

NOTICE OF
ADOPTION

ADOPTION NOTICE
20 December 1991
AMS 6354D
1 October 1990
SUPERSEDING
AMS 6354C
20 March 1984

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Title of Document: Steel Sheet, Strip, and Plate
0.75Si - 0.62Cr - 0.20Mo - 0.10Zr - (0.10 - 0.17C)

Date of Specific Issue Adopted: 1 October 1990

Releasing Non-Government Standards Body: SAE

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Air Force - 11
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS-6354

REV
D

An American National Standard

Issued 1954-5-01
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Superseding AMS-6354C

STEEL SHEET, STRIP, AND PLATE
0.75Si - 0.62Cr - 0.20Mo - 0.10Zr (0.10 - 0.17C)

UNS K11914

1. SCOPE:

- 1.1 Form: This specification covers a low-alloy steel in the form of sheet, strip, and plate.
- 1.2 Application: Primarily for parts requiring strength up to 1000°F (538°C).

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

- AMS-2252 - Tolerances, Low-Alloy Steel Sheet, Strip, and Plate
- MAM-2252 - Tolerances, Metric, Low-Alloy Steel Sheet, Strip, and Plate
- AMS-2259 - Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
- AMS-2370 - Quality Assurance Sampling of Carbon and Low-Alloy Steels, Wrought Products Except Forgings and Forging Stock

2.2 ASTM Publications: Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187

- ASTM A 370 - Mechanical Testing of Steel Products
- ASTM E 112 - Determining Average Grain Size
- ASTM E 350 - Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

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2.3 U.S. Government Publications: Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.3.1 Military Standards:

MIL-STD-163 - Steel Mill Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Shall conform to the following percentages by weight, \emptyset determined by wet chemical methods in accordance with ASTM E 350, by spectrochemical methods, or by other analytical methods acceptable to purchaser:

| | min | | max |
|------------|------|---|-------|
| Carbon | 0.10 | - | 0.15 |
| Manganese | 0.50 | - | 0.80 |
| Silicon | 0.60 | - | 0.90 |
| Phosphorus | -- | | 0.025 |
| Sulfur | -- | | 0.035 |
| Chromium | 0.50 | | 0.75 |
| Molybdenum | 0.15 | - | 0.25 |
| Zirconium | 0.05 | | 0.10 |
| Nickel | -- | | 0.25 |
| Copper | -- | | 0.35 |

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS-2259.

3.2 Condition: The product shall be supplied in the following condition:

3.2.1 Sheet and Strip: Hot rolled, or cold rolled and annealed, and descaled.

3.2.2 Plate: Hot rolled and descaled.

3.3 Properties: The product shall conform to the following requirements; tensile and bend testing shall be performed in accordance with ASTM A 370:

3.3.1 Grain Size: Predominantly 5 or finer with occasional grains as large as 3 permissible, determined in accordance with ASTM E 112.

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3.3.2 Tensile Properties: Shall be as specified in Table I.

TABLE I

| Nominal Thickness Inches | Tensile Strength psi, min | Yield Strength At 0.2% Offset psi, min | Elongation in 2 Inches or 4D %, min |
|-----------------------------|---------------------------------|--|---|
| Up to 0.50, incl | 70,000 | 50,000 | 22 |
| Over 0.50 to 1.00, incl | 65,000 | 43,000 | 22 |
| Over 1.00 to 2.00, incl | 63,000 | 40,000 | 22 |
| Over 2.00 to 4.00, incl | 60,000 | 38,000 | 22 |

TABLE I (SI)

| Nominal Thickness Millimetres | Tensile Strength MPa, min | Yield Strength At 0.2% Offset MPa, min | Elongation in 50.8 mm or 4D %, min |
|----------------------------------|---------------------------------|--|--|
| Up to 12.7, incl | 483 | 345 | 22 |
| Over 12.7 to 25.4, incl | 448 | 296 | 22 |
| Over 25.4 to 50.8, incl | 434 | 276 | 22 |
| Over 50.8 to 101.6, incl | 414 | 262 | 22 |

3.3.2.1 Tensile property requirements for plate over 4.00 inches (101.6 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.3.3 Bending: Product 0.749 inch (19.02 mm) and under in nominal thickness shall withstand, without cracking, bending through the angle shown below around a diameter equal to the bend factor times the nominal thickness of the product with axis of bend parallel to the direction of rolling.

| <u>Nominal Thickness</u> | | Type Of Bend | Angle deg, min | Bend Factor |
|---------------------------|--------------------------|-----------------|-------------------|----------------|
| Inch | Millimetres | | | |
| Up to 0.249, incl | Up to 6.32, incl | Free Bend | 180 | 1 |
| | | V-Block | 135 | 2 |
| Over 0.249 to 0.749, incl | Over 6.32 to 19.02, incl | Free Bend | 90 | 1 |
| | | V-Block | 135 | 3 |

3.3.3.1 Bending requirements for plate over 0.749 inch (19.02 mm) in nominal thickness shall be as agreed upon by purchaser and vendor.

3.4 Quality: The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from foreign materials and from imperfections detrimental to usage of the product.

3.5 Tolerances: Shall conform to all applicable requirements of AMS-2252 or MAM-2252.