

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52 060
		PRODUCT STANDARD	Rev. No. 03
		GALVANISED CS/MS PIPES (SEAMLESS/WELDED)	Page 1 of 5

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GALVANISED CARBON STEEL / MILD STEEL PIPES (SEAMLESS / WELDED) ORDERING SPECIFICATION

1.0 GENERAL

- 1.1 This specification is applicable for Galvanized Carbon Steel (Seamless) Pipes and Galvanized Mild Steel Pipes (Seamless / Welded).
- 1.2 The Pipes supplied according to this specification shall conform to the requirements of latest version of
 - 1.2.1 ASTM A106 Grade B for Galvanized Carbon Steel (Seamless) Pipes
 - 1.2.2 IS 1239 (Part – 1) / IS 3589 for Galvanized Mild Steel (Seamless/Welded) Pipes.
and shall comply with the following additional requirements.
- 1.3 These pipes shall be suitable for Instrument Air, Potable Water and Spray Water applications.

2.0 MANUFACTURE:

- 2.1 Type of Pipe (CS according to A106 / MS according to IS 1239 / MS according to IS 3589) shall be as per BHEL Order.
- 2.2 **CS Pipes (Seamless) According to A106:**
 - 2.2.1 The seamless pipes can be manufactured either from hot finished or cold drawn process. Cold drawn pipes shall be Heat treated as per ASTM A106.
 - 2.2.2 The pipes shall be supplied with NPT-M Screwed Ends upto nominal Pipe Size of 100 NB and with Bevel Ends above nominal Pipe size of 100NB.
- 2.3 **MS Pipes (Seamless / Welded) According to IS 1239 (Part-1):**
 - 2.3.1 The method of manufacture (Seamless / Welded) shall be as per BHEL order. Welded Pipes can be manufactured from either of the Processes ERW or SAW.
 - 2.3.2 The pipes shall be supplied with NPT-M Screwed Ends upto nominal Pipe Size of 100 NB and with Bevel Ends above nominal Pipe size of 100NB.
- 2.4 **MS Pipes (Seamless / Welded) According to IS 3589:**
 - 2.4.1 The method of manufacture (Seamless / Welded) shall be as per BHEL order. Welded Pipes can be manufactured from either of the Processes ERW or SAW.
 - 2.4.2 The applicable grade of steel (Fe330/Fe410/Fe450) shall be as per BHEL order.
 - 2.4.3 The pipes shall be supplied with Bevel Ends.
- 2.5 The Zinc coating on the pipes shall be in accordance with IS 4736. Pipes to be galvanized before screwing.

3.0 CHEMICAL COMPOSITION:

Shall be as per the requirements of ASTM A106 Grade B / IS 1239 (Part-1) / IS 3589, depending on the type of Pipe.

Refer Doc	LAYOUTS & PIPING ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED	CHECKED	APPROVED	DATE
		 G SRIKANTH	 G SRIKANTH	 VVSS SUNDAR	12.03.15

Form No:

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BHEL

PE&SD

BHARAT HEAVY ELECTRICALS LIMITED

PROJECT ENGINEERING & SYSTEMS DIVISION

TECHNICAL SPECIFICATION

GALVANISED CS/MS PIPES (SEAMLESS/WELDED)

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4.0

DIMENSIONS AND TOLERANCES:

4.1

Pipe Size (NB) / Pipe OD and Wall Thickness shall be as per BHEL order.

4.2

Unless specified otherwise, pipes shall be supplied in single random lengths of 5 to 7 meters. No jointers are permitted.

4.3

Unless otherwise specified, Quantity Tolerance shall be as follows depending on the Ordered quantity:

4.3.1

Upto 200m

: ± 10%

4.3.2

Above 200m upto 500m

: ± 5%

4.3.3

Above 500m

: ± 20m

4.4

All other Tolerances shall be as per ASTM A106 / IS 1239 (Part-I) / IS 3589, depending on the type of Pipe.

5.0

DESIGNATION:

Eg. PIPE (WELDED) MS 50 NB HVY IS1239 (GALV)

6.0

TESTING REQUIREMENTS:

All the applicable tests as per the requirements of ASTM A106 / IS 1239 (Part-I) / IS 3589, depending on the type of Pipe, shall be carried out successfully.

7.0

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.

8.0

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 ASTM A106/IS: 4711, depending on the type of Pipe.

9.0

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:
PY52060: ASTM A106GrB / IS1239 (part1)/IS3589 Galvanized Steel Pipes
BHEL order No:
Supplier's Reference:
Name:
Identification No:
Melt No:
Results of Tests: Results of Chemical, Mechanical tests and Hydraulic/Eddy Current test

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10.0 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:
PY52060: ASTM A106GrB / IS1239 (part1)/IS3589 Galvanized Steel Pipes
BHEL Order No:
Consignment/Identification No:
Nominal bore, Outside Diameter and Wall Thickness:
Supplier's Name:

11.0 TECHNICAL DELIVERY CONDITIONS:

For all the requirements not listed in this specification, BHEL Corporate Standard **AA0490001** shall be referred.

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VARIANT TABLE:

Var No	Pipe NB	Pipe Wall Thickness	Manufacturing Standard	Manufacturing Process	BHEL Material Code
01	15	HVY	IS 1239 P-1	SEAMLESS	PY9752060013
02	20	HVY	IS 1239 P-1	SEAMLESS	PY9752060021
03	25	HVY	IS 1239 P-1	SEAMLESS	PY9752060030
04	40	HVY	IS 1239 P-1	SEAMLESS	PY9752060048
05	50	HVY	IS 1239 P-1	SEAMLESS	PY9752060056
06	80	HVY	IS 1239 P-1	SEAMLESS	PY9752060064
07	65	HVY	IS 1239 P-1	SEAMLESS	PY9752060072
08	100	HVY	IS 1239 P-1	SEAMLESS	PY9752060080
09	15	HVY	IS 1239 P-1	WELDED	PY9752060099
10	20	HVY	IS 1239 P-1	WELDED	PY9752060102
11	25	HVY	IS 1239 P-1	WELDED	PY9752060110
12	40	HVY	IS 1239 P-1	WELDED	PY9752060129
13	50	HVY	IS 1239 P-1	WELDED	PY9752060137
14	80	HVY	IS 1239 P-1	WELDED	PY9752060145
15	100	HVY	IS 1239 P-1	WELDED	PY9752060153
16	32	HVY	IS 1239 P-1	WELDED	PY9752060161
17	150	HVY	IS 1239 P-1	WELDED	PY9752060170
18	200	6.3	IS 3589	WELDED	PY9752060188
19	250	6.3	IS 3589	WELDED	PY9752060196
20	65	HVY	IS 1239 P-1	WELDED	PY9752060200
21	15	SCH 80	A106GRB	SEAMLESS	PY9752060218
22	20	SCH 80	A106GRB	SEAMLESS	PY9752060226
23	25	SCH 80	A106GRB	SEAMLESS	PY9752060234
24	40	SCH 80	A106GRB	SEAMLESS	PY9752060242
25	50	SCH 40	A106GRB	SEAMLESS	PY9752060250
26	80	SCH 40	A106GRB	SEAMLESS	PY9752060269
27	100	SCH 40	A106GRB	SEAMLESS	PY9752060277

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RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	12.03.2015	FIRST ISSUE	G KALYAN	SRIKANTH G
01	12.08.2015	ADDED WELDED PIPE CODES	G KALYAN	SRIKANTH G
02	15.02.2018	SPECIFICATION TITLE RENAMED AND VARIANTS 17 TO 19 ADDED	U PRADEEP	SRIKANTH G
03	20.11.2018	ASTM A106 PIPES INCLUDED, VARIANT TABLE UPDATED AND GENERALLY REVISED.	U PRADEEP	SRIKANTH G

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