



West Bengal State Electricity Distribution Company Limited

(A West Bengal Government Enterprise)

Regional Office: North 24 Parganas

Administrative Building, Vivek Nagar, B.T. Road, P.S. Khardah

District: North 24 Parganas, Pin 700119

Telephone: (033) 2592 0353 / 0591 :: e-mail: rm.north24pgs@wbasedcl.in

NOTICE INVITING e-TENDER

NIT No: RM/24PNR/ELEC/2022-23/21/2

Date: 12.07.2023

The Regional Manager, North 24 Parganas Region, WBSEDCL invites e-tender for the work detailed in the table below.

(Submission of Bid through Online)

Sl. No.	Name of the Work	Estimated Amount (Rs)	Earnest Money Deposit (Rs)	Period of Completion
01.	2 nd Call for Design, fabrication, testing, supply and delivery of various L&MV electrical equipments for installation at the proposed textile parks at Ashoknagar and Banipur under Habra Division, District North 24 Parganas.	57,52,292.00 (Fifty seven lakh fifty two thousand two hundred ninety two only)	@2% of the estimated cost to be submitted online	60 (Sixty) days from the date of approval of GTP / Drawing.

- (1) For e-filling of tender, intending bidder may download the tender documents from the website <https://wbtenders.gov.in> directly with the help of Digital Signature Certificate (DSC).
- (2) Both Technical Bid and Financial Bid should be submitted in technical and financial folder concurrently and duly digitally signed by the prospective bidder through the website <https://wbtenders.gov.in>.
- (3) Technical Document and Financial Bid should be submitted online on or before the 'Date & Time Schedule' stated in Serial Number (10).
- (4) The FINANCIAL OFFER of the prospective bidder will be considered only if the TECHNICAL DOCUMENT is found qualified by the Tender Inviting Authority. The decision of the Tender Inviting Authority will be final and absolute in this respect. The list of Responsive and Non-Responsive Bidders will be displayed in the website.

- (5) The bid so prepared by the bidder and all other correspondences and documents relating to the bid, exchanged by the bidder and WBSEDCL, shall be written in English Language only.

(6) Eligibility criteria for participation in the tender:

- (a) The bidders must be bonafide, experienced & resourceful Manufacturers, Suppliers, Sellers, Resellers or contractors who are technically and commercially qualified and have successfully completed similar nature of works and supplied to Government, Semi-Government, Government Undertaking Organizations, Government Enterprises or any power utility including WBSEDCL, WBSETCL or WBPDCCL etc.

The Bidders are required to produce valid copies of current G.S.T. Registration Certificate, Professional Tax (P.T.) Deposit Challan, PAN card, Income Tax Acknowledgement / Return for the last three financial years, Trade License, Certificate of Incorporation of Company (if applicable) as well as other certificates of compliance of statutory obligations (to be documented through e-filing) and **Documents of Credential in the form of successful work completion certificate / performance certificate along with copy of Final Order of executing similar nature of works of Govt., Semi Govt., Govt. undertaking Organizations, Govt. Enterprises or any power utility etc. in last 05 (five) years:**

- i. **3 nos. works (similar nature of works) costing not less than 30% of the estimated cost**
or
- ii. **2 nos. works (similar nature of works) costing not less than 40% of the estimated cost**
or
- iii. **1 nos. works (similar nature of works) costing not less than 50% of the estimated cost**

- (b) The Bidders shall submit reports on the financial standing reflecting solvency of bidder (company / firm) as certified by bankers including Annual Audited Financial Report for last 3 (three) years to be submitted for verification in respect of bidders for whom Audit of Accounts is mandatory. For whom Audit of Accounts is not mandatory, they shall submit copy of Income Tax Returns along with related enclosures (Form 3CA and Form 3CB) for last 5 years. Average annual turnover during last 3 years shall not be less than 30% of the estimated cost. Working capital in the year, proceeding the year of bid submission shall not be less than 30% of the estimated cost. In case documents certifying credit facility from a scheduled bank is submitted, the requirement given in clause (c) above shall be judged by adding available credit facility and working capital taken together.

(7) Responsibility of Bidders:

- (i) It shall be the sole responsibility of Bidders to determine and to satisfy themselves by such means as they consider necessary or desirable for all matters pertaining to this contract including, in particular, all factors that may affect the cost, duration and execution of the work.
- (ii) It must be understood and agreed that such factors have properly been investigated and considered while submitting the bid. Any claim, whatsoever, including those for financial adjustments to the contract, once awarded under these documents will not be entertained by WBSEDCL. Neither any change in time schedule of the contract nor any financial

adjustments, arising thereof, shall be permitted by WBSEDCL, which are based on the lack of such clear information of its effect.

- (iii) WBSEDCL will not assume any responsibility regarding information gathered, interpretations or conclusions made by the bidder or regarding information, interpretation or deductions the bidder may derive from the data furnished by WBSEDCL . Verbal agreement or conversation with any officer, employee of WBSEDCL either before or after the execution of the contracts, shall not affect or modify any of the terms or obligations contained in the contract.
- (iv) The bid shall include all the information as per bid document. The bidder is expected to examine carefully all instruction, conditions, forms, schedules, terms, Annexure, specifications etc. in the bidding documents. Failure to comply with the requirement of bid submission will be at the bidders own risk. Bids, which are determined to be not substantially responsive to the requirements of the bidding documents, will be rejected.
- (v) The bidder shall bear all the costs associated with the preparation and submission of bid and WBSEDCL in no case shall be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.
- (vi) In order to avoid any problem arising out of network error or server error, bidders are advised to submit the bid, well in advance of the last date and time of submission of the bid. WBSEDCL shall not be held responsible for any failure of Bid submission due to snag arising out of network failure.

(8) **Mobilisation Advance:** No mobilisation advance or secured advance will be allowed.

(9) **Validity of Bids:** Bids shall remain valid for a period not less than **120 (One hundred twenty) days** after date of opening of bids of the tender. Bids valid for a shorter period shall be rejected by the Tender Inviting Authority as non-responsive. If the bidder withdraws the bid before the period of bid validity without giving any satisfactory explanation for such withdrawals, the earnest money as deposited will be forfeited forthwith without assigning any reason thereof.

(10) **Schedule of Key Dates & Time:**

Sl. No.	Particulars	Date & Time
01.	Date of uploading of N.I.T and Tender Documents (online). [Publishing date]	12.07.2023 after 10.00 Hrs
02.	Documents Download Start date (online).	12.07.2023 after 10.00 Hrs
03.	Bid Submission Start date (online)	12.07.2023 after 10.00 Hrs
04.	Bid Submission End date (online)	26.07.2023 up to 15.00 Hrs
05.	Last date of Online deposition of EMD	26.07.2023 up to 15.00 Hrs
06.	Technical bid opening date (online)	28.07.2023 after 15.00 Hrs
07.	Date of uploading the Final List of Technically Qualified Bidders after Technical Bid Evaluation (online).	To be intimated later.
08.	Financial Bid opening date (online).	To be intimated later.

(11) **Earnest Money Deposit (EMD):**

The amount of Earnest Money Deposit (EMD) shall be deposited **through Online** as prescribed in the NIT. The bidder shall select the tender to bid and initiate payment of EMD.

(a) Following payment options are available for paying EMD amount through

Online mode:

- **Net-banking through payment Gateway.**
- **RTGS / NEFT Payment:** On selection of RTGS/NEFT as the payment mode, the e-Procurement portal will show a pre-filled challan having the details to process RTGS/NEFT transaction. The bidder will print the challan and use the prefilled information to make RTGS/NEFT payment using his bank account. Once the payment is made, the bidder will come back to the e-procurement portal to continue the bidding process after expiry of a reasonable time to enable the RTGS/NEFT process to be completed.

(b) **General Instruction for Online Payment:**

- The bidder will have to mandatorily pay through Net-banking facility once Net-banking mode is opted for payment.
- Status of NEFT/RTGS payment through challan for a bid may take time for bank settlement which is updated in 24 Hrs. (approx.). As such bidders opting to pay through NEFT/RTGS mode shall make payment well before 24 Hrs. to avoid any complicity.
- In case actual EMD amount as per NIT is more than the one shown in E-tender Portal, bidders will have to opt for NEFT/RTGS mode (challan mode). In that case the total actual EMD amount is to be paid only through NEFT/RTGS mode (challan mode).
- The bank account used for payment of EMD by the bidders shall be maintained operative until the completion of tendering process. All refunds will be made mandatorily to the Bank A/c from which the payment of EMD has been initiated.

(c) **Refund /Settlement of EMD Amount:**

- For unsuccessful bidders, EMD amount submitted against the tender shall be refunded automatically, through an automated process, by NIC portal on receipt of updated status of any bid.
- For successful bid(s), EMD will be refunded from WBSEDCL authority after completion of tendering process and following due procedures.
- The bank account used for payment of EMD by the bidders shall be maintained operative until the completion of tendering process. All refunds will be made mandatorily to the Bank A/c from which the payment of EMD has been initiated.
- For any queries related to payment and refunds, bidders will have to communicate with ICICI Customer Support, viz. 033 4026 7512 / 13 since payment gateway facility used by E-tender portal is maintained by ICICI.

(d) Successful bidder(s) shall have to mandatorily **create Vendor ID through WBSEDCL Web Portal Vendor Corner**, if not created earlier.

(e) **Forfeiture of Earnest Money Deposit (EMD):** Earnest money deposit / bid guarantee shall be forfeited in case of the following situations:

- If during the period of validity, the bidder withdraws / modifies its bid as a whole or in part.

- If the bidder deviates from any clarification/confirmation given by him sub-sequent to submission of his bid.
 - In the case of successful bid, if the bidder fails:
 - To accept LOA / Order unconditionally and sign contract.
 - To furnish contract performance bond as per standard proforma.
- (12) **Specification of Work:** The work should conform to WBSEDCL's general conditions of contract, standard specifications, and approved drawings of WBSEDCL satisfying relevant provisions of I.E. rules and IS.
- (13) **Completion of work:**
- (i) The materials shall have to be delivered within 60 days from the date of issuance of order / date of approval of GTP & drawing by competent authority of WBSEDCL, whichever is later.
 - (ii) Dispatch clearance will be issued to the contractor after inspection and testing of materials, if desired by WBSEDCL. The prospective bidder shall submit factory test certificate at the time of testing.
 - (iii) E-way bill if required shall be generated by the contractor as per prevailing norms and the same are to be submitted to the controlling officer of this work in due course.
 - (iv) The materials shall be delivered at Habra Divisional Store, WBSEDCL or site as will be communicated by the controlling officer during issuance of dispatch instruction.
- (14) **Inspection & Testing:**
- (i) WBSEDCL may depute engineer at his own cost to inspect the materials before dispatch.
 - (ii) The supplier shall arrange and provide all necessary facilities along with necessary manpower for inspection and testing at his own cost. The testing equipment must have valid calibration certificate and the same shall be produced on demand.
 - (iii) The supplier shall inform 15 (fifteen) days in advance regarding readiness of the materials for inspection.
 - (iv) The rejected materials shall have to be replaced by the contractor and subject to re-inspection.
 - (v) The supplier shall bear full cost of re-inspection.
 - (vi) Materials shall be dispatched after issuance of dispatch instruction (DI) by the purchaser.
- (15) **Payment:** 100 (hundred) % of the ordered value along with full taxes and duties shall be paid after delivery of materials and submission of Tax Invoice, challan in triplicate to the controlling officer for processing of payment.
- (16) **Liquidated damage for delay in delivery:** The time of delivery (successful offer for inspection) of the equipment/materials are to be treated as an essence of the contract and the WBSEDCL reserves the right to repudiate the contract, if the equipment / materials are not physically delivered within stipulated period as per physical delivery clause. But WBSEDCL may at his discretion waive this condition and accept the material with imposition of liquidated damage @ 1/2% of the Value of the materials beyond the schedule delivery period for each week of delay subject to **maximum of 5% of the particular lot and accept the goods beyond the stipulated period.**

- (17) Any further information along with WBSEDCL's Revised Purchase Policy may be obtained from the website *www.wbsedcl.in*.
- (18) **Right to reject Bids:** WBSEDCL reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of the Order, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders the reason for WBSEDCL's action.
- (19) **Controlling Officer:** The **Divisional Manager, Habra Division**, WBSEDCL shall act as Controlling Officer.
- (20) **Supervising Officer:** The **Divisional Engineer (Technical), Habra Division**, WBSEDCL shall act as Supervising Officer & Site-in-Charge.
- (21) **Paying Authority:** The **Assistant Manager (F&A), Habra Division**, WBSEDCL shall be the Paying Authority.
- (22) **Consignee:** The **Store-in-Charge, Habra Division**, WBSEDCL shall act as the consignee.
- (23) Work Order & Payment of work will depend on availability of fund. Intending bidders may consider this criteria while submission of tender and quoting their rate through online.
- (24) No Conditional Bid / Incomplete Tender will be accepted under any circumstances.
- (25) At any stage during scrutiny, if it is found that the credential or any other papers which the Bidder uploaded during Bidding process is/are incorrect / manufactured / fabricated / misleading, that bid will be considered as nonresponsive and outright rejected with forfeiture of Earnest Money Deposit and action will be taken as per stipulations of Information Technology Act & Rules and other admissible law, as in force.
- (26) Before issuance of Letter of Acceptance / Work order, the tender accepting authority may verify the credential & other documents of the lowest bidder so uploaded online if found necessary. If it is found such document incorrect / manufactured / fabricated, Letter of Acceptance / Work order will not be issued in favor of the bidder under any circumstances and action will be taken accordingly. If any bidder fails to produce the original hard copies of the document like Successful Completion Certificate and any other documents on demand of the department within a specified time frame or if any deviation is detected in the original copies from the uploaded soft copies, it may be treated as submission of false documents by the bidder and action may be referred to the appropriate authority for prosecution as per relevant IT Act.
- (27) The Tender Inviting Authority reserves the right to cancel the NIT due to unavoidable circumstances and no claim in this respect will be entertained.
- (28) The WBSEDCL shall not bind itself to accept the lowest tender and reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the Award of Contract without thereby incurring any liability to the affected bidder or bidders or any obligation

to inform the affected bidder or bidders of the ground for WBSEDCL (Tender Accepting Authority)'s action.

- (29) Canvassing in connection with tenders is strictly prohibited and the tenders submitted by the contractors, who resort to canvassing will be liable to rejection. Any evidence of unfair trade practices, including overcharging, price fixing, cartelization etc. as defined in various statutes, will automatically disqualify the parties. Evidence of repeated occurrence of such malpractices by any bidder shall be viewed seriously by the WBSEDCL authority and appropriate penal measures shall be imposed on such bidders which may include blacklisting.
- (30) **LOSS AND DAMAGE OF MATERIALS:** The supplier shall be responsible for safe custody of all materials until it is officially taken over by the Company. For any loss including theft / pilferage / damage during the period of transportation, storage etc., the same shall be made good by the supplier at his own cost and arrangement.
- (31) **Insurance:** The successful bidder on awarding of contract shall arrange, secure and maintain all insurance as may be pertinent to the work and obligatory in terms of law to protect the interests of WBSEDCL against all perils. The form & the limit of such insurance together with underwriting in each case shall be acceptable to WBSEDCL. However, irrespective of such acceptance the responsibility to maintain adequate insurance coverage at all times during the period of contract shall be bidder's alone.
- (32) **Bidder should provide the rates for items in the BOQ without GST. Applicable GST will be paid in extra.**
- (33) **Award of Contract:** The bidder whose bid has been accepted will be notified by the Tender Inviting & Accepting Authority through Acknowledgement Letter / Letter of Acceptance. The notification of award will constitute the formation of the contract.
- (34) **Holiday Listing and Vendor Rating:** Holiday Listing & Vendor Rating will be applicable according to the "Holiday Listing & Vendor Rating" policies of the Revised Purchase Policy, which is posted in website of WBSEDCL (www.wbsedcl.in). Performance of the bidders, who supplied materials/equipment to WBSEDCL previously, will be evaluated for their Vendor Rating according to the said Vendor Rating policy and their Vendor Rating will be taken into consideration at the time of evaluation of Technical and Financial Proposals of the tender.
- (35) **Concession:** No price preference will be allowed to any tenderer based on the size of the industry or its geographic location. Co-operative Society, will not be considered with separate status.
- (36) **Additional Performance Security:** If the lowest bidder's bid is found to be within the range of -20% to -80% of the estimated value, the bidder shall have to furnish an Additional Performance Security amounting to 10% of the tendered amount (proforma of bank guarantee enclosed for reference marked 'Annexure – A'. The Additional Performance Security shall be submitted in the form of Bank Guarantee from any scheduled bank before issuance of Work Order. The Additional Performance Security shall have validity for entire defect liability period and with a claim period of another 3

(three) months. The bidder shall not claim any interest on Additional Performance Security. Additional Performance Security may be extended or revised as per the request of purchaser.

(37) **Miscellaneous:**

- (i) For timely completion of the work the contractor must have to deploy all necessary equipment, tools & tackles and machineries, adequate shuttering to execute the work at a time to perform all works simultaneously as per requirement of WBSEDCL.
- (ii) The entire work shall be inspected by WBSEDCL representative from time to time at site as necessary. The supplier shall provide all facilities for such inspection free of cost. Notwithstanding any inspection of the site, WBSEDCL shall have the right to reject any work not conforming to the specification without being liable for any explanation or compensation. The authorized representative of WBSEDCL shall have free access to the work site, contractor site office and store.
- (iii) During the execution of the work, if any, problem arises which is not covered by the specifications, the supplier shall seek necessary clarification and instruction from WBSEDCL. Such instruction shall be binding on the supplier and shall be observed in full.
- (iv) The supplier shall make his own arrangement for the labor, construction, equipment, tools and tackles and construction materials.
- (v) The supplier shall strictly follow the safety rules, regulations and instructions issued from time to time. In absence of any particular reference the supplier shall refer to the Indian Standard and also the State Government rules and regulations.
- (vi) All guarantees and test certificates obtained by the supplier for the products and components shall be transferred to the WBSEDCL before issue of the final payment.
- (vii) The cost of testing of any material shall be borne by the supplier.
- (viii) No omission or ambiguities in the drawing or in the specifications will relieve the contractor from responsibility for material or completeness of the work.
- (ix) All drawings supplied with the bid documents are for guidance only.

SECTION – A

INSTRUCTION TO BIDDERS

General Guidelines for e-Tendering

Instructions / Guidelines for electronic submission of the tenders online have been annexed for assisting the contractors to participate in e-Tendering.

1. Registration of Contractor:

Any intending bidder willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system, through logging on to <https://wbtennders.gov.in> (the web portal). The contractor shall click on the link for e-Tendering site as given on the web portal.

2. Digital Signature certificate (DSC):

Every intending bidder is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders, from the approved service provider of the National Information's Centre (NIC) on payment of requisite amount. Details are available in the website. DSC is given as a USB e-Token.

3. The intending bidder can search & download the Notice Inviting Tender (NIT) and tender documents electronically from the website, once he logs on using his Digital Signature Certificate. This is the only mode of collection of tender documents.

4. Submission of Tenders:

Tenders are to be submitted in online mode in the website in two folders at a time for each work, one as Technical Proposal & the other as Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents are to be uploaded (virus free scanned copy) duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

In order to avoid any problem arising out of network error or server error, bidders are advised to submit the bid, well in advance of the last date and time of submission of the bid. WBSEDCL shall not be held responsible for any failure of Bid submission due to snag arising out of network failure.

5. Opening and evaluation of tender:

5.1 Opening of Technical Proposal

- i. Technical proposals will be opened by the Tender Inviting Authority or his authorized representative electronically from the website stated above, using their Digital Signature Certificate.
- ii. Technical proposals for those tenders where EMD have been received within due date will only be opened. Proposals corresponding to which EMD has not been received, will not be opened and will stand rejected.
- iii. Intending bidders may remain present, if they so desire.

- iv. Cover (folder) for statutory documents will be opened first and if found in order, cover (folder) for non-statutory Documents will be opened. If there is any deficiency in the statutory documents, the tender will summarily be rejected.
- v. Decrypted (transformed into readable formats) documents of the statutory and non-statutory covers will be downloaded for the purpose of evaluation.

5.2. Techno-commercial Evaluation of Tender

- (i) During evaluation, the Tender Inviting Authority or his authorized representative may summon the bidders and seek clarification / information or additional documents or original hard copy of any of the documents already submitted and if those cannot be produced within the stipulated timeframe, their proposals will be liable for rejection.
- (ii) The summary list of bidders, whose bids will be found techno-commercially eligible, will be uploaded in the web portals. Date of opening of financial bid will be intimated to the Techno-commercially qualified bidders.

5.3. Opening and evaluation of Financial Proposal

- (i) Financial proposals of the bidders declared techno-commercially eligible, will be opened electronically by the Tender Inviting Authority from the web portal stated above on the mentioned date.
- (ii) The encrypted copies will be decrypted and the rates will be read out to the bidders remaining present at that time.
- (iii) After opening of the financial proposal the preliminary summary result containing *inter alia*, the name of bidders and the rates quoted by them will be uploaded.
- (iv) The Tender Accepting Authority may ask any of the bidders to submit analysis to justify the rate quoted by that bidder.

6. Revision / withdrawal of Financial Proposal by the bidder after opening of Technical Proposal of the tender will not be allowed if it is not sought by the Tender Inviting Authority.

Enclosure:

- (1) Annexure - A
- (2) Technical specifications

Regional Manager
North 24 Parganas Region
WBSEDCL

Annexure - A

FORMAT OF THE BANK GUARANTEE FOR ADDITIONAL PERFORMANCE SECURITY DEPOSIT

.....(Designation of Engineer-in-Charge)
 (Office address of Engineer-in-Charge)

WHEREAS (name and address of Contractor) (hereafter called "the Contractor") has undertaken, in pursuance of Contract No.
Dated **to** (name of Contract and brief description of Works (hereinafter called "the Contract")).
execute (name of Contract and brief description of Works (hereinafter called "the Contract")).

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a Scheduled Commercial Bank for the sum specified therein for 'ADDITIONAL PERFORMANCE SECURITY DEPOSIT' for compliance with his obligation in accordance with the Contract;

NOW WHEREAS we (indicate the name of the bank and branch) have agreed to give the Contractor such a Bank Guarantee.

NOW THEREFORE we (indicate the name of the bank & branch) hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, upto a total of Rs.(amount of guarantee in words). We undertake to pay you, upon your first written demand and without cavil of argument, a sum within the limits of

..... (amount of guarantee) as aforesaid 'without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We (indicate the name of the bank and branch) hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We (indicate the name of the bank and branch) further agree to pay to you any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal.....the present absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

We (indicate the name of the bank and branch) further agree that no change or addition to or other modification of the terms of the Contract or of the works to be performed there under or of any if the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

We (indicate the name of the bank and branch) lastly undertake not to revoke this guarantee except with the previous consent of you in writing.

This Guarantee shall be valid upto.....It come into force with immediate effect and shall remain in force and valid for a period upto the time of completion of the work under the stated contract plus claim period of Six months for the Bank Guarantee. Notwithstanding anything mentioned above our liability against this guarantee is restricted to Rs.....(Rupees.....) and unless a claim in writing is lodged with us within the validity period i.e. upto.of this guarantee all our liabilities under this guarantee shall cease to exist.
 Signed and sealed this day of
2021. at

by:

SIGNED, SEALED AND DELIVERED

For and on behalf of the BANK

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES: (1) The bank guarantee should contain the name designation and code number of the officer(s) signing the guarantee

The address, telephone number and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

TECHNICAL SPECIFICATION FOR

OUTDOOR TYPE DISTRIBUTION

FEEDER PILLAR BOX

1. Scope:

This specification covers technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at store/site and performance of pillar box with all accessories for trouble free and efficient operation. This outdoor pillar box will be utilised for providing/interconnecting MV AC distribution network.

2. Applicable Standards:

The equipment covered with latest editions of the following standards/IEC:

- a) **IS 5039-1983:** Specification for distribution pillars for voltages not exceeding 1000V AC & 1200V DC.
- b) **IS 13703 (Part-1&2)-1993 / IEC 60263/1-1986:** Specification for LV fuses for voltage not exceeding 1000V AC & 1500V DC.
- c) **IS 12063-1987 / IEC 60529:** Classification of degree of protection provided by enclosure of electrical equipment.
- d) **IS 13947 (Part-1) / IEC 60947/1-1988:** Specification for LV switchgear & controlgear.
- e) **IS 8623 (Part-2)-1993 / IEC 60439/2-1987:** Specification for LV switchgear & control gear assemblies – particular requirements for Busbar trunking system.
- f) **IS 2551-1982:** Danger Notice Plates.
- g) **IEC 60664:** Insulation co-ordination within low voltage systems including clearance creepage distances for equipment.
- h) **IS 2147:** Enclosure & Degree of protection of the Pillar Box
- i) **IS 6005:** Code of Practice for phosphating iron and steel
- j) **IEC 60269 :** HRC Fuses

3. Climatic Conditions of the Installation:

- a) Max. Ambient Temperature : 42 deg. C
- b) Min. Ambient Temperature : 10 deg. C
- c) Max. Humidity : 98%
- d) Min. Humidity : 60%

- e) Average Annual Rainfall : 2500 mm
f) Average No. of rainy days per annum : 150 days
g) Altitude above MSL : 9 metres
h) Average wind velocity : 18 km/hr.

4. General Technical Requirement:

Sl. No.	Description	Requirement
1.	Installation	Outdoor
2.	Rated Voltage	430V
3.	No. of Phases	3
4.	Frequency	50 Hz
5.	Wiring System	3 Phase 4 Wire
6.	System Earthing	Solid at source end.
7.	Impulse withstand voltage	8 kV
8.	Rated short time fault current	50 kA for 1 sec.
9.	Busbar Material	EC Grade Aluminium (75 X 12) mm dimension. R,Y,B,N colour coded with heat shrinkable sleeves
	6 way (2 I/C + 4 O/G)	
10.	Max. current density of Al Busbar	1 Amp/sqmm
11.	Degree of Protection	IP-43 (As per IS: 2147)
12.	Temperature Rise	Max. permissible temperature rise for the Busbar and terminal should be 45°C & 65°C respectively at ambient temperature not exceeding 42°C
13.	No. of Incoming unit with solid link	2
14.	No. of Outgoing unit with fuse link	4 for 6 Way
15.	Type of Incoming Fuse-Link / Fuse Base	Knife type Solid Links with tinned copper contacts & fuse base with high stability glass fibre reinforced thermosetting polyester.
16.	Type of Outgoing Fuse-Link / Fuse Base	Knife type DIN HRC Fuses with tinned copper contacts & fuse base with high stability glass fibre reinforced thermosetting polyester.
17.	Type of Incoming Solid-Link / Base	Knife type solid link with tinned copper contacts & base with high stability glass fibre reinforced thermosetting polyester.
18.	Fuse Base Rating & Size	630 Amps (Size-3)
	6 way	
19.	DIN HRC fuse Rating & Size	630 Amps (Size-3) / 400 Amps (Size-3) depending upon site selection.

20.	Current rating of Busbar	
	6 way (2 I/C + 4 O/G)	900 Amps
21.	Busbar spacing (centre to centre)	185 mm
22.	Neutral Busbar rating	
	6 way (2 I/C + 4 O/G)	900 Amps
23.	Size of Incoming Cables	4C x 300 sqmm.
24.	Size of Outgoing Cables	4C x 300 sqmm.
25.	Pillar box dimension	1400 (H) x 1200 (W) x 450 (D) mm.
	6 way (2 I/C + 4 O/G)	
26.	PB Leg dimension	700 mm X 4 (made of 75X75X 6 mm angle iron)
27.	Enclosure material	Cold rolled steel of 3.15 mm thickness
28.	Colour of enclosure	Light Grey 631 of IS:5
29.	Cable entry & exit arrangement	
(a)	For Incoming	Neoprene rubber grommet at bottom
(b)	For Outgoing	Neoprene rubber grommet at bottom
30.	Gland Plate (Minimum)	3.15 mm thick Gland Plate, detachable and split into 2 halves & connected by earthing

NB.: Suitable **Correction factor and Diversity factor as per requirement of IEC/EN 61439-2** are to be followed during designing the assembly within the PB enclosure.

5. General Construction:

- a) The design and layout of pillar box shall be compact and convenient to provide ease of termination of cables and operation of fuse bases. It shall be designed for termination of cables and operation of fuse base shall be from the front end. The Feeder Pillar enclosure shall provide a degree of protection not less than IP-43 in accordance with IS-2147.
- b) The enclosure shall be suitable for Outdoor installation. The enclosure shall be made from cold rolled sheet steel of thickness 3.15 mm and shall be suitable to withstand rough usage and weather.
- c) **Panels shall be rigid free standing & floor mounting type and comprise of structural frames enclosed completely with specially selected smooth finished cold rolled sheet steel of thickness not less than 3.15 mm for weight bearing members of the panels such as front sheet and door frames, sides, door top and bottom portions. The Angle structure for Leg 75x75x6mm.**

- d) All joints to be made flush type and all edges shall be bent at right angles and rounded. All structural members shall be bolted or welded together. Necessary arrangement shall be provided for bolting together the adjacent panels. The doors, removable covers and panels shall be sealed with gasket all round with neoprene gaskets. Ventilating louvers if provided shall have screens and filters. **The panels shall be designed for reception of external control cables (if any) from the bottom and shall have detachable gland plates split in two halves. Cable gland plate, fitted on the bottom of panel shall be connected to earthing of panel.**
- e) The enclosure shall be sized to facilitate easy maintenance at minimum height of 300 mm above FFL.
- f) The top of pillar shall be fitted with a sloping canopy, the design of which shall be such that rain water shall not accumulate on the top.
- g) It shall have overhang and fascia of min. 100mm. 2 nos. lifting lugs of same material shall be provided.
- h) Three nos. heavy duty hinges shall be provided for each door such that they are not visible from outside and hence not removable. The hinge shall be of such construction that the door can be swung open by not less than 150°. The door shall be fitted with integral handle, flushed with the surface of the door.
- i) Air ventilation arrangement shall be provided at top and all sides of the enclosure to facilitate air circulation.
- j) The door shall have three point locking arrangement. Special type tamperproof heavy duty built-in inter-lock with appropriate key shall be provided. Locking system with handle up & down arrangement shall be provided on front side of the doors. The door shall be provided with pad-locking facility also.
- k) The Pillar shall be provided with removable split type base plate fitted with rubber grommets for cable entry to facilitate cable jointing.
- l) Proper support shall be provided for holding I/C & O/G cables. These, cable support arrangement shall be provided to take the load of the cable.
- m) The Busbar of all phases and neutral shall be provided with colour coded heat shrinkable insulation sleeves. Phase barriers shall be provided between the Busbars and all Busbars shall be in two equal sections with removable link.
- n) Cable termination arrangement shall be from bottom and suitable for external cables of type and sizes as mentioned in the specification. Additional arrangement shall be provided with busbar for terminating cable for DG Set in emergency. The pillar shall also be provided with removable split type side plate to facilitate cable entry and termination for this purpose.
- o) The pillar box shall be provided with a LED lamp rated for 230V, 1 Phase, 50 Hz supply for illumination inside the enclosure. A 230V, 1phase, 50 Hz, 5/15 Amps, 5 pin receptacle with switch shall be provided inside the enclosure at a convenient location.
- p) The design of pillar box shall ensure there is no possibility of the operator experiencing a

shock during normal operation. Insulated barriers shall be provided wherever necessary so as to ensure that no accidental contact with live parts inside the pillar box is possible.

- q) The Pillar box shall be provided with an Aluminium Earth bus at the bottom, suitable for the rated short time current of the pillar. The earth bus shall provide Earthing to all the components inside the pillar and the metallic enclosure including the armour of the cables.
- The earth bus shall be internally connected to two separate earth terminals located outside, on either side of the pillar. The Busbar shall not be visible or removable from the outside of the cubicle. Door Earthing shall also be provided with bolted lugs at both ends. The neutral shall be insulated from the earth.
- r) The paint on the pillar box shall have good colour retention properties and shall be weather and UV resistant. The Retro reflective paint strip shall be provided on the four faces of the pillar box which shall withstand the temperature conditions and reflect vehicular light at night time providing safety to traffic. All sheet steelwork shall be phosphated in accordance with IS: 6005 "Code of practice for phosphating iron and steel". Oil, grease, dirt and swart shall be thoroughly removed by emulsion cleaning. Rust and scale shall be removed by pickling with dilute acid followed by washing with running water rinsing with slightly alkaline hot water and drying. After phosphating, thorough rinsing to be carried out with clean water followed by final rinsing with diluter dichromate solution. After that the powder spray with spray gun to be used and to put into the oven for drying in 200deg.C. for 40min
- s) The pillar box shall be provided with durable and legible Aluminium nameplates containing all technical parameters and manufacturing details. A plate of statutory instruction like 'stick no bill' shall be provided on all four side of the pillar box. The pillar box shall be provided with a plate 'Danger' mark for 430V AC as per IS 2551-1982. Property plate mentioning "Property of WBSEDCL" and Project Name, P.O. No. etc. shall also be provided.
- t) All routine, acceptable & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the Purchaser/his authorized representative.
- u) Equipment shall be subject to pre-dispatch inspection by a duly authorized representative of the Purchaser. Inspection may be made at any stage of manufacture at discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection.
- v) The material received at Purchaser store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection.
- w) Supplier shall stand guarantee for five years from the date of supply towards design, materials, workmanship and quality of process/manufacturing of items under this contract.
- x) Supplier shall ensure that all the equipment covered under this specification shall be prepared for transport in a manner so as to protect the equipment from damage in transit.
- y) Supplier shall submit with the offer Quality assurance plan indicating the various stage of

inspection, the tests and checks which will be carried out on the material of construction, components during manufacturing and equipment after finishing.

- z) Supplier shall provide Instruction Manuals covering erection & maintenance instruction and all relevant information & drawings with complete BOM pertaining to main equipment and also list of complete set of accessories and tools required for erection and maintenance with each of the pillar boxes.

6. Special Requirement:

- a) Fuse blown indication with LED for Easy identification for the operations which phase fuse has blown, saving time and operation of different poles.
- b) Mechanism of Fuse removal without touching fuse so that there is no need to touch blown fuse which is quite hot.
- c) Stainless steel spring material at contacts so that material corrosion is avoided and also losses/temperature at contacts are reduced.
- d) Wider Spacing at terminals for connecting cable so that it is easy for operators to connect /disconnect cables.

7. TESTS:

7.1 TYPE TESTS: ON COMPLETE PILLER BOX:

The equipment offered in the tender should have been successfully type tested at NABL laboratories in India or equivalent international laboratories in line with the relevant standard and technical specification, within the last 5 (five) years from the date of offer. The bidder shall be required to submit complete set of the type test reports along with the offer.

Following type tests as per IS: 5039/1983 shall be carried out on complete L.T. feeder Pillars.

- 1. Temperature rise test:-The temperature rise test should be carried out as per IS: 8623 –1993.
- 2. High voltage test shall be carried out as per IS: 8623/ 1993 amended up to date.
- 3. Short Time Withstand Current Test on L.T. Pillar shall be carried out as per IS 8623: or latest version.
- 4. Degree of protection for IP- 43 on complete L.T. Pillar shall be carried out as per IS: 13947/1993 or the latest version thereof.
- 5. Verification of clearance & creepage distances.

7.2 ACCEPTANCE TEST: ON COMPLETE PILLER BOX:

Following tests shall be carried out as per acceptance tests in addition to routine tests on one random sample of each rating out of the lot offered for inspection:

- i) Temperature rise test on one sample of each rating.

7.3 ROUTINE TESTS: ON COMPLETE PILLER BOX

- a) Routine and acceptance tests as per relevant IS shall be carried out at the manufacturers' works.
- b) Overall Dimensions Checking.
- c) Insulation Resistance Tests.
- d) High Voltage Test at 2500 V, 50 Hz AC for one minute.

8. INSPECTION:

- 8.1. The supplier shall prepare a prototype and offer the same for inspection and approval before taking up mass production.
- 8.2. All routine & acceptance tests and inspection of material shall be carried out at the place of manufacturer. The manufacturer shall offer the Inspector (representing the purchaser) all reasonable facilities, free of charge at the time of Inspection.
- 8.3. The supplier shall offer inspection of the material at his works before dispatch. If required the supplier shall also offer inspection of manufacturing painting and assembly processes and quality control system. If any material is not found in line with relevant specification the supplier shall carry out the modification and offer for re-inspection.
- 8.4. Inspection and acceptance shall not absolve the supplier of his responsibility to supply the material in accordance with the specifications.
- 8.5. The purchaser reserves the right to reject the material not confirming with the relevant specifications.

9. DRAWINGS AND DOCUMENTATION:

- a. The successful bidder shall submit set of all drawings of the L.T. Pillar Boxes and its components in triplicate and get the same approved before commencement of production.
- b. The tenderer shall furnish all details and clarifications required if any for scrutiny and evaluation of the offer.
- c. Manufacture of material to be supplied shall be done strictly as per approved drawing.
- d. Approval of drawing shall not absolve the supplier of his liability for ensuring correctness according to applicable standards & regulations.

10. DESPATCH:

- 10.1 The material to be supplied shall be packed and dispatched only after inspection and approval.
- 10.2 Supplier shall be responsible for packing, transporting and delivery to the consignee at anywhere of West Bengal.
- 10.3 Copies of packing list and inspection report duly approved shall be sent along with each consignment.

TECHNICAL SPECIFICATION FOR OUTDOOR TYPE DISTRIBUTION SERVICE JUNCTION BOX

1. Scope:

This specification covers technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at store/site and performance of Service junction box with all accessories for trouble free and efficient operation. This outdoor Service junction box will be utilised for providing / interconnecting service main of distribution network.

2. Applicable Standards:

The equipment covered with latest editions of the following standards/IEC:

- a) **IS 5039-1983:** Specification for distribution pillars for voltages not exceeding 1000V AC & 1200V DC.
- b) **IS 13703 (Part-1&2)-1993 / IEC 60263/1-1986:** Specification for LV fuses for voltage not exceeding 1000V AC & 1500V DC.
- c) **IS 12063-1987 / IEC 60529:** Classification of degree of protection provided by enclosure of electrical equipment.
- d) **IS 2551-1982:** Danger Notice Plates.
- e) **IEC 60664:** Insulation co-ordination within low voltage systems including clearance creepage distances for equipment.
- f) **IS 2147:** Enclosure & Degree of protection of the Plot & Service junction box
- g) **IS 6005:** Code of Practice for phosphating iron and steel

3. Climatic Conditions of the Installation:

- | | |
|--|-------------|
| a) Max. Ambient Temperature | : 42 deg. C |
| b) Min. Ambient Temperature | : 10 deg. C |
| c) Max. Humidity | : 98% |
| d) Min. Humidity | : 60% |
| e) Average Annual Rainfall | : 2500 mm |
| f) Average No. of rainy days per annum | : 150 days |
| g) Altitude above MSL | : 9 metres |
| h) Average wind velocity | : 18 km/hr. |

4. General Technical Requirement:

Sl. No.	Description	Service Junction Box
1.	Installation	Outdoor
2.	Rated Voltage	430V
3.	No. of Phases	3
4.	Frequency	50 Hz
5.	Wiring System	3 Phase 4 Wire
6.	System Earthing	Solid at source end.
7.	Current Rating (A)	400 A
8.	Dimension(H x W x D)	To be specified by vendor
9.	Busbar Material/Size	
	Phase (3 Nos)	EC Grade Aluminium (50mm x 8 mm)
	Neutral (1 No)	EC Grade Aluminium (50mm x 8 mm)
10.	Max. current density of Al Busbar	1 Amp/sqmm.
11.	Degree of Protection	IP-43
12.	Temperature Rise	Max. permissible temperaturerise for the Busbar and terminal should be 45°C & 65°C respectively at ambient not exceeding 42°C
13.	No. of Incoming	2
14.	No. of Outgoing	9 Nos. (300A cut-out) for 3-phase connection (3 Numbers consumer)
15.	Fuse Base Rating & Size	400 A
16.	Current rating of Busbar	400A
17.	Busbar spacing (centre to centre)	185 mm (Min.)
18.	Neutral Busbar rating	400A
19.	Size of Incoming Cables	1 x 4C x 300sqmm.

20.	Size of Outgoing Cables	1 x 4C x 185 sqmm
21.	Box Leg dimension	To be specified by vendor.
22.	Enclosure material	Cold rolled steel of 2.5 mm thickness
23.	Colour of enclosure	Light Grey 631 of IS:5
24.	Cable Entry/Cable Gland	Bottom /3 mm Cable Gland

5. General Construction:

- a) The design and layout of Service junction box shall be compact and convenient to provide ease of termination of cables and operation of fuse bases. It shall be designed for termination of cables and operation of fuse base shall be from the front end. The Service junction box enclosure shall provide a degree of protection not less than IP-43 in accordance with IS-2147.
- b) The enclosure shall be suitable for Outdoor installation. The enclosure shall be made from cold rolled sheet steel of thickness 2.5 mm and shall be suitable to withstand rough usage and weather.
- c) Box shall be rigid free standing and floor mounting type and comprise of structural frames enclosed completely with specially selected smooth finished cold rolled sheet steel of thickness not less than 2.5 mm for weight bearing members of the panels such as front sheet and door frames, sides, door top and bottom portions.
- d) All joints to be made flush type and all edges shall be bent at right angles and rounded. All structural members shall be bolted or welded together. Necessary arrangement shall be provided for bolting together the adjacent panels. The doors, removable covers and panels shall be sealed with gasket all round with neoprene gaskets. Ventilating louvers shall be provided at both sides & shall have screens and filters.
- e) The top of pillar shall be fitted with a sloping canopy, the design of which shall be such that rain water shall not accumulate on the top.
- f) It shall have overhang and fascia of min. 100mm. 2 nos. lifting lugs of same material shall be provided.
- g) Three nos. heavy duty hinges shall be provided for each door such that they are not visible from outside and hence not removable. The hinge shall be of such construction that the door can be swung open by not less than 150°. The door shall be fitted with integral handle, flushed with the surface of the door.

- h) Air ventilation arrangement shall be provided at top and all sides of the enclosure to facilitate air circulation.
- i) The door shall have three point locking arrangement. Special type tamperproof heavy duty built-in inter-lock with appropriate key shall be provided. Locking system with handle up & down arrangement shall be provided on front side of the doors. The door shall be provided with pad-locking facility also.
- j) Proper support shall be provided for holding I/C & O/G cables. These cable support arrangement shall be provided to take the load of the cable.**
- k) The Busbar of all phases and neutral shall be provided with colour coded heat shrinkable insulation sleeves.**
- l) Cable termination arrangement shall be from bottom and suitable for external cables of type and sizes as mentioned in the specification.
- m) The box shall be provided with an Aluminium Earth bus at the bottom, suitable for the rated short time current of the box. The earth bus shall provide Earthing to all the components inside the pillar and the metallic enclosure including the armour of the cables. The earth bus shall be internally connected to two separate earth terminals located outside, on either side of the Box.
- n) The paint on the Service Junction box shall have good colour retention properties and shall be weather and UV resistant. The Retro reflective paint strip shall be provided on the four faces of the pillar box which shall withstand the temperature conditions and reflect vehicular light at night time providing safety to traffic. All sheet steelwork shall be phosphated in accordance with IS: 6005 "Code of practice for phosphating iron and steel". Oil, grease, dirt and swart shall be thoroughly removed by emulsion cleaning. Rust and scale shall be removed by pickling with dilute acid followed by washing with running water rinsing with slightly alkaline hot water and drying. After phosphating, thorough rinsing to be carried out with clean water followed by final rinsing with diluter dichromate solution. After that the powder spray with spray gun to be used and to put into the oven for drying in 200deg.C. for 40min
- o) The Service Junction box shall be provided with durable and legible Aluminium nameplates containing all technical parameters and manufacturing details. The box shall be provided with a plate 'Danger' mark for 430V AC as per IS 2551-1982. Property plate mentioning "Property of WBSEDCL" and project name if any shall also be provided.
- p) All routine, acceptable & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the Purchaser/his authorized representative.
- q) Equipment shall be subject to pre-dispatch inspection by a duly authorized representative of the Purchaser. Inspection may be made at any stage of manufacture at discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection.

- r) The material received at Purchaser store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection.
- s) Supplier shall stand guarantee for five years from the date of supply towards design, materials, workmanship and quality of process/manufacturing of items under this contract.
- t) Supplier shall ensure that all the equipment covered under this specification shall be prepared for transport in a manner so as to protect the equipment from damage in transit.
- u) Supplier shall submit with the offer Quality assurance plan indicating the various stage of inspection, the tests and checks which will be carried out on the material of construction, components during manufacturing and equipment after finishing.
- v) 6 nos. holes of suitable size shall be drilled on the busbar / phase of the Service Junction boxes.
- w) Holes for cable entry at bottom shall be as follows:

SERVICE JB FOR THREE (3) PHASE CONNECTION	3 nos. suitable size for 4C X 185 sqmm XLPE cable
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6. Special Requirement:

Wider Spacing at terminals for connecting cable so that it is easy for operators to connect /disconnect cables.

7. TESTS:

7.1 TYPE TESTS: ON COMPLETE SERVICE JUNCTION BOX

The equipment offered in the tender should have been successfully type tested at NABL accredited laboratories in India or equivalent international laboratories in line with the relevant standard and technical specification, within the last 5 (five) years from the date of offer. The bidder shall be required to submit complete set of the type test reports along with the offer.

Following type tests as per IS: 5039/1983 shall be carried out on complete L.T. Service junctionBox.

1. Temperature rise test:-The temperature rise test should be carried out as per IS: 8623 –1993.
2. High voltage test shall be carried out as per IS: 8623/ 1993 amended up to date.
3. Short Time Withstand Current Test on L.T. Service junction Box shall be carried out as per IS8623: or latest version.
4. Degree of protection for IP- 43 on complete L.T. Service junction Box shall be carried out as per IS: 13947/1993 or the latest version thereof.
5. Verification of clearance & creepage distances.

7.2 ACCEPTANCE TEST:ON COMPLETE SERVICE JUNCTION BOX

Following tests shall be carried out as per acceptance tests in addition to routine tests on one random sample of each rating out of the lot offered for inspection:

- i) Temperature rise test on one sample of each rating.

7.3 ROUTINE TESTS: ON COMPLETE SERVICE JUNCTION BOX

- a) Routine and acceptance tests as per relevant IS shall be carried out at the manufacturers' works.
- b) Overall Dimensions Checking.
- c) Insulation Resistance Tests.
- d) High Voltage Test at 2500 V, 50 Hz AC for one minute.

8. INSPECTION:

- 8.1. The supplier shall prepare a prototype and offer the same for inspection and approval before taking up mass production.
- 8.2. All routine & acceptance tests and inspection of material shall be carried out at the place of manufacturer. The manufacturer shall offer the Inspector (representing the purchaser) all reasonable facilities, free of charge at the time of Inspection.
- 8.3. The supplier shall offer inspection of the material at his works before dispatch. If required the supplier shall also offer inspection of manufacturing painting and assembly processes and quality control system. If any material is not found in line with relevant specification the supplier shall carry out the modification and offer for re-inspection.
- 8.4. Inspection and acceptance shall not absolve the supplier of his responsibility to supply the material in accordance with the specifications. The purchaser reserves the right to reject the material not confirming the relevant specifications.

9. DRAWINGS AND DOCUMENTATION:

- a. The successful bidder shall submit set of all drawings of the Service junction Boxes and its components in triplicate and get the same approved before commencement of production.
- b. The tenderer shall furnish all details and clarifications required if any for scrutiny and evaluation of the offer.
- c. Manufacture of material to be supplied shall be done strictly as per approved drawing.
- d. Approval of drawing shall not absolve the supplier of his liability for ensuring correctness according to applicable standards & regulations.

10. DESPATCH:

- 10.1 The material to be supplied shall be packed and dispatched only after inspection and approval.
- 10.2 Supplier shall be responsible for packing, transporting and delivery to the consignee at anywhere of West Bengal.
- 10.3 Copies of packing list and inspection report duly approved shall be sent along with each consignment

TECHNICAL SPECIFICATION FOR **OUTDOOR TYPE DISTRIBUTION** **SERVICE JUNCTION BOX** **FOR STREET LIGHT**

1. Scope:

This specification covers technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and unloading at store/site and performance of Plot & Service junction box with all accessories for trouble free and efficient operation. This outdoor Service junction box will be utilised for providing / interconnecting service main of distribution network for street lights.

2. Applicable Standards:

The equipment covered with latest editions of the following standards/IEC:

- a) **IS 5039-1983:** Specification for distribution pillars for voltages not exceeding 1000V AC & 1200V DC.
- b) **IS 13703 (Part-1&2)-1993 / IEC 60263/1-1986:** Specification for LV fuses for voltage not exceeding 1000V AC & 1500V DC.
- c) **IS 12063-1987 / IEC 60529:** Classification of degree of protection provided by enclosure of electrical equipment.
- d) **IS 2551-1982:** Danger Notice Plates.
- e) **IEC 60664:** Insulation co-ordination within low voltage systems including clearance creepage distances for equipment.
- f) **IS 2147:** Enclosure & Degree of protection of the Plot & Service junction box
- g) **IS 6005:** Code of Practice for phosphating iron and steel

3. Climatic Conditions of the Installation:

- | | |
|--|-------------|
| a) Max. Ambient Temperature | : 42 deg. C |
| b) Min. Ambient Temperature | : 10 deg. C |
| c) Max. Humidity | : 98% |
| d) Min. Humidity | : 60% |
| e) Average Annual Rainfall | : 2500 mm |
| f) Average No. of rainy days per annum | : 150 days |
| g) Altitude above MSL | : 9 metres |
| h) Average wind velocity | : 18 km/hr. |

4. General Technical Requirement:

Sl. No.	Description	Service Junction Box
1.	Installation	Outdoor
2.	Rated Voltage	430V
3.	No. of Phases	3
4.	Frequency	50 Hz
5.	Wiring System	3 Phase 4 Wire
6.	System Earthing	Solid at source end.
7.	Current Rating (A)	250 A
8.	Dimension (H x W x D)	To be specified by vendor
9.	Busbar Material/Size	
	Phase (3 Nos)	EC Grade Aluminium (20 mm x 5 mm)
	Neutral (1 No)	EC Grade Aluminium (20 mm x 5 mm)
10.	Max. current density of Al Busbar	1 Amp/sqmm.
11.	Degree of Protection	IP-43
12.	Temperature Rise	Max. permissible temperature rise for the Busbar and terminal should be 45°C & 65°C respectively at ambient not exceeding 42°C
13.	No. of Incoming	2
14.	No. of Outgoing	6 Nos. (100 A cut-out fuse unit) for 3-phase connection (2 Nos.)
15.	Fuse Base Rating & Size	100 A
16.	Current rating of Busbar	250 A
17.	Busbar spacing (centre to centre)	Specified by vendor
18.	Neutral Busbar rating	250 A
19.	Size of Incoming Cables	1 x 4C x 120 sqmm.

20.	Size of Outgoing Cables	1 x 4C x 120 sqmm
21.	Box Leg dimension	To be specified by vendor
22.	Enclosure material	Cold rolled steel of 2.5 mm thickness
23.	Colour of enclosure	Light Grey 631 of IS:5
24.	Cable Entry/Cable Gland	Bottom /3 mm Cable Gland

5. General Construction:

- a) The design and layout of Service junction box shall be compact and convenient to provide ease of termination of cables and operation of fuse bases. It shall be designed for termination of cables and operation of fuse base shall be from the front end. The Service junction box enclosure shall provide a degree of protection not less than IP-43 in accordance with IS-2147.
- b) The enclosure shall be suitable for Outdoor installation. The enclosure shall be made from cold rolled sheet steel of thickness 2.5 mm and shall be suitable to withstand rough usage and weather.
- c) Box shall be rigid free standing & floor mounting type and comprise of structural frames enclosed completely with specially selected smooth finished cold rolled sheet steel of thickness not less than 2.5 mm for weight bearing members of the panels such as front sheet and door frames, sides, door top and bottom portions.
- d) All joints to be made flush type and all edges shall be bent at right angles and rounded. All structural members shall be bolted or welded together. Necessary arrangement shall be provided for bolting together the adjacent panels. The doors, removable covers and panels shall be sealed with gasket all round with neoprene gaskets. Ventilating louvers shall be provided at both sides & shall have screens and filters.
- e) The top of pillar shall be fitted with a sloping canopy, the design of which shall be such that rain water shall not accumulate on the top.
- f) It shall have overhang and fascia of min. 100mm. 2 nos. lifting lugs of same material shall be provided.
- g) Three nos. heavy duty hinges shall be provided for each door such that they are not visible from outside and hence not removable. The hinge shall be of such construction that the door can be swung open by not less than 150°. The door shall be fitted with integral handle, flushed with the surface of the door.

- h) Air ventilation arrangement shall be provided at top and all sides of the enclosure to facilitate air circulation.
- i) The door shall have three point locking arrangement. Special type tamperproof heavy duty built-in inter-lock with appropriate key shall be provided. Locking system with handle up & down arrangement shall be provided on front side of the doors. The door shall be provided with pad-locking facility also.
- j) Proper support shall be provided for holding I/C & O/G cables. These cable support arrangement shall be provided to take the load of the cable.**
- k) The Busbar of all phases and neutral shall be provided with colour coded heat shrinkable insulation sleeves.**
- l) Cable termination arrangement shall be from bottom and suitable for external cables of type and sizes as mentioned in the specification.
- m) The box shall be provided with an Aluminium Earth bus at the bottom, suitable for the rated short time current of the box. The earth bus shall provide Earthing to all the components inside the pillar and the metallic enclosure including the armour of the cables. The earth bus shall be internally connected to two separate earth terminals located outside, on either side of the Box.
- n) The paint on the Service Junction box shall have good colour retention properties and shall be weather and UV resistant. The Retro reflective paint strip shall be provided on the four faces of the pillar box which shall withstand the temperature conditions and reflect vehicular light at night time providing safety to traffic. All sheet steelwork shall be phosphated in accordance with IS: 6005 "Code of practice for phosphating iron and steel". Oil, grease, dirt and swart shall be thoroughly removed by emulsion cleaning. Rust and scale shall be removed by pickling with dilute acid followed by washing with running water rinsing with slightly alkaline hot water and drying. After phosphating, thorough rinsing to be carried out with clean water followed by final rinsing with diluter dichromate solution. After that the powder spray with spray gun to be used and to put into the oven for drying in 200deg.C. for 40min
- o) The Plot & Service Junction box shall be provided with durable and legible Aluminium nameplates containing all technical parameters and manufacturing details. The box shall be provided with a plate 'Danger' mark for 430V AC as per IS 2551-1982. Property plate mentioning "Property of WBSEDCL" and project name if any shall also be provided.
- p) All routine, acceptable & type tests shall be carried out in accordance with the relevant IS/IEC. All routine/acceptance tests shall be witnessed by the Purchaser/his authorized representative.
- q) Equipment shall be subject to pre-dispatch inspection by a duly authorized representative of the Purchaser. Inspection may be made at any stage of manufacture at discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection.

- r) The material received at Purchaser store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection.
- s) Supplier shall stand guarantee for five years from the date of supply towards design, materials, workmanship and quality of process/manufacturing of items under this contract.
- t) Supplier shall ensure that all the equipment covered under this specification shall be prepared for transport in a manner so as to protect the equipment from damage in transit.
- u) Supplier shall submit with the offer Quality assurance plan indicating the various stage of inspection, the tests and checks which will be carried out on the material of construction, components during manufacturing and equipment after finishing.
- v) 6 nos. holes of suitable size shall be drilled on the busbar / phase of the Plot & Service Junction boxes.
- w) Holes for cable entry at bottom shall be as follows:

SERVICE JBOX FOR THREE (3) PHASE CONNECTION	4 nos. suitable size for 4 C X 120 sq mm 1.1 KV XLPE cable.
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6. **Special Requirement:**

Wider Spacing at terminals for connecting cable so that it is easy for operators to connect /disconnect cables.

7. **TESTS:**

7.1 TYPE TESTS: ON COMPLETE PLOT & SERVICE JUNCTION BOX

The equipment offered in the tender should have been successfully type tested at NABL laboratories in India or equivalent international laboratories in line with the relevant standard and technical specification, within the last 5 (five) years from the date of offer. The bidder shall be required to submit complete set of the type test reports along with the offer.

Following type tests as per IS: 5039/1983 shall be carried out on complete L.T. Plot & Service junction Box.

1. Temperature rise test:-The temperature rise test should be carried out as per IS: 8623 –1993.
2. High voltage test shall be carried out as per IS: 8623/ 1993 amended up to date.
3. Short Time Withstand Current Test on L.T. Plot & Service junction Box shall be carried out as per IS8623: or latest version.

4. Degree of protection for IP- 43 on complete L.T. Plot & Service junction Box shall be carried out as per IS: 13947/1993 or the latest version thereof.
5. Verification of clearance & creepage distances.

7.2 ACCEPTANCE TEST:ON COMPLETE PLOT & SERVICE JUNCTION BOX

Following tests shall be carried out as per acceptance tests in addition to routine tests on one random sample of each rating out of the lot offered for inspection:

- i) Temperature rise test on one sample of each rating.

7.3 ROUTINE TESTS: ON COMPLETE PLOT & SERVICE JUNCTION BOX

- a) Routine and acceptance tests as per relevant IS shall be carried out at the manufacturers' works.
- b) Overall Dimensions Checking.
- c) Insulation Resistance Tests.
- d) High Voltage Test at 2500 V, 50 Hz AC for one minute.

8. INSPECTION:

- 8.1. The supplier shall prepare a prototype and offer the same for inspection and approval before taking up mass production.
- 8.2. All routine & acceptance tests and inspection of material shall be carried out at the place of manufacturer. The manufacturer shall offer the Inspector (representing the purchaser) all reasonable facilities, free of charge at the time of Inspection.
- 8.3. The supplier shall offer inspection of the material at his works before dispatch. If required the supplier shall also offer inspection of manufacturing painting and assembly processes and quality control system. If any material is not found in line with relevant specification the supplier shall carry out the modification and offer for re-inspection.
- 8.4. Inspection and acceptance shall not absolve the supplier of his responsibility to supply the material in accordance with the specifications. The purchaser reserves the right to reject the material not confirming the relevant specifications.

9. DRAWINGS AND DOCUMENTATION:

- a. The successful bidder shall submit set of all drawings of the Plot & Service junction Boxes and its components in triplicate and get the same approved before commencement of production.
- b. The tenderer shall furnish all details and clarifications required if any for scrutiny and evaluation of the offer.
- c. Manufacture of material to be supplied shall be done strictly as per approved drawing.
- d. Approval of drawing shall not absolve the supplier of his liability for ensuring correctness according to applicable standards & regulations.

10. DESPATCH:

10.1 The material to be supplied shall be packed and dispatched only after inspection and approval.

10.2 Supplier shall be responsible for packing, transporting and delivery to the consignee at anywhere of West Bengal.

10.3 Copies of packing list and inspection report duly approved shall be sent along with each consignment.