



CORPORATE PURCHASE SPECIFICATION

AA 123 28

Rev. No. 05

PREFACE SHEET

WROUGHT ALUMINIUM ALLOY BARS AND RODS Gr. 2014 (O), (ANNEALED)

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Comparable Standards:

1. AMERICAN : ASTM B 221 – 2008

Suggested/Probable suppliers and grades:

Refer plant vendor list

User Plant References:

1. HYDERABAD : A VIONAL –14 and HY 19999

Revisions :

Cl: 24.1 of MOM of MRC-NFCW+HE

APPROVED :

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE -MRC (NFCW+HE)

Rev. No. 05

Amd.No.

Reaffirmed

Prepared
HARDWAR

Issued
Corp. R&D

Dt. of 1st Issue
MARCH, 1978

Dt: 07.06.2012

Dt :

Year :



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WROUGHT ALUMINIUM ALLOY BARS AND RODS Gr: 2014 (O)

1.0 GENERAL:

This specification governs the quality requirements of aluminum – copper alloy bars and rods.

2.0 APPLICATION:

Seal rings and as forging stock for coil braces.

3.0 CONDITION OF DELIVERY: Annealed.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

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

ASTM B 221-2008: Standard specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

5.0 DIMENSIONS AND TOLERANCES:

5.1 Sizes: The material shall be supplied as per the dimensions specified in BHEL order.

5.2 Tolerance: Shall be as per ASTM B-221:

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6.0 MANUFACTURE:

The method of manufacture of the material shall be produced by hot extrusion or any other suitable process and subsequently annealed.

7.0 FREEDOM FROM DEFECTS:

The material shall be clean, smooth and free from fins, spills, porosity, cracks or other defects and shall be reasonably straight and free from twists.

The permissible limit of coarse grain envelope shall be as mutually agreed.

8.0 CHEMICAL COMPOSITION:

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

Element	Percent	
	min.	max.
Copper	3.9	5.0
Silicon	0.5	1.2
Manganese	0.4	1.2
Magnesium	0.2	0.8
* Iron	--	0.7
* Zinc	--	0.25
* Chromium	--	0.10
* Titanium	--	0.15
Total elements	--	0.15
Alluminium	Remainder	

***Note:** The elements need be determined only when the material supplied conforms with 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 Bars or rods manufactured under similar conditions shall be grouped into lots as follows:

Diameter or equivalent cross section, mm		Weight of each lot in kg.
Over	Upto and including	
--	10	1000
10	--	2000

9.2 One test sample shall be cut from a bar or rod selected at random from each lot.

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10.0 MECHANICAL PROPERTIES:

The material when tested in accordance with IS:1608 or any other reputed national standard shall show the following tensile properties:

Tensile strength, MPa, max.	: 205
0.2 % Proof Stress, MPa, max.	: 125
% of elongation in 5 x dia (5.65√A) , min.	: 10
% of elongation in 4 x dia (50mm G.L.), min.	: 12

11.0 RETEST:

Should any of the test pieces first selected, fail to pass the prescribed tests mentioned under various clauses in this specification, two further samples from the same batch shall be selected for testing, one of which shall be from the same component from which the original test sample was taken, unless that component has been withdrawn by the supplier.

Should the test pieces from the both these additional samples pass, the batch represented by the test samples shall be accepted. Should the test pieces from either of these additional samples fail, the batch represented by the test sample shall be rejected.

12.0 TEST CERTIFICATES:

The supplier shall submit three copies of test certificates alongwith the each consignment.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their despatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

AA 12328, Rev No. 05: Wrought aluminum alloy Bars and rods - Gr. 2014 (O).

BHEL order No.

Supplier's reference and Name

Batch No.

Consignment/Identification No.

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

13.0 PACKING AND MARKING:

The material shall be suitably packed in wooden crates to prevent corrosion and damage during transit. Each package or crate shall be legibly marked with the following information.

AA123 28: Wrought aluminum alloy Bars and rods - Gr. 2014 (O)

BHEL order No.

Batch No.

Identification Mark/No

Weight.

Supplier's reference and Name.

14.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1) IS: 504

2) IS: 1608

3) ASTM B 221