book of items concerned must be submitted to the concerned Executive

Engineer. If necessary, the contractor / firm

shall have to supply manufacturer's test certificate of various equipment prior to installation of the equipment

at site. The Agency will be liable to ensure that the systems so installed satisfy the specifications of the contract.

2. Polarity Test, insulation test, Phase Sequence test will have to carry out by the agency in presence of Engineer in charge and corresponding report must be submitted by the Agency to the concerned Executive Engineer.

3. Performance of the DG set must be carried out by the agency at different loads from no-load to connected load for at least 10 (Ten Hours) in presence of the Engineer in charge. Cost of fuel for carry out this performance should be remitted by the agency.

4. For DG sets of capacity more than 200 KVA, testing shall necessarily be carried out at factory / manufacturer premises in presence of representative above or equal the rank of Assistant Engineer of the department. The entire cost for the factory test will have to be borne by the agency.

5. For Testing the following procedure will have to followed; All major items/equipment i.e. engine and alternator is assembled condition, associated electrical control panels etc. shall be offered for inspection and testing at factory. The successful tenderer shall give a notice of minimum 2 (Two) weeks for carrying out such test. The Engineer-in-charge shall witness such inspection and testing at mutually agreed date. The entire cost for the factory test will have to be borne by the agency.

6. DG set will be tested on load of unity power factor for the rated Kilowatt rating. During testing, each of the DG set covered under scope of work shall be operated for a period of 12 (Twelve) Hours on the rated Kilowatt of the DG set including 1 (One) hour on 10% overload after continuous run of the 12 (Twelve) hours on rated load. During testing all controls / operation safety will be checked and proper record will have to maintain. The DG set will be cleared for dispatch to site while the testing is declared successful by the Engineer-in-charge.

LIST OF APPROVED MAKES/MANUFACTURERS FOR CIVIL ITEMS

SL.NO.	DESCRIPTION OF THE ITEM	RECOMMENDED/APPROVED MANUFACTURERS
1	OPC: Grade 43/53	
	Grey cement	Dalmia, Star, Amrit, Ultra Tech, Topcem
	White cement	Birla White JK, Asian Paint
2	Waterproofing compound	Cicco, Fosroc, Roffe, Fairmate, SIKA
3	Plasticizers, Non-Shrink grout.	Fosroc, Roffe, Fairmate
4	Expansion Joint Filler	Silfil of Supreme Industries Ltd.
5	TMT bars	TATA, SAIL, JINDAL, SHYAM
6	Stainless Steel	Salem Steel/Indalco
7	Aluminum Extrusion	Hinalco/Indalco/Jindal
8	uPVC Window	Fenesta/VEKA India Pvt. Ltd./LG Hausys/Encraft
9	Chemical Water-proofing	SIKA/Pidilite/Xypex/Aquafin-IC
10	Synthetic Enamel Paints & Primer	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
11	Waterproof cement paint	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
12	Acrylic Weather shield paint	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
13	Plastic Emulsion & Acrylic distemper	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
14	Synthetic Textured Paint	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
15	Premium Textured Exterior Paint	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
16	Interior Textured Paints	Jenson & Nicholson, Berger, Asian Paints, Goodlass Nerolac
17	Vitrified Tiles	Johnson/Nitco/Kajaria
18	Ceramic Tiles	Johnson/Nitco/Kajaria
19	Tile Adhesive	Laticrete, Pidilite
20	PVC Pipes	Supreme/Finolex/Prince
21	Gypsum Board False Ceiling	India Gypsum Ltd.
22	Glass wool	Lloyds/Twiga
23	Plywood (BWPMarine Grade)	Century, Anchor, Greenply, Kitply, Kenwood
24	Marine grade Block Board	Century, Anchor, Greenply, Kitply, Kenwood
25	Laminated sheet	Greenply, Formica, Decolam, Royal touché,
26	Flush door	Anchor, Kutty, Century, Greenply
27	W.C./Washbasins/Urinals	Jaquar/Hindware/Parryware
28	C.P. FITTINGS	Jaquar/Essco/Parryware
29	G.I. PIPES & FITTING	TATA

Note: 1. Wherever applicable only I.S.I approved first class materials are to be used. In other cases where I.S.I specifications/certifications are not available the superior range quality materials are to be used and all the products got approved by the Engineer-in-Charge.

2. The Engineer-in-Charge reserves the right to specify a particular brand name of a product, in his sole discretion, for use in the contract. No excuse from the contractor as regard variation in rates, in this context will be valid.

3. Any other items which are not incorporated in the above list but become mandatory to be used at the project may be approved from the Tender Inviting Authority by the concerned bidder, prior to the installation.

LIST OF APPROVED MAKES/MANUFACTURERS FOR ELECTRICAL ITEMS

SL.NO.	DESCRIPTION OF THE ITEM	RECOMMENDED/APPROVED MANUFACTURERS
1	Piano type normal switch/socket/step fan regulator	Anchor, Cona, Havells
2	Piano type fancy switch/socket/step fan regulator	Anchor, Cona, Kolors
3	Modular type switch/socket/step fan regulator/ motor starter/ GI deep box.	Anchor-Wood, Crabtree-Athena/Murano, Legrand-Myrius, Schneider Livia/Clipsal X, L&T-Oris, Hager
4	Holder (Angle/pendent/batten)/ ceiling rose/DP switch (Kitkat) /Call bell (buzzer/dingdong /musical).	Anchor, Havells, L&T
5	PVC casing, capping/conduit & accessories.	Presto Plast, AKG, Precision
6	PVC Coil pipes	Calcutta Plastics
7	PVC Insulated aluminum single core/multicore conductor cable.	A.K Lite, ATC, Plaza
8	PVC Insulated copper single core/multicore conductor cable.	Finolex, Havells, RR Kabel, Polycab,, L&T,
9	Rewireable type.	Indo Asian, Havells, HPL, C&S.
10	HR type main switch/ Changeover switch/Timer switch/ MCBDB/ MCB /MCCB/ RCCB /isolator	Havells, Schnider, ABB, L&T, C&S, Legrand, Hager, Siemens
11	Bus-bar chamber	Havells, Geco, Ship
12	Cut-out	L&T, HPL, Havells, Indo Asian.
13	Light Fittings (Conventional/ LED), Lighting accessories, LED drivers.	Phillips, Crompton, Bajaj, Havells, Wipro
14	Lamps	Phillips, Crompton, Bajaj, Havells, Osram, Wipro
15	Fan (Ceiling/exhaust/wall/pedestal).	Crompton, Havells, Khaitan, Orient.
16	Capacitor	Usha, Bajaj, Crompton, Havells, Khaitan, Orient, Universal.
17	Armored/Un-armored cable	Havells, Polycab, ATC, KEI
18	Room heater/Storage water heater	Crompton, Bajaj, Havells, Usha, VGuard
19	Inverter	Su-Kum, Microtech, Luminus, Excide, Amaron
20	UPS	Numeric, APC, Schneider, Vertiv, ABB, Seimens
21	Battery	Exide, Microtech, Luminous, Su-kum, Amaron, Quanta
22	GI Pipes	TATA, Jindal.
23	Terminal ends/Lugs	Dowells, Jainson.
24	Fan clamp box	Mahajan
25	Air Conditioner	Carrier, Daikin, Blue Star

Note:

- Wherever applicable only I.S.I approved first class materials are to be used. In the cases where I.S.I specifications/certifications are not available the superior range quality materials are to be used and all the products got approved by the Engineer-in-Charge.

2. The Engineer-in-Charge reserves the right to specify a particular brand name of a product, in his

sole discretion, for use in the contract. No excuse from the contractor as regard variation in rates, in this context will be valid.

3. Any other items which are not incorporated in the above list but **Page 175** mandatory to be used at the project may be approved from the Tender Inviting Authority by the concerned bidder, prior to the installation.