

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION		PY 52 099	
		PRODUCT STANDARD		Rev. No. 00	
		SEAMLESS PIPE STAINLESS STEEL ASTM A312GRTP304		Page 1 of 2	

COPYRIGHT AND CONFIDENTIAL

The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.

1.0 GENERAL

The Stainless Steel (SS) Seamless Pipes supplied according to this standard shall conform to the requirements of latest version of **ASTM A312 (Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes) Grade TP304** and comply with the following additional requirements.

2.0 MANUFACTURE:

- 2.1 The seamless pipes can be hot finished or cold finished.
- 2.2 Pipes shall be Heat treated as per ASTM A312.

3.0 CHEMICAL COMPOSITION:

Shall be as per the requirements of ASTM A312 Grade TP304.

4.0 MECHANICAL PROPERTIES:

Shall be as per the requirements of ASTM A312 Grade TP304.

5.0 DIMENSIONS AND TOLERANCES:

- 5.1 Pipe outside diameter and nominal wall thickness shall be as specified on BHEL order. They are specified in "mm", unless otherwise indicated and generally be as per ASME B36.10 and ASME B36.19.
- 5.2 Pipes shall be supplied in single random lengths of 4.5 to 7.3 metres, unless otherwise specified. No jointers are permitted.
- 5.3 Unless otherwise specified, Quantity Tolerance shall be as follows depending on the Ordered quantity:
 - 5.3.1 Upto 200m : $\pm 10\%$
 - 5.3.2 Above 200m upto 500m : $\pm 5\%$
 - 5.3.3 Above 500m : $\pm 20\%$
- 5.4 All other Tolerances shall be as per ASTM A312.

6.0 DESIGNATION:

A Stainless Steel seamless pipe of OD 168.3 mm and wall thickness of 7.11 mm supplied according to this standard, shall be designated as:

PIPE (SMLS) 168.3 X 7.11 SS A312GRTP304.

7.0 HYDROSTATIC TEST:

- 7.1 Each length of pipe shall be subjected to Hydrostatic test in accordance with specification ASTM A999.
- 7.2 As an alternative to the hydrostatic test, a full body examination of each pipe is permitted with a non-destructive electric test as per provisions of ASTM A999.

8.0 INSPECTION REQUIREMENTS:

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.

Refer Doc	LAYOUTS & PIPING ENGINEERING	PREPARED	CHECKED	APPROVED	DATE
		 CH MANOJ	 SRIKANTH G	 S B RAO	20.07.15

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52 099
		TECHNICAL SPECIFICATION	Rev. No. 00
		SEAMLESS PIPE STAINLESS STEEL ASTM A312GRTP304	Page 2 of 2

COPYRIGHT AND CONFIDENTIAL
The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED,
It must not be used directly or indirectly in any way detrimental to the interest of the company.

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 TEST CERTIFICATES:

- 10.1 Test Certification shall be as per ASTM A999.
- 10.2 Three copies of test certificates shall be supplied, unless otherwise stated on the order. In addition, 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:

PY52099: SEAMLESS PIPE STAINLESS STEEL ASTM A312GRTP304

BHEL order No:

Manufacturer's Reference:

Manufacturer's Name:

Identification No:

Melt No:

Results of Tests:

- Results of Dimensional inspection.
- Results of Chemical Analysis, Mechanical Tests, Hydraulic/NDE tests.

11.0 PACKING AND MARKING:

Packing and Marking shall be as per BHEL Corporate 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/Project site 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.

+++

RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	20.07.2015	FIRST ISSUE	 SRIKANTH G	 S B RAO