



## CORPORATE PURCHASING SPECIFICATION

AA 104 55

Rev. No. 09

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### CARBON STEEL SEAMLESS PIPES FOR HIGH TEMPERATURE SERVICE

#### ORDERING DESCRIPTION FOR ASME SA 106, Gr.: B

#### 1.0 GENERAL:

The pipes shall conform to the latest version for ASME SA 106, Gr:B and comply with the following additional requirements.

#### 2.0 APPLICATION

For high temperature service at stress levels and temperatures allowed by ASME Boiler & Pressure Vessel Code, Section I & Indian Boiler Regulations.

#### 3.0 DIMENSIONS AND TOLERANCES:

##### 3.1 Sizes:

Pipe OD X Thickness shall be as specified on BHEL order. Unless otherwise specified, pipes shall be supplied in single random lengths of 4.8 to 6.7 metres.

##### 3.2 TOLERANCES:

As per ASME SA 530.

#### 4.0 MANUFACTURE:

Either hot finished or cold drawn.

#### 5.0 CHEMICAL COMPOSITION:

Carbon content shall be restricted to 0.25% , max.

#### 6.0 MECHANICAL PROPERTIES:

##### 6.1 Bend Test:

One pipe per melt/size upto 60.3 mm OD (nominal size) shall be subjected to bend test as per ASME SA 106.

##### 6.2 Flattening:

One pipe per melt / size over 60.3 mm OD (nominal size ) shall be subjected to flattening test at one end of the pipe as per ASME SA 106.  
For pipes of sizes 10 inches and above (  $\geq 254$  mm) may be bend tested as per ASME SA 106.

#### Revisions :

Cl: 28.8.6 of MOM of MRC-FCF+HTM

#### APPROVED :

INTERPLANT MATERIAL RATIONALISATION  
COMMITTEE-MRC (FCF+HTM)

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**7.0 HYDROSTATIC TEST / NDT:**

Each length of pipe shall be subjected to Hydrostatic test as per ASME SA 530.

As an alternative to the Hydrostatic test, each length of pipe shall be subjected to NDT as given below:

- a) For thickness upto 3.6mm, inclusive, Eddy current test as per ASME SE 309 or for thickness upto 12mm, inclusive, Flux leakage test as per ASME SE 570.  
or
- b) Ultrasonic test as per ASME SE 213.

Norms of acceptance shall be as specified in the respective standards mentioned above.

**8.0 INSPECTION AT SUPPLIER'S WORKS:**

BHEL's representative shall have free access at all times to all parts of the manufacture's works, until the work on the contract of BHEL is being performed. The manufacturer shall offer BHEL's representative all reasonable facilities, without charge, to satisfy the latter that the material is being furnished in accordance with the specification.

**9.0 REPAIRS:**

- 9.1 Repair involving fusion welding is prohibited.
- 9.2 When defects are repaired by mechanical means, the wall thickness requirements shall be satisfactorily met with and the surfaces shall be smoothly dressed up without any sharp edges.

**10.0 CERTIFICATION:**

Test certificate shall be provided as per IBR FORM-III D issued by WELL KNOWN PIPE MAKER who is recognised by Central Boiler Board. Copy of certification of recognition as Well Known Pipe Maker in FORM XVI - G shall also be enclosed along with the test certificate.

**Note:** In lieu of IBR form III-D, the manufacturer can also submit test certificate in IBR form III-A duly inspected by IBR approved agency with prior written permission from BHEL."

**11.0 PACKING AND MARKING:**

As per BHEL Standard AA 049 00 01.

**12.0 REJECTION AND REPLACEMENT:**

If each length of pipe does not comply with the requirements of this specification during receipt inspection at BHEL or if any defect is found during further processing of pipes BHEL reserves the right to reject the whole consignment and the supplier shall replace the material free of cost. The rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.