



# CORPORATE PURCHASING SPECIFICATION

AA 123 16

Rev. No. 03

PREFACE SHEET

## ALUMINIUM ALLOY PLATES, GR : 64430 (WP)

FOR INTERNAL USE ONLY  
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

### Comparable Standards:

1. INDIAN : IS : 736 – 1986  
Gr : 64430, Condition : WP
2. BRITISH : BS EN : 1982 – 2008

### Suggested/Probable Suppliers and Grades:

Refer plant vendors list.

### User Plant References:

1. BHOPAL : P.S. 12307  
P.S. 12308
2. HEER, HARDWAR : GOST - 7857

### Revisions :

CI: 24.1 of MOM of MRC-NFCW+HE

### APPROVED :

INTERPLANT MATERIAL RATIONALISATION  
COMMITTEE-MRC (NFCW+HE)

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## ALUMINIUM ALLOY PLATES, GR : 64430 (WP)

### 1.0 GENERAL:

This specification governs the quality of wrought aluminum alloy plates of 6 mm and above in thickness.

### 2.0 APPLICATION:

For general engineering purposes.

### 3.0 CONDITION OF DELIVERY:

Hot/Cold rolled. Solution heat-treated and precipitation treated. Plates shall be supplied flat with sheared, milled or sawn edges.

### 4.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following national standards and also meet the requirements of this specification.

IS: 736 – 1986, Gr: 64430 : Wrought Aluminum And Aluminum Alloy Plates For General Condition : WP : Engineering purposes.

### 5.0 DIMENSIONS AND TOLERANCES:

**5.1 Sizes:** Plates shall be supplied to the dimensions specified in BHEL order.

### 5.2 Tolerances:

Tolerance on thickness, shearing tolerance on length and width shall comply with IS : 2677.

### 6.0 HEAT TREATMENT:

The plates shall be solution heat-treated and subsequently precipitation hardened.

### 7.0 FREEDOM FROM DEFECTS :

The plates shall be sound and free from harmful defects such as scratches, cracks, laminations and other injurious imperfections.

### 8.0 CHEMICAL COMPOSITION :

The chemical composition of the material when analyzed in accordance with IS : 504 (Methods for chemical analysis of aluminum and its alloys) or any other suitable instrumental/chemical method shall be as follows:

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Element	Percent	
	Min	Max.
*Copper	--	0.1
Magnesium	0.4	1.2
Silicon	0.60	1.3
*Iron	--	0.6
Manganese	0.40	1.0
*Chromium	--	0.25
*Zinc	--	0.1
*Titanium and/or/ other grain refining elements	--	0.2
Aluminum	Remainder	

\*Note: These elements need not be determined when the material supplied conforms to the mechanical properties specified in this specification. However, the supplier shall ensure that the composition of the material lies within the limits specified above.

### 9.0 TEST SAMPLES:

- 9.1 One sample per heat shall be taken for chemical analysis.
- 9.2 Material of the same thickness, produced under similar conditions, shall be grouped into batches of not more than 4000 kg.
- 9.3 Before the test samples are cut off, they shall be marked to identify them with the batch they represent. The test samples shall be taken from the material as supplied and shall not be further heat treated or mechanically worked (except for preparing the test piece) before being tested. The test samples may be cut from the margins of the material before cutting it to size.
- 9.4 The tensile test piece shall be rectangular section having dimensions as given in IS: 1816 (Method of tensile test for light metals and their alloys) with a gauge length of 50 mm. The test piece shall be cut transverse to the direction of rolling for plates 300 mm wide and over, and parallel to the direction of rolling for plates under 300 mm wide. When the width of the material to be tested is insufficient to permit preparation of the standard tensile test piece, a piece of the full width of the material may be used.

### 10.0 RETEST:

Should any of the test pieces first selected fail, two further samples from the same batch shall be selected for testing, one of which shall be from the tube from which the original test sample was taken, unless the tube has been withdrawn by the supplier. Should the test pieces from both these additional samples pass, the batch represented by the test sample shall be deemed to comply with this specification. Should be test pieces from either of these additional samples fail the batch represented by these samples shall be deemed not to comply with this specification.



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### 11.0 MECHANICAL PROPERTIES:

The test pieces, when tested in accordance with IS : 1608 (Method for tensile tests for light metals and their alloys), shall show the following properties:

Tensile strength : 285 N/mm<sup>2</sup>, min.  
0.2% Proof Stress : 240 N/mm<sup>2</sup>, min.

Elongation on  
50 mm gauge length : 8%, min.

### 12.0 INSPECTION AT SUPPLIER'S WORKS

Tests and inspection are to be conducted in the presence of the customer's representative. The representative shall have free access at all times while the work on the contract is being performed, to all parts of the manufacture's works. The supplier shall offer the purchaser's representative all reasonable facilities, without charge, to satisfy the latter that the material is being furnished in accordance with this specification.

The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangement for carrying out the prescribed test elsewhere.

### 13.0 TEST CERTIFICATES:

The supplier shall submit 3 copies of test certificates giving the following information. 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.

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BHEL Order No,

Supplier's name :

Batch No.

Consignment/Identification No.

Results of chemical analysis, mechanical and all other tests as called for in this specification/ order

### 14.0 PACKING AND MARKING:

The material shall be suitably packed to prevent corrosion and damage during transit. Machined surfaces shall be properly protected with anti-corrosive compounds.

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Each package or crate shall be legibly marked with the following information :

BHEL Order No.

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BHEL Order No,

Supplier's Name.

Batch No.

Identification mark/No.

**15.0 REFERRED STANDARDS (Latest Publications Including Amendments):**

1. IS: 504    2. IS: 736    3. IS: 1608    4. IS: 2677