

**Enquiry items along with quantities:**

| It. No. | Size & Item description   | Technical requirement  | Quantity in Meters |
|---------|---|--|--------------------|
| 1       | 25 NB(34.2MM OD*3.26MM THK)MS TUBES ERW PLAIN ENDS SPECS AA10152REV07. IN LENGTH OF 4-7MTR. | 25 NB (34.2 MM OD X 3.26 MM THK) MILD STEEL TUBES ERW PLAIN ENDS TO MATERIAL SPECIFICATION AA10152 REV 07. TUBES TO BE SUPPLIED IN RANDOM LENGTH OF 4 TO 7 METERS. RUST PREVENTIVE COATING OF VARNISH TO BE APPLIED THROUGHOUT THE LENGTH. (QTY. TOLERANCE +/- 1 RANDOM LENGTH 4-7 MTRS. IS ACCEPTABLE). | 1050               |
| 2       | 50 NB(60.8MM OD*3.65MM THK)MS TUBE ERW PLAIN ENDS SPECS AA10152REV07. IN LENGTH OF 4-7MTR.  | 50 NB (60.8 MM OD X 3.65 MM THK) MILD STEEL TUBE ERW PLAIN ENDS TO MATERIAL SPECIFICATION AA10152 REV 07. TUBES TO BE SUPPLIED IN RANDOM LENGTH OF 4 TO 7 METERS. RUST PREVENTIVE COATING OF VARNISH TO BE APPLIED THROUGHOUT THE LENGTH. (QTY. TOLERANCE +/- 1 RANDOM LENGTH 4-7 MTRS. IS ACCEPTABLE).  | 315                |
| 3       | 100 NB(115MM OD*4.50MM THK)MS TUBE ERW PLAIN ENDS SPECS AA10152REV07. IN LENGTH OF 4-7MTR.  | 100 NB (115 MM OD X 4.50 MM THK) MILD STEEL TUBE ERW PLAIN ENDS TO MATERIAL SPECIFICATION AA10152 REV 07. TUBES TO BE SUPPLIED IN RANDOM LENGTH OF 4 TO 7 METERS. RUST PREVENTIVE COATING OF VARNISH TO BE APPLIED THROUGHOUT THE LENGTH. (QTY. TOLERANCE +/- 1 RANDOM LENGTH 4-7 MTRS. IS ACCEPTABLE).  | 315                |
| TOTAL   |   |  | 1680               |

Quantity variation as per below:

**Item-1**, Supplies quantity are to be restricted between 1050 Meters & 1000 Meters.

**Item-2**, Supplies quantity are to be restricted between 315 Meters & 300 Meters.


**Item-3**, Supplies quantity are to be restricted between 315 Meters & 300 Meters.

**Technical Pre-qualifying Criteria (PQC) for CS ERW Pipes**

(PI No - 132626001 dt: 03/03/2023)

Rev-00 dt.-03/03/2023

- 1 Make of pipe should be from PGCIL approved source in line with its compendium of vendors, dt - 06/04/2021 viz. Jindal, Surya Roshni, APL Apollo Tubes Ltd, Ajanta & Maharashtra seamless ltd. Other sources are not acceptable.
- 2 Offers of those parties will be considered who or their Manufacturer has supplied "Carbon Steel ERW pipe" during last 04(Four) years from the date of tender opening. The relevant PO copies along with proof of supply (Invoice copy / completion certificate etc.) to be submitted with technical offer.

  
अनिल मरकम / ANIL MARKAM  
AGM (FTM)  
अपुत्र महाप्रबन्धक / Addl. General Manager  
एफ. टी. एम. विभाग / FTM Division  
बी.एच.ई.एल., भोपाल / B.H.E.L., Bhopal

  
ए. ए. डुंगुंग / A. A. DUNGUNG  
प्रबन्धक / Manager  
(Anuj Amit Durgong)  
एच.टी.एम. विभाग / FTM Fabrication  
बी.एच.ई.एल. भोपाल / B.H.E.L. Bhopal  
MGR (FTM)

**Note-**

**ALL THE ABOVE POINT WISE PRE-QUALIFICATION REQUIREMENT ARE TO BE NECESSARILY ACCEPTED BY THE BIDDERS FOR THEIR OFFERS TO BE CONSIDERED FAILING WHICH OFFERS SHALL BE REJECTED.**

**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



## 5.2.2 Weight:

Single tube (light series) + 10 percent  
- 8 percent

Single tube (medium and heavy series)  $\pm 10$  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)  $\pm 7.5$  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, $\pm$ 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

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## 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/mm<sup>2</sup>, 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/mm<sup>2</sup> 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.

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## 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


## STANDARD QUALITY PLAN

| <b>QAP NO:</b>                |   | <b>QAP/TSD/FMS/10152</b>   |                          | <b>REV.02</b>             | <b>Date: 24/05/2018</b>     |                       |                              |            |                |
|-------------------------------|---|--|--------------------------|---------------------------|-----------------------------|-----------------------|------------------------------|------------|----------------|
| <b>CUSTOMER:</b>              |   | <b>BHEL BHOPAL</b>   |                          |                           | <b>VENDOR NAME:</b>         |                       |                              |            |                |
| <b>DESCRIPTION MATERIALS:</b> |   | <b>STEEL TUBES - ELECTRIC RESISTANCE WELDED/SUBMERGED ARC WELDED</b> |                          |                           |                             |                       |                              |            |                |
| <b>SPECIFICATION</b>          |   | <b>AA10152</b>   |                          | <b>Rev. No.</b>           | <b>07</b>                   |                       |                              |            |                |
| <b>P.I./ENQ.NO. /P.O. NO.</b> |   |  |                          | <b>Date:</b>              |                             |                       |                              |            |                |
| <b>Sr. No.</b>                | <b>Characteristics</b>  | <b>Class</b>   | <b>Quantum of check</b>  | <b>Reference Document</b> | <b>Acceptance Norm</b>      | <b>Type of record</b> | <b>Inspection By</b>         |            | <b>Remarks</b> |
|                               |   |  |                          |                           |                             |                       | <b>Vendor / Manufacturer</b> | <b>TPI</b> |                |
| 01                            | Visual Check  | Maj  | 100%                     | AA10152                   | As per Spec                 | Test Report           | 100% (P)                     | 10% (W)    |                |
| 02                            | Dimensional Inspection (Measurement)  | Maj.   | As per Spec              | AA10152                   | As per Spec                 | Dimensional Report    | P (SAS)                      | W (RS)     |                |
| 03                            | Marking On Pipes (Visual)   | Maj.   | 100%                     | AA10152                   | As per Spec                 | Test Report           | 100% (P)                     | W (RS)     |                |
| 04                            | Mill Test Certificate (Document)  | Maj  | 100%                     | AA10152                   | As per Spec                 | MTC                   | RR                           | RR         |                |
| 05                            | Mechanical properties: (Tensile, Elongation, Flattening & Bend) As applicable | Maj  | As per Spec/IS: 1239 P-I | AA10152                   | As per Spec                 | Test Report           | P(SAS)                       | W(RS)      |                |
| 06                            | Chemical Properties (Chemical composition)                                    | Maj  | As per Spec/IS:1239 P-I  | AA10152                   | As per Spec                 | Test Report           | P(SAS)                       | W(RS)      |                |
| 07                            | Hydro Static Test: Hydraulic Test/Eddy Current Test                           | Maj  | 100%                     | AA10152                   | (As per Spec /IS: 1239 P-I) | MTC                   | 100% (P)                     | RR         |                |

**Legends:** Maj = Major, MTC=Mill Test Certificate, P=Perform, W=Witness, SAS= Sampling as per Specification, RR= Record Review, RS = Random Sample, Test Report = Vendor Test Report.

Prepared By

*Amal*

  
 24/5/18  
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