

Form No:	 BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION PE&SD	PY 60 050	
		TECHNICAL SPECIFICATION	
		STRUCTURAL & REINFORCEMENT STEEL	
			Rev. No. 01
			Page 1 of 6

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STRUCTURAL & REINFORCEMENT STEEL ORDERING SPECIFICATION

1.0 GENERAL:

This specification covers quality requirements of **Structural steel i.e.** Hot rolled steel sections **and reinforcement steel i.e.** High Strength Deformed Steel Bars for concrete reinforcement as per IS:800/ IS: 1786. (Latest revision and amendments)

Reinforcement steel:

TMT steel bars of minimum grade Fe 500D conforming to IS: 1786.

HYSD Fe500D corrosion resistant bars conforming to IS: 1786.

Bar Diameters 8, 10, 12, 16, 20, 25, 28 & 32 (in mm)

Mild steel Round Bars, as per IS432 – Grade 1, shall be used as Lugs for Insert Plates and Insert Angles.

Fabric Reinforcement shall be provided as per IS 1566.

Mild steel:

Structural Steel shall be of yield stress of 250 N/ mm² conforming to Grade A of IS: 2062 & shapes as per SP6 conforming to IS: 800/ IS: 12778 (wide flange/ narrow flange sections) or Universal beams and Columns as per BS.

Structural Steel shall comply with requirements as follows:

For ISMB, ISMC, ISA (Angles) : IS 2062 Grade E250B0/ BR

For Flats : IS 2062 Grade E250B0/ BR

For Plates : IS 2062 Grade E250BR/ E350BR

For Universal Columns/ Beams : BSEN 10025 S275JR/ S275J0 / S355J0

Tubular / Hollow steel should conform to Yst 310 of IS:1161.

Properties of steel section shall be as follows:

- a) Rolled section as per IS: 808
- b) Parallel flanged sections as per IS: 12778.
- c) Circular Hollow sections (CHS) as per IS: 1161.
- d) Square Hollow sections (SHS) / Rectangular Hollow Sections (RHS) as per IS: 4923.

Anchor Bolts shall be of mild steel conforming to Grade A of IS: 2062 unless otherwise specified

Refer Doc	CIVIL ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED	CHECKED	APPROVED	DATE
		PIYUSH	GOPAL PATEL	ESHAN CHANDRA	10.02.21

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PE&SD

BHARAT HEAVY ELECTRICALS LIMITED

PROJECT ENGINEERING & SYSTEMS DIVISION

TECHNICAL SPECIFICATION

STRUCTURAL & REINFORCEMENT STEEL

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2.0

APPLICATION:

For general engineering purpose.

3.0

CONDITION OF DELIVERY:

Structural Steel shall be straight, sound, and free from twists, cracks, flaw , laminations and all other defects.

All steel bars, sections, plates and other miscellaneous steel materials, etc. shall be free from loose mill scales, rust as well as oil, mud paint or other coatings. The materials, construction specifications such as dimensions, shape, weight, tolerances, testing etc. for all materials covered under this section, shall conform to respective IS codes.

4.0

COMPLIANCE WITH NATIONAL STANDARDS:

Material shall comply with the requirements of IS:800/ IS: 1786 -2008 (latest amendments)

5.0

DIMENSIONS AND TOLERANCES:

The tolerance on dimensions shall comply with IS Code 2062/ 1786/ 800 provisions.

5.1

DIMENSIONS:

5.1.1

Sizes

Material shall be supplied to the dimensions specified on BHEL Order.

5.1.2

Length

Unless otherwise specified, shall be supplied in 10-12 metres length or as specified in BHEL order.

5.2

TOLERANCES:

The Rolling and cutting tolerances shall comply with IS: 1852 / IS:1786(latest amendments).

6.0

HARDNESS (BRINELL):

When tested in accordance with IS:2062 / IS: 1500-2019, the material shall show a brinell hardness in the range of 120-156 HB.

7.0

BEND TEST:

In accordance with IS:2062/ IS:1786-2008(latest amendments)/ IS: 1599-2019.

8.0

MECHANICAL/CHEMICAL TESTING:

Mechanical testing and chemical testing as per specification and quality extras as indicated in accordance with IS code 2062/ 1786 provisions.


9.0

ULTRASONIC EXAMINATION:

Plates shall be ultrasonically examined in accordance with BHEL standard AA0850120 (or ASTM-A435) as detailed below and shall comply with the acceptance standards specified therein.

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For plates above 40 mm thick shall be ultrasonically examined as per ASTM-A578 level B unless when otherwise specified in order.

10.0

FINISH:

Material to be free from all mill scales, laminations, bends and cracks. Edges shall be neatly trimmed by hot saw. Smooth surface.

11.0

INSPECTION:

If found necessary Random sampling will be done and entire lot/ heat will be rejected if sample fails.

12.0

REPAIR :

Fusion welding prohibited, mechanical removal of defects permitted and should meet minimum thickness and smooth surface.

13.0

DELETED

14.0

TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information.

PY60050 Rev.01 / IS:800/ IS: 1786/ IS:2062 (IScode as applicable)

BHEL order no., Melt no. Size, Results of chemical analysis and Mechanical tests, Supplier's name, Identification no. TC no., Signature of competent authority etc.

15.0

PACKING AND MARKING:

In bundled condition only (10mt max.)

Structural steel and TMT bars shall be transported suitably to avoid damage during transit.

For plates below 10 mm thick, each pile (preferably of 16 plates) and each plate 10 mm thick & over shall be marked with melt no. PY 60050, BHEL order no., Supplier's name, Identification no., Size & weight on any one corner and encircled with paint preferably of white colour.

16.0

REFERRED STANDARDS (Latest publications including amendments):

1) IS: 1786 2) IS: 1599 3) IS: 1500 4) IS: 800 5) IS: 2062

17.0

REJECTION AND REPLACEMENT

If the material does not comply with the requirements of this specification during receipt inspection at BHEL or if any defect is found during further processing of material, BHEL reserves the right to reject the whole consignment and the supplier

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shall replace the material free of cost. The rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.

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VARIANT TABLE: (TO BE UPDATED AS PER PER REQUIREMENT)

Rev-0

Var No	Item Description	BHEL Material Code
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01	TMT bar 8-16 mm IS:1786 Fe500/ 500D	PY9760050013
02	TMT bar 8-16 mm IS:1786 Fe500/ 500D CR grade	PY9760050021
03	TMT bar 20-25 mm IS:1786 Fe500/ 500D	PY9760050030
04	TMT bar 20-25 mm IS:1786 Fe500/ 500D CR grade	PY9760050048
05	TMT bar 28-32 mm IS:1786 Fe500/ 500D	PY9760050056
06	TMT bar 28-32 mm IS:1786 Fe500/ 500D CR grade	PY9760050064
07	TMT bar 36 mm IS:1786 Fe500/ 500D	PY9760050072

Rev-01

Var No	Item Description	BHEL Material Code
01	TMT bar dia 8 mm IS:1786 Fe500/ 500D	PY9760050110
02	TMT bar dia 10 mm IS:1786 Fe500/ 500D	PY9760050129
03	TMT bar dia 12 mm IS:1786 Fe500/ 500D	PY9760050137
04	TMT bar dia 16 mm IS:1786 Fe500/ 500D	PY9760050145
05	TMT bar dia 20 mm IS:1786 Fe500/ 500D	PY9760050153
06	TMT bar dia 25 mm IS:1786 Fe500/ 500D	PY9760050161
07	TMT bar dia 28 mm IS:1786 Fe500/ 500D	PY9760050170
08	TMT bar dia 32 mm IS:1786 Fe500/ 500D	PY9760050188
09	CR TMT bar dia 8 mm IS:1786 Fe500/ 500D	PY9760050218
10	CR TMT bar dia 10 mm IS:1786 Fe500/ 500D	PY9760050226
11	CR TMT bar dia 12 mm IS:1786 Fe500/ 500D	PY9760050234
12	CR TMT bar dia 16 mm IS:1786 Fe500/ 500D	PY9760050242
13	CR TMT bar dia 20 mm IS:1786 Fe500/ 500D	PY9760050250
14	CR TMT bar dia 25 mm IS:1786 Fe500/ 500D	PY9760050269
15	CR TMT bar dia 28 mm IS:1786 Fe500/ 500D	PY9760050277
16	CR TMT bar dia 32 mm IS:1786 Fe500/ 500D	PY9760050285

RECORD OF REVISIONS:

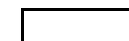
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	00	03.03.2015	FIRST ISSUE	VENUGOPAL	P. MISHRA
	01	10.02.2021	QUALITY SPECIFICATION ADDED	PIYUSH	ESHAN CHANDRA
	02	02.0.3.2021	CLAUSE NO. 13 DELETED	GOPAL P PATEL	ESHAN CHANDRA

ANNEXURE-1 TO 2. PY60050-R01-: INDICATIVE TMT REINFORCEMENT BAR DETAIL
(PROJECT NAME: 525 TPD Standby Sulphur Recovery Unit (SRU), IOCL Paradip Refinery)

Sl. No.	ITEM DESC.	UNIT	TMT bar dia range	WT. (MT) (APPROX)
A	B	C	D	E
1	Supply of Reinforcement Steel 8 Dia - 10 Dia TMT bar (Fe 500D) HYSD as per IS1786	MT	8 Dia - 10 Dia	15.00
2	Supply of Reinforcement Steel 12 Dia - 20 Dia TMT bar (Fe 500D) HYSD as per IS1786	MT	12 Dia - 20 Dia	25.00
3	Supply of Reinforcement Steel 25 Dia - 32 Dia TMT bar (Fe 500D) HYSD as per IS1786	MT	25 Dia - 32 Dia	210.00
			TOTAL WEIGHT (APPROX.)	250.00

Note: Above quantities are approximate and may vary as per project requirement. However total quantities shall be in the range of +/- 20%.



 IndianOil	STANDBY SRU (525 TPD) TRAIN FOR IOCL PARADIP REFINERY SCC - PART-A	
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submissions calling for repeated reviews by the OWNER/PMC shall be avoided by the CONTRACTOR.

- 30.5** Any inaccuracies, errors and non-compliance to contractual requirements will be rectified by the CONTRACTOR. Delay occurring on this shall be to the account of the CONTRACTOR.

31. SUB-CONTRACTING

- 31.1 If the CONTRACTOR is required to engage a Sub-contractor for any part of work, then such sub-contractors shall have prior proven experience of similar work and shall require specific approval by OWNER after award of sub-contract as per attached as **Annexure A-VIII** to this SCC.
- 31.2 Following the notification of Acceptance of Bid, the CONTRACTOR will submit to the OWNER for approval, the details of sub-contractors to these Special Conditions of Contract. CONTRACTOR shall ensure that very competent and resourceful agencies with proven track record and performance should be proposed for the work to be sub-contracted.
- 31.3 Any bidder who had submitted the bid for this tender and does not get the Contract because of his being not the lowest will be prohibited from working as sub-contractor for execution of this Contract.

32. ELECTRICAL CONTRACTOR'S LICENCE

- 32.1 The CONTRACTOR or its nominated Sub-CONTRACTOR (s), as the case may be, shall have a valid electrical CONTRACTOR"s license for working in the State in which the job site is located. The CONTRACTOR shall furnish a copy of the same to Engineer-in-charge before commencement of any electrical work or work pertaining to Electrical System.
- 32.2 No Electrical work or work pertaining to electrical system (s) shall be permitted to be executed without a valid Electrical CONTRACTORs License being produced by the CONTRACTOR or Sub-CONTRACTOR, as the case may be, intending to execute the work.



33. PROCUREMENT OF TMT BARS, CEMENT AND STRUCTURAL STEEL BY CONTRACTOR

33.1 Contract Clause for acceptance of Structural Steel & TMT Bars

- 33.1.1** The Contractor shall purchase Structural Steel and TMT Reinforcement Bars from the approved Manufacturers as per the Master Supplier/Vendor List attached with the Bidding Document.

However, in the event any of the above approved Manufacturers do not quote for the above steel material due to quantity limitations/constraints, CONTRACTOR may, with the prior approval of OWNER/PMC, procure such items from the Authorized Stockist(s) of the Manufacturer (s) subject to fulfillment of the conditions related to furnishing of the MTCs (confirming to the applicable IS Codes) and Sample Testing as mentioned in the Tender Document.

Structural Steel/Reinforcement Bars not being manufactured by any of the approved Manufacturers (in the Vendor List) shall be allowed to be procured, subject to prior approval of

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OWNER/PMC, from any Manufacturer(s) having valid BIS license. This also shall be subject to fulfillment of the conditions related to furnishing of the MTCs (confirming to the applicable IS Codes) and Sample Testing as mentioned in the Tender Document.

However, delay if any, by OWNER/PMC in approving any Manufacturers / Authorized Stockist proposed by CONTRACTOR, or rejection, if any, of Manufacturers / Authorized Stockist, by OWNER/PMC, shall not entitle the CONTRACTOR for any claim for time extension or any cost implication.

33.1.2 Tests after receipt of Structural Steel at site:

In addition to availability of MTC (confirming to the applicable IS Codes), for each category / size of structural steel procured, one sample from every 50 MT or part thereof shall be drawn and tested in approved laboratory. The charges for such testing shall be borne by the contractor.

33.1.3 Tests after receipt of TMT bars at site:

In addition to availability of MTC (confirming to the applicable IS Codes), samples as specified under shall be drawn and tested in approved laboratory. The charges for such testing shall be borne by the contractor.



- Under 10 mm bars one sample for each 25 MT (or part thereof) for consignment below 100 MT and one sample each 40 MT (or part thereof) for consignment above 100 MT shall be tested.
- For 10 mm to 16 mm bars, one sample for each 35 mm MT (or part thereof) for consignment below 100 MT and one sample each 45 MT (or part thereof) for consignment above 100MT shall be tested.
- Over 16 mm bars one sample for each 45 MT (or part thereof) for consignment below 100 MT and one sample each 50 MT (or part thereof) for consignment above 100 MT shall be tested.

33.2 Contract Clause for acceptance of Cement manufacturer

33.2.1 The Cement supplied by the Contractor shall be from the approved Manufacturers as per the Vendor List attached with the Bidding Document.

In the event of non-availability of cement from the approved Manufactures, the CONTRACTOR shall propose additional vendor(s) to OWNER/PMC for their prior approval, before procurement of Cement. However, delay if any, by OWNER / PMC in approving any vendors proposed by CONTRACTOR, or rejection if any vendors(s), by OWNER/PMC, shall not entitle the CONTRACTOR for any claim for time extension or any cost implication.

33.2.2 Tests after receipt of Cement at Site: Each batch of cement (week wise as mentioned on cement bags) supplied by the contractor after delivery at site shall be subject to the tests and analysis

 TechnipFMC		PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
		CLIENT	INDIAN OIL CORPORATION LIMITED		
Design Basis for Civil, Structural Architectural and U/G network	Project No. 080557C001	Document No. 080557C-088-JSD-1700-001		Rev. No. C	Page 15 of 136

1. General

This specification defines the design criteria and loads that should be taken in to account for the design of all industrial plant and non-plant structures and buildings.

2. Material and Material of Construction

2.1 General

Unless otherwise specified in the drawings, material specifications should conform to the following.

2.1.1 Cement:

Generally, for all concrete works both above and below ground, the use of one of the following type of cements shall be considered:

- ◆ 43 Grade or 53 Grade Ordinary Portland Cement (OPC) conforming to IS: 8112/IS: 12269.
- ◆ Portland Pozzolana Cement (PCC, fly ash based) conforming to IS: 1489 Part 1.
- ◆ Portland Pozzolana Cement (PCC, calcined based) conforming to IS: 1489 Part 2.
- ◆ Portland Slag Cement (PSC) conforming to IS: 455.
- ◆ Sulphate Resistant Portland Cement (SRC) conforming to IS: 12330 shall be used (if required as per soil recommendation for respective site).

2.1.2 Aggregate:

Aggregates used in concrete works shall be conforming to IS: 383. For most works, graded 20 mm down aggregate shall be used. Where there is no restriction to the flow of concrete into sections, 40 mm down aggregate shall be used in special cases. The grading of fine aggregates, when determined as described in IS: 2386 (Part-I) shall be within the limits as given in IS: 383.

Blast furnace slag and manufactured sand shall not be used as aggregates.

2.1.3 Reinforcement:



Reinforcement shall be High Strength deformed TMT bars of grade Fe 500D conforming to IS: 1786.

Reinforcement steel of minimum grade Fe500D to be used. Unless specifically stated otherwise use of mild steel is not permitted in R.C.C. works. If used, it shall be of Grade I conforming to IS: 432 Part I.

Corrosion resistant steel (CRS-rebars) to be used for liquid retaining structures like sump, reservoir, Cooling tower cell etc.,

2.1.4 Binding Wire:

18-gauge black soft annealed SWG wire shall be used for binding of reinforcement bars.

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2.1.5 Admixtures:

Admixtures shall conform to IS: 9103 and are to be mixed with concrete strictly as per manufacturer's recommendations.

2.1.6 Grouting:

Refer Document No. 080557C-000-JSS-1700-004 – Specification for Grouting and also clause 5.15 of this document.

2.1.7 Bolts

Unless otherwise specified in the item, Bolts shall be Snug Tight High Strength Bolts of Grade 8.8 or 10.9 conforming to IS: 3757 & IS: 4000.

Nuts & bolts shall conform to IS: 1363 or IS: 1364 as applicable and as shown in the drawing. Unless otherwise specified nuts and bolts heads shall be hexagonal. Class of nuts and bolts shall be compatible. Wherever shown in the drawing, high strength friction grip bolts and nuts conforming to IS: 3757 and IS: 6623 respectively shall be used.

Washers: Plain washers shall be made of MS conforming to IS:5369 unless otherwise specified. Helical spring washers conforming to IS: 6755 shall be provided for bolts carrying dynamic or foundation loads and direct loads. Tapered washers conforming to IS: 5372 and IS: 5374 shall be used for channels and beams respectively. Washers for high strength friction bolts shall conform to IS: 6649.

All Bolts, Nuts and Washers shall be Hot Dip Galvanized shall confirm to IS: 4759.

2.1.8 Anchor Bolts

Anchor bolts shall be of mild steel conforming to Grade E250 and quality A/BO/BR of IS: 2062 and fabricated as per Document "Construction Standards for Concrete Works". Minimum two nuts shall be used for all anchor bolts except for ladder, stair and handrail.

2.1.9 Structural Steel

Steel sheets shall conform to IS: 1079.



Crane rails shall conform to IS: 3443-1980.

Refer Document No. 080557C-000-DW-1802-001 – General Notes for Structural Steel works and 080557C-000-JSS-1800-001 – Specification for Structural Steel and clause 11.2 of this document.

2.1.10 Insert Plates

Insert plates should be of structural steel grade E250 (FE 410W) Quality B0/ Quality BR conforming to IS: 2062 and should be provided with mild steel lugs and /or TMT bar lugs as per drawings/ standards.

Mild steel bars should conform to IS: 432. **Minimum thickness of Insert plate shall be 10mm.**

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2.1.11 Gratings

Electro-forged hot dip galvanized MS Gratings shall be minimum 25mm deep. The maximum size of voids in the grating shall be limited to 30mm x 100mm. The minimum thickness of galvanizing shall be as per IS 2629. Steel chequered plates shall conform to IS: 3502.

2.1.12 Design Strength of Concrete

Unless otherwise specified, the minimum concrete grade should be as follows,

Piles	M30
Liquid Retaining Structures	M30
Structural Concrete	M30
Cable Trench	M30
Storm water Drainage	M25
Grade Slab *	M30
Leveling Concrete	M20
Filling / Mass / Plum Concrete	M15
Dense Fire proofing	M20

* For Paving Refer to clause 6 in Part-D General Civil.

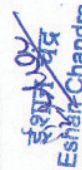

Minimum cement content, maximum water cement ratio and minimum grade of concrete for different exposures shall be as per IS: 456 (Latest edition).


Unless otherwise stated, the mix design is to be carried out by the Contractor for approval of PMC/ IOCL.

2.1.13 Plain Cement Concrete (PCC):

- 1) 75 mm thick lean concrete of grade 1:4:8 should be provided under all RCC foundations except under base slab of liquid retaining structures where 100mm thick concrete of grade 1:3:6 shall be used.
- 2) The lean concrete shall extend 75mm beyond the foundation for normal foundations and 100mm under liquid retaining structures.
- 3) PCC of grade M20 of minimum 150mm thickness shall be provided under all masonry wall foundations.
- 4) Acrylic based waterproofing compound (2% by weight of cement) shall be mixed in concrete used as damp proof course at plinth level of all masonry walls.
- 5) Minimum grade of concrete for General Civil work should be as specified in Detail specification for General Civil works.

- 2.2** Technological structures (supporting process equipment) shall be in Structural Steel. All operating floors should be in Electro-forged Gratings. Fireproofing requirement shall be as per OISD-STD-164.



STANDARD MANUFACTURING QUALITY PLAN				QP. NO.: PESD/QA/TMT BAR/001							
PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032				PRODUCT : TMT BAR SPECIFICATION: AS PER P.O							
BHEL-HYD 502032				REV NO: 00 DATE: 30.09.2021							
BHEL-HYD 502032				PAGE 1 OF 2							
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V	REMARKS
1.0	RAW MATERIALS & BOUGHT OUT ITEMS										
1.1	Raw Material Billets, moulds, etc	Chemical and mechanical properties	Major	Chem. and mech. analysis	3 per heat / lot	BHEL specification	BHEL specification	MTC	✓	2 2 1	
2.0	INPROCESS INSPECTION										
2.1	TMT Bar	Nominal Mass, Mechanical properties (2% proof stress/yield stress, Percentage elongation, Tensile strength, Percentage elongation at maximum force, etc)	Major	Measurement	3 per cast	BHEL specification	BHEL specification	IR	✓	2 2 1	
2.2		Chemical composition	Major	Testing	3 per cast			IR	✓	2 2 1	
2.3		Rolling & Cold working of Bar	Major	Testing	100%				✓	2 2 1	
2.4		Bond test/Pull out test	Major	Testing	3 per cast			IR	✓	2 2 1	
3.0	FINAL INSPECTION & TESTING										
3.1	TMT Bar	Dimension, Visual	Major	Measurement	100%			IR	✓	2 2 1	
3.2		Bend test, Re-bend test	Major	Measurement	3 per cast			TC	✓	2 2 1	
4.0	PRESERVATION & PACKING										
4.1	Packing & Marking	Packing & Marking	Major	visual	100%	BHEL specification	BHEL specification	Packing list	✓	2 2 1	
LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW, INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY/END USER/END USER'S REPRESENTATIVE & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.											
APPROVED BY  Eshwar Chandra ENGINEERING SIGNATURE & STAMP / Engr. - PESD						APPROVED BY  BHEL QA SIGNATURE & STAMP CUSTOMER'S SIGNATURE & STAMP (IF APPLICABLE)					

		STANDARD MANUFACTURING QUALITY PLAN					QP. NO.: PESD/QA/TMT BAR/001		
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032					PRODUCT : TMT BAR SPECIFICATION: AS PER P.O		
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD * D P W V	REMARKS

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NOTE:

1. This standard MQP should be read along with specification (latest revision)
2. Specification shall prevail over quality plan for contradiction if any between quality plan and specification.
3. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.

LEGEND: P: PERFORM, W: WITNESS, V: TEST CERTIFICATE REVIEW, INDICATE 1 FOR BHEL / BHEL NOMINATED INSPECTION AGENCY/END USER/END USER'S REPRESENTATIVE & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	APPROVED BY  Eshan Chandra ENGINEERING STAMP / 502032 - PESD	APPROVED BY  BHEL QA SIGNATURE & STAMP	APPROVED BY CUSTOMER'S SIGNATURE & STAMP (IF APPLICABLE)
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502032 - PESD
 BHEL-HYD-32



BHARAT HEAVY ELECTRICALS LIMITED
R.C.PURAM HYDERABAD – 500 032
PROJECT ENGINEERING AND SYSTEMS DIVISION

Pre-Qualification Criteria (Technical) :

The bid evaluation shall be on Overall L1 basis for the Package.

The Bidder shall meet the Pre-Qualification Criteria (listed below) to get themselves qualified for the complete package.

Non-compliance to any of the criteria listed below will lead to disqualification of bidder for the subject item of the tender.

SI No.1:

Bidder shall have experience in supply of TMT reinforcement Bars confirming to the applicable IS Codes and shall qualify the following criteria:

TMT Reinforcement Bars of the make **SAIL, TATA STEEL, RINL, JSW, JSPL & ESSAR STEEL** shall be considered for bid evaluation.

- a) OEM/Prime manufacturer of the makes as per S.no.1 above i.e. SAIL, TATA STEEL, RINL, JSW, JSPL & ESSAR if participating themselves **are exempted** from Bidder experience criteria for technical evaluation
- b) Authorized stockiest and dealers of the makes as per S.no.1 above if participating shall fulfill following criteria:
 - (i) the Authorized stockiest and dealers if participating in the bid and must submit **AUTHORISATION CERTIFICATE** with Bid documents or else their offer shall not be evaluated.
 - (ii) has supplied not less than following Tonnage of TMT bar after 10.03.2017 till the Original due date of this tender.

s.no.	Material Code	Item	experience in supply of TMT by vendor (MTon)
1	PY9760050005	Supply of Reinforcement Steel 8 Dia – 32 Dia TMT bar (Fe 500D) HYSD as per IS1786	75 MT

- c) Prime manufacturers **other than mentioned in S.no.1** above shall not be considered.

SI No.2:

1. The Authorized stockiest/dealers must submit relevant document establishing their claim for dealership/stockiest with due supporting documents from SAIL, TATA STEEL, RINL, JSW, JSPL & ESSAR as mentioned in SI. No. 01.
2. To correlate the data for meeting above criteria bidder shall enclose copies of Purchase orders, Dispatch documents / Delivery Challans / Delivery Invoices/ Completion Certificates from customers etc. and fill the details in Annexure-A.
3. The bidder should not have been under suspension for business or blacklisted by any of the BHEL units or in the Blocked list of IOCL.

Annexure-A

Supply References for the Last 5 five (dispatch date) from the Original due date of this tender

Enquiry Item No & Description: (To be filled by Bidder) SI. No	Project Name along with name of Customer	Description Item(s) supplied	Qty. (m tons)	Purchase Order No & Date (Copy to be enclosed)	Delivery Date as per Order	Value of Order	Inspection Reports / Dispatch Documents (Copy to be enclosed)	Remarks
1.								