

MATERIAL SPECIFICATION CELL

TECHNICAL SPECIFICATION
OF VARIOUS SIZES OF HOT ROLLED STEEL BEAMS
(JOISTS)



TECHNICAL SPECIFICATION NO.

CE/T-QC/MSC-II/RSJ Pole,

DATE: 10.07.2019

INDEX

Cl. No.	Contents	Page No.
1.	SCOPE	3
2.	WEATHER CONDITIONS	3
3.	APPLICABLE STANDARDS	3
4.	GENERAL REQUIREMENTS	3
5.	TEST REPORTS	3
6.	INSPECTION	4
7.	SCHEDULE	4
	SCHEDULE C	5
	ANNEXURE – I	6
	DRAWING	7

TECHNICAL SPECIFICATION OF VARIOUS SIZES OF HOT ROLLED STEEL BEAMS (JOISTS)

1. SCOPE:

Specification covers the manufacture, testing at works and supply of various sizes of Hot rolled steel beams.

2. WEATHER CONDITIONS:

The materials used in the construction of the steel shall be suitable for use under following weather conditions.

- i) Temp. variation: 0 Deg.C to 50 Deg.C
- ii) Relative Humidity: 20% to 100%
- iii) Altitude: 0 to 1000 meters

3. APPLICABLE STANDARDS:

The Mild shall be conforming to IS: 2062-2011 GRADE 'A' modified upto date or its equivalent international standard for steel materials, document for which shall be made available at the time of inspection to the Company's representative.

The dimensions of Hot Rolled Steel Beams shall be conforming to IS: 808 / 1989 amended upto date and tolerance as per IS: 1852 modified upto date for dimensions and weight.

4. GENERAL REQUIREMENTS:

- 4.1 Material shall be supplied as per the sizes and technical details as per Annexure I and Drawing No.: Dist./ MM /63.812 enclosed.
- 4.2 The Hot Rolled Steel Beams shall be coated by Hot Dipped Galvanized as per IS 2629 for coastal area & Mild Steel for rest of the areas.
- 4.3 Hole arrangement for LT pole:
 - i. For LT pole having bracket fitted on top side of the pole, a hole shall be provided at a distance of 75 mm from top portion of the pole and another hole shall be provided at a distance of 1115 mm from top portion of pole.
 - ii. For LT pole, which have insulator fitted on the pole directly, a hole shall be provided at a distance of 75 mm from top portion of the pole. Next 4 no. of holes shall be provided at an equal distance of 260 mm from top hole in such a way that last hole is at a distance of 1115 mm from top portion of the pole.

5. TEST REPORTS:

The material should have been successfully tested at NABL Laboratories for following tests to conform as per IS: 2062-2011 GRADE 'A' modified upto date or its equivalent international standard for steel materials & technical specification within the last 5 (five) years from the date of opening of tender. The bidder shall be required to submit complete set of the following test reports alongwith the offer.

TECHNICAL SPECIFICATION OF VARIOUS SIZES OF HOT ROLLED STEEL BEAMS (JOISTS)

1. Freedom from defects
2. Chemical Composition
3. Mechanical Properties
 - Tensile Strength
 - Yield Stress
 - Percentage Elongation
 - Bend Test
4. Dimension Test & Weight (kg/M)

Successful bidder shall submit all above test reports as per relevant IS & technical specification to the office of the Chief Engineer (Testing & QC) Cell & get approved it before commencement of supply. The original Test reports should be made available for verification.

6. INSPECTION:

- 6.1 All tests and inspections shall be made at the place of manufacturer unless otherwise specially agreed upon by the manufacturer and the purchaser. The manufacturer shall afford the inspector (Representing purchaser) all reasonable facilities without charge to satisfy him that the material is being supplied in accordance with this specification.
- 6.2 In random sample testing inspector may can pick up samples from the lots supplied at MSEDCL store office at random for quality check only. The sample will be tested as per respective IS for acceptance test as decided by MSEDCL at NABL or Government approved laboratory in presence of representative of supplier and MSEDCL. The test results will be binding on the supplier and MSEDCL, resampling will not allow in any case. If the material fails in any of the acceptance test, the full lot of material will be consider as rejected.
In case if the sample does not confirm to specifications or fails at NABL or Government approved laboratory decided by MSEDCL for testing and if subsequent testing are to be carried out (which will solely at MSEDCL discretion), then all testing fees , expenses of inspector and other expenses incurred by MSEDCL plus GST as applicable will be in suppliers account. The decision in this regards for acceptance as above of MSEDCL shall be binding on the supplier.

7. SCHEDULE:

- 7.1 The tenderer shall fill in the following schedule which form part of the tender specification and offer. If the schedule is not submitted duly filled in with the offer, the offer shall be liable for rejection.

SCHEDULE 'C': Tender's Experience.

- 7.2 The tenderer shall submit the list of orders for similar type of equipment, executed or under execution during the last three years, with full details in the schedule of Tenderer's experience (Schedule 'C') to enable the purchaser to evaluate the tender.

SCHEDULE - 'C'

TENDERER'S EXPERIENCE

Tenderer shall furnish here a list of similar orders executed /under execution by him to whom a reference may be made by purchaser in case he considers such a reference necessary.

SR.NO.	NAME OF CLIENT & DESCRIPTION	VALUE OF ORDER	PERIOD OF SUPPLY & COMMISSIONING	NAME & ADDRESS TO WHOM REFERENCE MAY BE MADE
--------	---------------------------------	-------------------	-------------------------------------	---

NAME OF FIRM _____

NAME & SIGNATURE OF TENDERER _____

DESIGNATION _____

DATE _____

TECHNICAL SPECIFICATION OF VARIOUS SIZES OF HOT ROLLED STEEL BEAMS (JOISTS)

ANNEXURE – I

Sr. No.	Particulars	Requirement as per Company's Specification				
			MB	MB	SC	UC
1.	Designation (DxB) (mm x mm)	116x100	125x70	175x85	152x152	152x152
2.	Length of joist-Meter with ±100 mm tolerance	9m/10m/ 11m/13m	8m/9m	9m	11m/13m	11m/13m
3.	Weight (kg/M)	23.0	13.3	19.6	37.1	37.0
4.	Sectional area (A) (Sq.cm.)	29.3	17.0	25.0	47.4	47.11
5.	Depth of section (D) (mm)	116	125	175	152	161.8
6.	Width of flange (B) (mm)	100	70	85	152	154.4
7.	Thickness of flange (Tf) (mm)	10	8	9	11.9	11.5
8.	Thickness of Web(Tw) (mm)	8.5	5	5.8	7.9	8.0
9.	Radius of fillet or root (R1)(mm)	15	9	10	11.7	7.6
10.	Radius of tow (R2) (mm)	3	4.5	5	3	--
11.	Moment of Inertia					
	(i) I xx (cm ⁴)	643.8	445	1260	1970	2210
	(ii) I yy (cm ⁴)	143.5	38.5	76.7	700	706.2
12.	Radius of Gyration GR xx (cm)	4.69	5.16	7.13	6.45	6.85
13.	Modulus of Section					
	(i)Z xx (cm ³)	111	71.2	144	259	273.2
	(ii)Z yy (cm ³)	28.7	11	18	91.9	91.48
14.	Tolerance in dimensions and weight	-----As per IS: 1852 Updated-----				

TECHNICAL SPECIFICATION OF VARIOUS SIZES OF HOT ROLLED STEEL BEAMS (JOISTS)

