

	CORPORATE PURCHASING SPECIFICATION	AA10755 Rev No.09 PREFACE SHEET																		
SEAMLESS STAINLESS STEEL PIPES (AUSTENITIC, Ti STABILIZED) (ASTM A312, TP321) FOR INTERNAL USE ONLY REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS Comparable Standards: <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">1. AMERICAN</td> <td style="width: 10%;">:</td> <td>ASTM A312, Gr.: S32100 (TP 321)</td> </tr> <tr> <td>2. EUROPEAN</td> <td>:</td> <td>EN 10216-2, Gr: X6CrNiTi 18-10</td> </tr> </table> Suggested/Probable Suppliers and Grades: Refer Plant Vendors list User Plants References: <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">1. HEEP, HARDWAR</td> <td style="width: 10%;">:</td> <td>HW0210299</td> </tr> <tr> <td>2. HEP, BHOPAL</td> <td>:</td> <td>PS10529</td> </tr> <tr> <td>3. HPEP, HYDERABAD</td> <td>:</td> <td>AISI 321, ASTM A312, Gr.:TP 321</td> </tr> <tr> <td>4. HPBP, TIRUCHY</td> <td>:</td> <td>ASTM A312, Gr.: TP 321</td> </tr> </table>			1. AMERICAN	:	ASTM A312, Gr.: S32100 (TP 321)	2. EUROPEAN	:	EN 10216-2, Gr: X6CrNiTi 18-10	1. HEEP, HARDWAR	:	HW0210299	2. HEP, BHOPAL	:	PS10529	3. HPEP, HYDERABAD	:	AISI 321, ASTM A312, Gr.:TP 321	4. HPBP, TIRUCHY	:	ASTM A312, Gr.: TP 321
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Revisions: As per Cl 39.16 of 39 th MOM of MRC – S&GPS		APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(S&GPS)																		
Rev No.09	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue															
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SEAMLESS STAINLESS STEEL PIPES (AUSTENITIC, Ti STABILIZED) (ASTM A312, TP321) ORDERING DESCRIPTION FOR ASTM A312, TP321																				
1.0 GENERAL: The pipes shall conform to the latest version for ASTM A312, 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 A999. 4.0 MANUFACTURE: Either hot finished or cold drawn. 5.0 CHEMICAL COMPOSITION: As per ASTM A312, 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 SA530. 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 ASTM E309 or for thickness upto 12mm, inclusive, Flux leakage test as per ASTM E570. or b) Ultrasonic test as per ASME SE213. 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 A999.

11.0 PACKING AND MARKING:

As per BHEL Standard AA0490001.

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 INFORMATION 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	% El min	
			Longitudinal	Transverse
≤ 9.52 cm	205	515	35	25
>9.52 cm	170	415	35	25