HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL PLATES

1.0 GENERAL:

This Specification governs the requirements of High Strength Low-Alloy Structural Steel Plates.

2.0 APPLICATION :

For fabrication of Oil Rig Components which require good resistance to atmosphere corrosion.

3.0 CONDITION OF DELIVERY:

Hot / Cold rolled, Normalized condition.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

The plates shall comply with the latest version of ASTM A588, Gr.A.

5.0 DIMENSIONS AND TOLERANCES :

5.1 Dimensions: Shall be as specified in the purchase order. Unless otherwise specified, plates shall be supplied in the standard dimension of 6' x 13' (1830mm x 3962mm).

5.2 Tolerances: Shall be as per ASTM:A6.

6.0 MANUFACTURE:

The steel shall be manufactured by one of the following process: Open hearth, basic oxygen or electric furnace. The steel shall be made to fine grain practice.

7.0 HEAT TREATMENT:

The material shall be supplied in the normalized condition.

8.0 CHEMICAL COMPOSITION:

The Melt analysis of material shall be as follows:

Element		C	Mn	Si	Ni	Cr	Cu	V	P	S
	Min	--	0.80	0.30	-	0.40	0.25	0.02	-	-
	Max	0.19	1.25	0.65	0.40	0.65	0.40	0.10	0.040	0.050
Permissible Variation in Product analysis		+ 0.04	+ 0.10 - 0.08	± 0.05	+ 0.03	± 0.04	± 0.03	± 0.01	+ 0.010	+ 0.010

9.0 MECHANICAL PROPERTIES:

The mechanical properties of the different groups of the sections shall be follows:

Thickness of the plate mm	Tensile Strength N/mm^2 Min.	Yield Strength, N/mm^2 Min	% Elongation Min.
			L=50 mm (L=4d)
Below 100	485	345	21
>100≤125	460	315	21
>125≤200.0	435	290	21

NOTE:

1) For plates wider than 610mm test specimen is taken in the transverse direction as per ASTM 6 Clause 11.2.

.2) For plates wider than 610mm, the elongation requirement is reduced by two percentage points.

10.0 INSPECTION AT SUPPLIER'S WORKS:

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.

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.

11.0 TEST CERTIFICATE:

Five copies of the certificates giving the following details shall be furnished.

a) BHEL Order No.
b) BHEL Specification No. HY 105 75 / Rev.01
c) ASTM A588, Gr:A
d) Melt No.
e) Consignment/Identification No.
f) Size
g) Results of Chemical analysis.
h) Results of Mechanical tests.

12.0 MARKING:

Each plate shall be punched with the following details and encircled by paint.

a) Melt No.
b) Supplier's identification mark

In addition to the above, the following details shall also be marked legibly on each plate.

c) BHEL Order No.
d) HY 10575/Rev. 01
e) ASTM A588, Gr.A
f) Size & Weight
g) Supplier's Name

13.0 REJECTION AND 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.