

TENDER SPECIFICATION

BHEL: PSSR: SCT: 2251

FOR

**Repair and waterproofing works at BHEL Integrated
Office Complex, Pallikaranai, Chennai**

VOLUME –II

PRICE BID

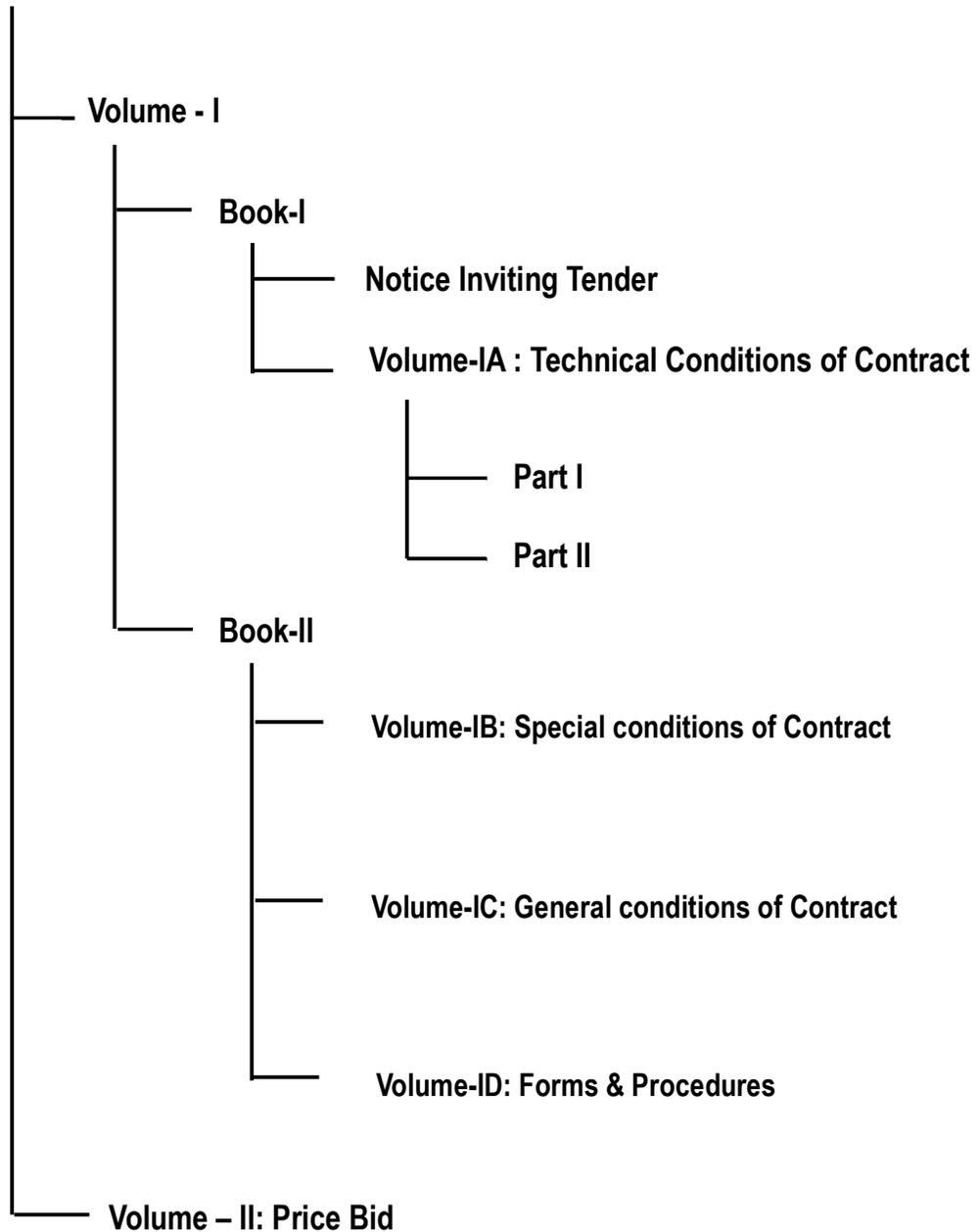


BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)

Power Sector – Southern Region
BHEL Integrated Office Complex, TNEB Road
Pallikaranai, Chennai - 600100

TENDER SPECIFICATION CONSISTS OF

Tender Specification



NOTICE INVITING TENDER

CONTENTS	
Description	No. of pages
Part A: Instructions to the Bidders	01
Part B : Format for total amount (Enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender)	(Separate Excel File)
Part C: Bill of quantities with weightage for amount of each items with respect to the total quoted price	6

NOTICE INVITING TENDER

PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ / Price bid (Part C) is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
2. Tenderers are requested to affix their company seal and authorized signature in all pages.
3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details -> Tender covers -> Finance '(Cover Type Description – Price Bid)'' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/ formats will not be entertained.
4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid. Total amount shall be excluding taxes.
5. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
6. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
7. Based on the quantities of individual item and the amount arrived in SI No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.7 above.

Part C : Bill of Quantities

**Tender Specification for Repair and waterproofing works at BHEL Integrated Office Complex, Pallikaranai, Chennai
at PSSR HEADQUARTERS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A	Seventh Floor - Landscape area - Water Proofing Work - all the materials and labour, tools are to be lifted till seventh floor of the building.	--		
1.0	Surface Preparation: Break & remove the existing plaster, screed, brickwork & waterproofing layer and reach upto RCC mother slab level followed by cleaning and preparation of surface with the help of wire brush and hand grinder . Remove all loose concrete, dust with air blower and or and washing using High pressure waterjet pump (180 Psi) including disposal of removed waste materials. Undulation in RCC slab surface, honeycombs, pin holes, imperfections should be chiselled to the sound substrate and repair with Polymer Modified Mortar a dual shrinkage compensated Dr. Fixit Polymer Modified Mortar HB (or) equivalent. Moisture cure for 5 days then allow drying out slowly. PVC pipes to be placed / inserted in the core cut areas, (if any) , apply a coat of Dr. Fixit Pidicrete Epoxy bonding agent (or) equivalent, over this, sprinkling fine sand / quartz sand and fill the gap with Dr. Fixit ((or) equivalent) Micro Concreate or with shrinkage compensating Dr. Fixit Polymer modified mortar HB (or) equivalent,. Irrespective of the thickness / nature of the dismantling - screed plaster, or brickworks, only the Floor area will be considered for the purpose of measurement for payment. Disposal of construction waste materials to be executed with the approval of concerend BHEL in charge.	sqm	220	.0629149
2.0	Preliminary Repair & masonry Works	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
--	<p>Angel Fillet: Roughen and clean the junction of wall and floor with wire brush and air blower to remove the dust particles. Moisten the surface with water & apply a bond coat of Dr. Fixit Pidicrete URP (or) equivalent, and cement (1:1) by volume with brush. Providing & Laying angle fillet (gola) of size 50 x 50 mm in width over the bond coat when it is in wet condition. Preparing PMM by taking 1 kg Dr. Fixit Pidicrete URP (or) Equivalent, 5 kg fresh cement, and 15 kg graded quartz sand. (i.e., in the ratio of 1:5:15) on RCC surface (slab and wall junction) finishing in smooth finish. Including moisture cure for 5 days then allow drying out slowly. etc complete.</p> <p>Crack Repair: Cut and widen all cracks more than 1mm up to 8mm in width and depth in V shape with mechanical cutter. Clean the cracks with air blower. Apply a coat of Dr. Fixit Pidiprime A primer ((or) equivalent), over prepared crack in the length, allow the surface to cure tack free upto 20 mins. Fill the crack with Dr. Fixit or equivalent PU sealant with suitable gun and level the sealant with spatula / putty knife. Allow sealant to cure a minimum 72 hours. Providing and laying minimum 100mm width 60 GSM non-woven geo textile fleece over the length of shrinkage crack in sandwich layer of a bond coat of Dr. Fixit Cipoxy 16D (or) equivalent epoxy primer and two topcoats of Dr. Fixit Flexi PU 270 (I) (or) equivalent. Apply the second coat after an interval of 12 hours.</p>	sqm	220	.0414979

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
3.0	<p>Waterproof Coating: Provide and apply moisture insensitive Dr. Fixit Cipoxy 16D primer @ 0.20- 0.25 kg/m² or equivalent primer. Allow the primer to cure for 6 to 8 Hrs to tacky condition. Provide and apply 2 coats of two component, PU based seamless waterproofing membrane over the above primer, coverage at the rate 2.3 - 2.5 kg/m² in 2-3 coats to achieve DFT of 1.5 mm. The PU membrane shall be terminated 300mm or more above FFL as per the site requirements, self-curing for 5 days. The Waterproofing material shall have Solids > 85%, Tensile strength > 2 Mpa as per ASTM D 412, Elongation > 400% as per ASTM C 1305, crack bridging up to 2mm, Shore A Hardness > 70 as per ASTM D 2240, Adhesion to concrete > 2Mpa as per ASTM D 903, Water vapor permeability > 14gm / m² / day as per ISO 9932:91, Puncture Resistance > 300 N as per, ASTM E154- 2013 Water Head Resistance 50M as per DIN 1048 and minimum warrantee of 10 years should be furnished for the waterproofing membrane.</p> <p>Separation Layer: Providing & Laying 120 GSM Non-Woven Polyester Geotextile membrane with a min of 100mm wide overlap loosely laid over the above mentioned PU Water proofing membrane.</p> <p>The application of waterproofing treatment shall be carried by authorised applicator of approved Manufacturer of Waterproofing materials and the applicable warrantee as per manufacturers recommendations to be furnished by the bidder.</p>	sqm	250	.1303049

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
4.0	Horizontal Protection - Mortar screed for protection & Slope: Protection Screed - slope (horizontal and vertical both to be maintained. proposed slope layout maybe submitted for approval of BHEL in charge before commencement of screed work). Providing & laying of average 100 mm thick protective screed of M20 grade (with integral water proofing compound conforming to IS 2645:2003) by keeping minimum 50mm thickness of screed at drainage point with slope 1:100 containing 12 mm and below coarse aggregates, 100% virgin polypropylene fibers @ 0.9 Kg/Cu.m with a broom finish, well compacted, curing for 7 days etc. complete. The screed shall be raised to the wall in the form of vatta to achieve a smooth corner. The screed shall be divided into panels of suitable size (3mx3m / as suitable) to prevent any hairline cracks in the future due to thermal expansion and filling the construction joints with Dr. Fixit or Equivalent PU sealant, confirms to ASTM C-920-S, NS, 25 & BS EN ISO 11600:2003 Type F & G as per manufacturer specification, etc, complete.	Cum	50	.1736571
5.0	Vertical wall Protection plaster: Providing & laying 15mm THK protective plaster of C:M 1:4 admixed with integral waterproof compound conforming to IS 2645:2003, Pidiproof LW+ @ 200ml per bag of cement, over the waterproofing membrane for vertical protection after application of Dr. Fixit Epoxy Bonding agent / Dr. Fixit Cipoxy 16D primer and sprinkling of quartz sand to create key for the plaster. Including finishing & water curing of plaster for minimum 7 days.	Sqm	75	.015708
6.0	Tiling at Seventh floor Lanscape area: Providing and laying 10mm to 12 mm thick matt finish skid-resisitant, fully vitrified tiles - 1st quality, of approved make in flooring and skirting over underbed of UV resistant polimer modified mortor adhesive suitable for outdoor application and tiles to be laid with spacer of 3mm to 5mm or as instructed and joints are filled with highest UV resistant polymer modified mortar adhesive complete as per specifications. Proposed material details and the data sheets to be furnished along with the bid documents.	Sqm	250	.1605192

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7.0	Top Layer Waterproofing coating: 1. Surface Cleaning 2. Apply One coat of Dr.Fixit Primer seal with 1:1 dilution. 3. Followed by 1st coat of Dr.Fixit Roof seal select without Dilution along with chopping of 40GSM fiber mesh over the 1st coat and allow it dry for 6 hrs. 4. Followed by 2nd & 3rd coat of Dr.Fixit Roof seal Select with the time interval of 6 hrs in horizontal & vertical directions. 5. Above coating system completely air cure for 7 days. Equivalent products of other reputed makes also may be applied with the approval of BHEL. Execution of this coating on top of tile will be at the discretion of BHEL.	Sqm	250	.0588317
8.0	Exterior wall repair and painting as per the specification (Painting works to be carried out at the walls of Landscape area, Terrace parapet wall (on top of landscape area), and any other areas as specified during execution within the building complex: Prepare the surface thoroughly by cleaning, removing dust Dirt and loose particles. Fill up Cracks with DR.Fixit Crack powder & Crack paste. Any Existing patches and repairs would be filled with polymer modified mortar. Apply one coat of DR.Fixit Prime seal (dilute with water in the ratio 2:1) allow it to dry for 2 to 3 Hours. Apply the first coat of DR.Fixit Rain Coat Water Proof Coat and allow it to dry for 4 to 5 hours The Final Coat Of we were taking Of DR. Fixit Rain Coat Select (Color as per choice of BHEL) To Finish their respectful places (DFT200Micron) . The rate quoted to be inclusive of all leads and lifts upto the working area.	Sqm	350	.0741271
B	Roof Water Proofing coating on top of existng cool roof tiles:	--		

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9.0	Dr.Fixit Roof Seal Ultra Coating Work; Terrace Surface Preparation & Application Procedure: Prepare The Surface Thoroughly by Cleaning, Washing and Removing Dust, Dirt, Oil Grease and Loose Particles Any Existing Patches and Repairs Would Be Filled with Polymer Modified Mortar All Terrace Crack Filling with Used Dr.Fixit Crack X or Pu Sealant. Apply Fiber Mesh and Along with Add Dr.Fixit Primer Ac Allow It to Dry For 4 to 6 Hours. Apply First Coat of Dr.Fixit Roof Seal Ultra and Allow It to Dry For 4 to 5 Hours. Apply The First Coat of Dr.Fixit Roof Seal Ultra and Allow It to Dry For 4 to 5 Hours Followed by the 2nd & 3rd Coating. (DFT1	Sqm	850	.2305712
C	Repair and waterproofing works in Basement area structures:	--		
10.0	Thorough inspection of the basement structures, assess the cracks, Crack Injection with low-viscosity epoxy, application of epoxy bonding agent, and application of fiber-reinforced, shrinkage-controlled mortar, and finally apply waterproofing protective coating with acrylic elastomeric coating, having crack bridging upto 0.5mm to 1mm. application, and curing and methodology shall be as per the specifications and as per the manufactures recommendations. Detailed methodology is enclosed in the specification.	Sqm	75	.0518663
TOTAL Weightage				0.9999984