AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 4036C
Superseding AMS 4036B
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# ALUMINUM ALLOY SHEET AND PLATE, ALCLAD ONE SIDE
## 4.4Cu - 1.5Mg - 0.60Mn (Alclad one side 2024; -T3 Sheet, -T4 Plate)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for structural use including chemically milled parts. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking; ARP 823 recommends practices to minimize such conditions.

3. COMPOSITION:

| Core (2024) | min | max |
|---|---|---|
| Copper | 3.8 | 4.9 |
| Magnesium | 1.2 | 1.8 |
| Manganese | 0.30 | 0.9 |
| Iron | -- | 0.50 |
| Silicon | -- | 0.50 |
| Zinc | -- | 0.25 |
| Chromium | -- | 0.10 |
| Other Impurities, each | -- | 0.05 |
| Other Impurities, total | -- | 0.15 |
| Aluminum | remainder | |

| Cladding (1230) | min | max |
|---|---|---|
| Iron + Silicon | -- | 0.7 |
| Copper | -- | 0.10 |
| Zinc | -- | 0.10 |
| Manganese | -- | 0.05 |
| Other Impurities, each | -- | 0.05 |
| Aluminum, by difference | 99.30 | -- |

4. CONDITION: Solution heat treated and leveled.

5. TECHNICAL REQUIREMENTS: The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.

5.1 Cladding Thickness: After rolling, the average cladding thickness on the clad side shall be as shown. Routine measurements are not required.

| Total Thickness of Composite Product Inch | Cladding Thickness % of Total Thickness, min |
|---|---|
| Up to 0.062, incl | 4.0 |
| Over 0.062 to 0.187, incl | 2.0 |
| Over 0.187 to 0.499, incl | 1.2 |







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5.2 Tensile Properties:

| Nominal Thickness Inch | Tensile Strength psi, min | Yield Strength at 0.2% Offset or at Extension Indicated (See 5.2.1) psi, min | Extension Under Load in. in 2 in. | Elongation % in 2 in. or 4D min |
|---|---|---|---|---|
| 0.010 to 0.020, incl | 61,000 | 40,000 | 0.0124 | 12 |
| Over 0.020 to 0.062, incl | 61,000 | 40,000 | 0.0124 | 15 |
| Over 0.062 to 0.249, incl | 63,000 | 41,000 | 0.0122 | 15 |
| Over 0.249 to 0.499, incl | 63,000 | 40,000 | 0.0120 | 12 |

5.2.1 Extension under load is based upon the following values of E:

| Nominal Thickness Inch | E |
|---|---|
| Up to 0.062, incl | 9,500,000 |
| Over 0.062 to 0.499, incl | 10,000,000 |

5.2.2 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.

5.3 Bending: Material shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of the material, with axis of bend parallel to direction of rolling. The bare (unclad) surface shall be on the outside of the bend.

| Nominal Thickness Inch | Bend Factor |
|---|---|
| 0.010 to 0.040, incl | 4 |
| Over 0.040 to 0.124, incl | 5 |
| Over 0.124 to 0.249, incl | 8 |

6. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal imperfections detrimental to fabrication or to performance of parts.

7. TOLERANCES: Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2202.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification. This report shall include the purchase order number, material specification number, and its revision letter, thickness, size, and quantity.

8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number and its revision letter, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.