



CORPORATE PURCHASING SPECIFICATION

AA 107 55

Rev. No. 07

PREFACE SHEET

**SEAMLESS STAINLESS STEEL PIPES (AUSTENITIC, Ti STABILIZED)
(ASTM A 312, TP 321)**

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE SHEET BEFORE ISSUE TO SUPPLIERS

Comparable Standards:

- | | | |
|-------------|---|-------------------------------------|
| 1. AMERICAN | : | ASTM A 312
Gr.: S 32100 (TP 321) |
| 2. EUROPEAN | : | DIN 17458, Gr.:X6CrNiTi18-10. |

Suggested/Probable Suppliers And Grades:

Refer Plant Vendors list

User Plant References:

- | | | |
|-------------------|---|----------------------------------|
| 1. HEEP - HARDWAR | : | HW 021 02 99 |
| 2. BHOPAL | : | PS 105 29 |
| 3. HYDERABAD | : | AISI 321, ASTM A 312, Gr.:TP 321 |
| 4. TIRUCHY | : | ASTM A 312, Gr.: TP 321 |

Revisions :
CI 27.6.27 of MOM of MRC-S&GPS

APPROVED :
INTERPLANT MATERIAL
RATIONALIZATION COMMITTEE (MRC-S&GPS)

Rev.No. 07	Amd.No.	Reaffirmed	Prepared	Issued	Dt. of 1st Issue
Dt.:15.06.2005	Dt :	Year :	HARDWAR	Corp. R&D	JUNE, 1978

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PAGE 1 OF 2

**SEAMLESS STAINLESS STEEL PIPES (AUSTENITIC, Ti STABILIZED)
(ASTM A 312, TP 321)****ORDERING DESCRIPTION FOR ASTM A 312, TP 321****1.0 GENERAL:**

The pipes shall conform to the latest version for ASTM A 312, TP 321 and comply with the following additional requirements.

2.0 APPLICATION

For corrosion resistant applications.

3.0 DIMENSIONS AND TOLERANCES:**3.1 Sizes:**

Pipe outside diameter and wall thickness shall be as specified in BHEL order. Unless otherwise specified, pipes shall be supplied in lengths of not less than 4.5 metres.

3.2 TOLERANCES:

As per ASTM A 999.

4.0 MANUFACTURE:

Either hot finished or cold drawn.

5.0 CHEMICAL COMPOSITION:

As per ASTM A 312, TP 321.

6.0 MECHANICAL PROPERTIES:

As per ASTM A 312 TP 321.

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.

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**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 as per ASTM A 999.

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.

FOR INFORMATAION ONLY**CHEMICAL COMPOSITION**

C	Si	Mn	Ni	Cr	S	P	Ti	N
≤ 0.08	≤ 1.0	≤ 2.0	9.0-12.0	17.0-19.0	≤ 0.030	≤ 0.045	5XC - 0.70	≤ 0.10

MECHANICAL PROPERTIES

Wall Thickness	0.2% PS min N/mm ²	UTS min N/mm ²	% EI min	
			Longitudinal	Transverse
≤ 9.52 cm	205	515	35	25
> 9.52 cm	170	415	35	25