



ALUMINIUM ALLOY SHEETS, Gr: 52000 H2

1.0 GENERAL:

This specification governs the quality requirements of strain hardened and partially annealed Aluminium Alloy Sheets over 0.15 mm thick but less than 6 mm. .

2.0 APPLICATION:

For general engineering purposes.

3.0 CONDITION OF DELIVERY:

Strain hardened and partially annealed.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

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

IS:737-1986 (Reaffirmed 1996) | Aluminium Alloy Sheet And Strip For General
Gr: 52000, Condition: H2 | Engineering Purposes.

5.0 DIMENSIONS AND TOLERANCES:

5.1 Sizes:

The material shall be supplied to the dimensions specified in BHEL order.

5.2 Tolerances:

The tolerance on thickness, width and length shall comply with IS:2676.

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APPROVED :
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6.0 FREEDOM FROM DEFECTS

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

7.0 CHEMICAL COMPOSITION

The chemical composition of the material, when analysed in accordance with IS:504 (Methods of chemical analysis of aluminium and its alloys) or any other conventional/instrumental methods shall be as specified below:

Element	Percent, min	Percent, max.
*Copper	-	0.1
Magnesium	1.7	2.6
*Silicon	-	0.6
*Iron	-	0.7
*Manganese	-	0.5
*Zinc	-	0.2
*Chromium	-	0.25
*Titanium and/or other grain refining elements:	-	0.2
*Cr + Mn	-	0.5
Aluminium	Remainder	

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

8.0 TEST SAMPLES:

One sample per heat shall be taken for chemical analysis.

One sample per size per consignment per heat treatment batch shall be selected for mechanical tests.

**9.0 MECHANICAL PROPERTIES:****9.1 Tensile:**

The material, when tested in accordance with IS:1608 shall show the following properties:

Tensile strength : 230 - 275 N/mm²

0.2% proof stress : 175 N/mm², min.

Elongation on 50mm gauge length : 4%, min.
(For sizes >2.6mm but <6mm thick.)

9.2 Bend Test (For sizes 2.6mm and thinner):

The bend test piece shall be not less than 15mm wide of convenient length and cut with its larger axis transverse to the direction of rolling. The test piece shall not crack nor show any visible crack on the outer surface when bent through angle of 180⁰ around a former having a radius equal to the thickness of the piece.

10.0 INSPECTION AT SUPPLIER'S WORKS:

Whenever specified, tests and inspection are to be conducted in the presence of BHEL's representative.

BHEL's representative shall have free access at all the times while the work on the contract is being performed to all the parts of the manufacturer's works. 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 this specification. The manufacturer shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities do not exist at his works, the manufacturer shall make necessary arrangements for carrying out the prescribed tests elsewhere. The manufacturer shall notify BHEL's representative in advance about the readiness of the material for inspection and testing.

BHEL reserves the right to test the material at BHEL's works and the final acceptance of the material shall be based on these test results.

**11.0 TEST CERTIFICATES:**

Three copies of test certificates shall be supplied unless otherwise stated on BHEL order.

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:

BHEL order No

AA 123 14 (Rev.No. 02)- Aluminium Alloy Sheets, Gr: 52000 H2

Supplier's reference and name:

Batch No.:

Consignment/Identification No.:

Dimensional inspection.

Size and Weight

Results of Chemical and Mechanical tests as called for in this specification.

12.0 PACKING AND MARKING

The material shall be suitably packed to prevent corrosion and damage during transit.

Each package shall be legibly marked with the following information:

AA 123 14:

BHEL Order No.

Consignment/Identification No.

Size and Weight

Supplier's Name and reference.

13.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. IS: 504

2. IS: 737

3. IS: 1608

4. IS : 2676