

Technical Specification for BHEL Enquiry No. E1443063

Enquiry items along with quantities:

It. No.	Size & Item description	Technical requirement	Quantity in KG
1	MILD STEEL TUBES (ERW PIPE- IS1239) 150 NB - 166.5 MM OD X 4.85 MM THK	MILD STEEL TUBES (ERW PIPE- IS1239) 150 NB - 166.5 MM OD X 4.85 MM THK AS PER BHEL SPEC. AA10152 REV 07	6600
2	MILD STEEL TUBES (ERW PIPE- IS1239) 125 NB - 140 MM OD X 5.4 MM THK	MILD STEEL TUBES (ERW PIPE- IS1239) 125 NB - 140 MM OD X 5.4 MM THK AS PER BHEL SPEC. AA10152 REV 07	6600

Quantity Variation as per below:

Item-1: Supplies quantity are to be restricted between 6600 Kg to 5400 Kg

Item-2: Supplies quantity are to be restricted between 6600 Kg to 5400 Kg

Item No.	Description	QTY in KG	Delivery Period
1	MILD STEEL TUBES (ERW PIPE- IS1239) 150 NB - 166.5 MM OD X 4.85 MM THK AS PER BHEL SPEC. AA10152 REV 07	6600	90 days from GeM PO
2	MILD STEEL TUBES (ERW PIPE- IS1239) 125 NB - 140 MM OD X 5.4 MM THK AS PER BHEL SPEC. AA10152 REV 07	6600	90 days from GeM PO

**Pre-Qualification Requirements/Criteria (PQR/PQC) for ERW Tubes
125 NB & 150 NB as per Spec AA10152 Rev. 07**

s. No	Description of Pre-Qualification Required	Supporting Documents Required to accept Compliance	Bidder's Response Complied (Yes/No)
1	Offers are invited from mill as well as from trading houses. Bidders may be either Manufacturers or dealer / reseller / channel partner / distributor etc.	Self certification on company letter pad to be given by Bidders, whether they are Manufacturers or dealer / reseller / channel partner / distributor etc.	
2	Offers of those parties will be considered who or their manufacturer has supplied atleast one PO of "Cooler Tubes/ ERW Tubes/ ERW Pipes/ Seamless Steel Tubes" of similar kind in last 7 years from date of tender opening.	Relevant Unpriced PO copy along with proof of supply (invoice copy / SRV/ CRAC/ Completion certificate) to be submitted.	
3	Bidders must accept the Technical Requirement of BHEL standard specification AA10152 Rev. 07.	Bidder to give their confirmation that their supply will be inline with BHEL spec. AA10152 Rev. 07.	

Notes:

- Compliance to above Pre-qualification requirements are mandatory. In the absence of compliance of above requirement Bidder's Offer is liable to be rejected.
- Offers of vendors who are on BHEL MISCC/ unit/corporate level hold or banned/debarred, will not be considered.
- BHEL reserves the right to accept the offer in part or in full or cancel the tender enquiry without assigning any reason.
- BHEL has right to verify information / confirmation furnished by asking additional documents, proofs etc.
- All T&C shall be governed as per GeM Standard T&C. In case of discrepancies, T&C mentioned as above will be considered.

DECLARATION (To be given by Bidder)

GeM Bid No.....

Item Description:

With reference to above reference bid, we M/s..... (Bidder's Name)
confirm/declare the following.

1. Quoted Make-.....

2. We are OEM or Reseller -

3. Valid OEM Authorization certificate with OEM's Contact Details attached (In case of reseller)
- Yes / NA

4. We confirm Nil deviation from GeM bid document (NIT).

Note:

1. OEM details such as name, designation, address, e-mail Id and Phone number required to be furnished along with the technical bid. (also refer ATC clause).

2. Commercial Deviation/deviation in delivery shown separately or found hidden in the offer, will not be taken cognizance of.

(Vendor's Seal & Sign)

MAKE IN INDIA format (to be filled by OeMs of the participating bidders)

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL

MATERIAL MANAGEMENT – STEEL DIVISION

For this Procurement, Government of India Public Procurement (Preference to Make in India), Order 2017 with its amendments and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

*As per the Provisions of this order, please submit **a self-certification complying with the conditions below on company letterhead duly signed by competent authority.***

I, hereby declare on behalf of M/s. that we are participating in the Enquiry No. floated by BHEL, Bhopal (MP), India and shall comply with following:

1. Public Procurement (Preference to Make in India), Order 2017 *with its amendments* and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

(a) A supplier will be treated as “**Class-I Local Suppliers**”, if the items quoted by bidder have local content equal to or more than 50%.

(b) ‘**Local Content**’ means the amount of value added in India, which shall be total value of item quoted (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, **in percent**.

2. I hereby declare that our firm qualifies as “**Class-I Local Suppliers**”.

a. The Local Content in the items quoted under this Enquiry is Percent

b. Details of location(s) in India where this value addition shall be done, is/are as follows:

- (a)
- (b)
- (c)

(.....)

For M/s.

(Seal & Sign)



CORPORATE PURCHASING SPECIFICATION

AA10152

Rev No. 07

PAGE 1 of 4

STEEL TUBES – ELECTRIC RESISTANCE WELDED / SUBMERGED ARC WELDED

1.0 GENERAL:

This specification governs the quality requirements of light, medium and heavy grades of Electric Resistance Welded/Submerged Arc Welded steel tubes with plain ends in ungalvanized and galvanized condition in the range of 60mm to 150mm NB.

2.0 APPLICATION:

For general purpose, suitable for bending, welding and screwing for flanges and fittings.
Not suitable for steam services.

3.0 CONDITION OF DELIVERY:

Tubes shall be supplied with plain ends.

The ends shall be cut cleanly and square with the axis of the tube.

Unless otherwise specified, tubes shall be supplied in ungalvanized condition.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following National standard and also meet the requirements of this specification.

IS: 1239(part 1) – 2004: Steel Tubes, Tubular and other Wrought Steel Fittings
Gr: ERW.

5.0 DIMENSIONS AND TOLERANCES:

5.1 Sizes:

BHEL order shall clearly state the maximum outside diameter, and wall thickness of the tube.

5.2 Tolerances:

5.2.1 Thickness:

Light tubes + not limited
- 8 percent

Medium and Heavy tubes + not limited
 - 10 percent

Revisions:
Corrected the Clause 11.4 in line with IS 1239 (Part 1)

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(S&GPS)

Rev No.07

Amd No.

Reaffirmed

Prepared
HEP, Bhopal

Issued
Corp.R&D

Dt. of 1st Issue
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Dt:05-01-2015

Dt:

Year:2020

AA10152

Rev No. 07

PAGE 2 of 4

CORPORATE PURCHASING SPECIFICATION



5.2.2 Weight:

Single tube (light series)	+ 10 percent – 8 percent
Single tube (medium and heavy series)	± 10 percent
For quantities per load of 10 tonnes, min (light series)	+ 7.5 percent – 5 percent
For quantities per load of 10 tonnes, min (medium and heavy series)	± 7.5 percent

5.2.3 Internal Weld Fin:

Height of the internal weld fin shall not be greater than 60 percent of the specified thickness.

5.2.4 Length:

5.2.4.1 Random Length:

Tubes shall be supplied in random lengths of 4 to 7 meters, unless otherwise specified and in the line with IS: 1239, Part 1.

5.2.4.2 Exact Length:

When exact lengths are called for, the tolerances shall be + 6 mm, – 0 mm of the specified length.

6.0 MANUFACTURE:

Tubes shall be made from tested quality steel manufactured by any approved process and shall be fully killed.

Tubes shall not be manually welded.

7.0 FREEDOM FOR DEFECTS:

Tubes shall be cleanly finished and reasonably free from injurious defects. They shall be reasonably straight. The ends shall be cut cleanly and reasonably square with the axis of the tube.


8.0 CHEMICAL COMPOSITION:

The melt analysis of steel shall be as follows:

Element	Percent max.	Permissible variation over specified limit, ± max
Carbon	0.20	0.02
Manganese	1.30	0.04
Sulphur	0.040	0.005
Phosphorus	0.040	0.005

9.0 GALVANIZING:

When galvanized tubes are ordered, the Zinc coating on the tubes shall be in accordance with IS: 4736

	CORPORATE PURCHASING SPECIFICATION	AA10152
		Rev No.07
		PAGE 3 of 4

10.0 TEST SAMPLES:

All tubes bearing the same designation and manufactured under a single process shall be grouped together to constitute a lot. Each lot shall be sampled separately in accordance with IS: 4711

11.0 MECHANICAL PROPERTIES:

11.1 Tensile:

The tensile strength of strips cut from selected tubes, when tested in accordance with IS: 1608 shall be as follows:

Tensile strength : 320 N/mm², min.

Elongations on $5.65\sqrt{S_0}$ gauge length:

Up to and including. 25 mm NB : 12 percent, min.
Over 25 mm up to including 150 mm NB : 20 percent, min.

Note:

1. For welded tubes, the strip tensile test specimen shall not contain the weld.
2. For galvanized tubes, zinc coating may be removed by stripping prior to tensile test.

11.2 Bend Test (On tubes up to and including 50mm nominal bore):

When tested in accordance with IS: 2329, the tubes shall be capable of withstanding the bend test without showing any signs of fracture or failure.

Tubes shall be bent with the weld at 90° to the plane of bending. The tubes shall not be filled for this test.

Ungalvanised tubes shall be capable of being bent cold without cracking, through 180° around a former having a radius at the bottom of groove in the plane of bending equal to at least six times the outside diameter of the tube.

Galvanized tubes shall be capable of being bent cold without cracking of the steel, through 90° round a former having a radius at the bottom of the groove equal to at least eight times the outside diameter of the tube.

11.3 Flattening Test (On tubes above 50mm nominal bore):

Rings not less than 40mm in length, cut from the end of each selected tubes shall be flattened between parallel plates with the weld at 90°(point of maximum bending) in accordance with IS:2328. No opening shall occur by fracture in the weld until the distance between the plates is less than 75 percent of the original outside diameter of the tube and no cracks or breaks on the metal elsewhere than in the weld shall occur until the distance between the plates is less than 60 percent of the original outside diameter.

Test rings may have the inner and outer edges rounded.

11.4 Hydraulic Test / Eddy Current Test:

Each tube shall withstand a test pressure of 5 N/mm² without showing leakage defects of any kind. The pressure shall be applied and maintained for a minimum period of 3 seconds for proof and inspection.

Note: Eddy current test may be done in place of Hydrostatic test as per the procedure in Annexure – B of IS: 1239, Part-1.

AA10152

Rev No. 07

PAGE 4 of 4

CORPORATE PURCHASING SPECIFICATION



12.0 TEST CERTIFICATES:

Three copies of test certificates shall be supplied, unless otherwise stated on the order.

In addition, to the above, 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:

AA10152: Rev. No.07: Steel Tubes – ERW/SAW

BHEL order No:

Supplier's Reference:

Name

Identification No.

Melt No.

Results of Tests:

Results of Chemical, Mechanical tests and Hydraulic/Eddy Current test.

13.0 PROTECTIVE COATING:

The tubes shall be protected with a rust preventive coating of varnish, externally throughout the length.

14.0 PACKING AND MARKING:

Each tube shall be plugged at both ends by means of tight fitting end caps.

The tubes shall be suitably packed in bundles/packages to prevent corrosion and damage during transit.

Each bundle/package shall bear the following information:

AA10152: Steel Tubes – ERW/SAW

BHEL Order No.

Consignment/Identification No.

Outside Diameter and Wall Thickness.

Supplier's Name

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1) IS: 1608

2) IS: 2328

3) IS: 2329

4) IS: 4736

5) IS: 4711