



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY 10699

Rev. No. 01

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**ALLOY STEEL PRESSURE VESSEL PLATES FOR ELEVATED
TEMPERATURE SERVICE**

**(ORDERING DESCRIPTION FOR ASME: SA 387 Gr : 12 CLASS 2
WITH S1, S3, S5 AND S8)**

1.0 GENERAL:

The material and other requirements shall comply with the latest version of ASME : SA 387, Gr : 12 class 2, with the following additional requirements.

2.0 APPLICATION:

For fabrication of pressure vessels and heat exchangers as per ASME Boiler and Pressure Vessel code or Indian Boiler Regulations (IBR) requiring S1, S3, S5 and S8 supplementary requirements as per SA 387.

3.0 CONDITION OF DELIVERY:

The plates shall be supplied in Normalised and Tempered condition.

4.0 DIMENSIONS:

4.1 The thickness of the plate shall be as specified in the Purchase Order.

4.2 Unless otherwise specified in the Purchase Order, plates shall be supplied to size 2500 mm (w) x 5000 mm (l).

5.0 CHEMICAL COMPOSITION:

Chemical Composition shall be as per SA 387, Gr: 12.

6.0 VACUUM TREATMENT:

Plates shall be vacuum degassed as per supplementary requirement S1 of ASME SA 387.

Revisions:
MOM between HE Engg. & MES
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7.0 SIMULATED POST WELD HEAT TREATMENT (SUPPLEMENTARY REQUIREMENT S3) OF MECHANICAL TEST COUPONS:

The test coupons representing the plate shall be thermally treated after the final Heat treatment. The simulated post weld heat treatment cycles shall be selected as per ASME SEC.VIII Div. I (UCS-56).

8.0 LOW TEMPERATURE IMPACT TEST:

Charpy V-Notch impact test (at 0°C or lower) shall be conducted as per supplementary requirement S5 of SA387. The impact energy shall be 28 J minimum (average of 3 values). One value can be lower than 28 J but not less than 21 J. All the three values shall be reported in the test Certificate.

9.0 ULTRASONIC TEST:

Plates of all thickness shall be ultrasonically examined in accordance with ASTM A435, as per supplementary requirements S8 of ASME SA 387.

10.0 REPAIRS:

- 10.1 Repair of defects by welding is not permitted.
- 10.2 When other does repairs mechanical means the minimum plate thickness shall be met with and the surface shall be smoothly dressed up to avoid sharp edges.

11.0 INSPECTION:

- 11.1 If the material is purchased from WELL-KNOWN STEEL MAKER as approved by IBR (Indian Boiler Regulations) then inspection by any other third party inspection agency is not necessary unless it is specifically mentioned on the order.
- 11.2 In case of procurement from other suppliers all plates shall be inspected at supplier's works by an Inspection authority recognised by IBR and the test certificates shall be attested to that effect.

12.0 INSPECTION AT SUPPLIER'S WORKS:

- 12.1 BHEL representative / BHEL appointed Inspection Agency shall have free entry and access to all areas where the manufacture of the bars is carried out. All reasonable facilities shall be extended to him including labour wherever necessary.
- 12.2 BHEL representative / BHEL appointed Inspection Agency shall be given sufficient advance intimation to witness the various processes, tests etc. Punching and identification of test coupons and execution of various tests shall be done in presence of BHEL representative / BHEL appointed Inspection Agency.



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13.0 TEST CERTIFICATE:

Three copies of the test certificates shall be furnished in English as per IBR form IV.

14.0 PRESERVATION :

Plates 10 mm and below shall be coated with suitable rust preventive.

15.0 MARKING:

The following details shall be hard punched on each plate, near the edge and encircled with the white paint.

BHEL Specification No. HY 10699 Rev.01

ASME: SA 387,Gr. 12 Cl.2

Melt No:

Supplier's Name:

Inspection authority's mark:

Material Code No:

16.0 REJECTION & REPLACEMENT:

In the event of the material proving defective in the course of further processing at BHEL, the same shall be rejected notwithstanding any previous acceptance. The supplier shall replace the material forging at his own cost and the rejected material shall be returned after all the commercial conditions are satisfied.