

Aluminum Alloy, Plate (7085-T7451)
7.5Zn - 1.6Cu - 1.5Mg - 0.12Zr
Solution Heat Treated, Stress-Relieved, and Overaged
(Composition similar to UNS A97085)

RATIONALE

AMS4470 is a new specification intended for 7085-T7451 aluminum plate.

1. SCOPE

1.1 Form

This specification covers an aluminum alloy in the form of plate.

1.2 Application

This product may be used in aerospace applications requiring a high level of mechanical properties and fracture toughness, good resistance to stress-corrosion cracking and resistance to exfoliation corrosion, but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS2355 Quality Assurance Sampling and Testing, Aluminum Alloys and Magnesium Alloys, Wrought Products, Except Forging Stock and Rolled, Forged, or Flash Welded Rings
AMS2772 Heat Treatment of Aluminum Alloy Raw Material
AS1990 Aluminum Alloy Tempers

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on this Technical Report, please visit
<http://www.sae.org/technical/standards/AMS4470>**

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 594	Ultrasonic Inspection of Aluminum-Alloy Wrought Products for Aerospace Applications
ASTM B 645	Linear-Elastic Plane-Strain Fracture Toughness Testing of Aluminum Alloys
ASTM B 660	Packaging/Packing of Aluminum and Magnesium Products
ASTM B 666/B 666M	Identification Marking of Aluminum and Magnesium Products
ASTM E 399	Linear-Elastic Plane-Strain Fracture Toughness (K_{1C}) of Metallic Materials
ASTM G 34	Exfoliation Corrosion Susceptibility in 2xxx and 7xxx Series Aluminum Alloys (EXCO Test)
ASTM G 47	Determining Susceptibility to Stress-Corrosion Cracking of High Strength Aluminum Alloy Products

2.3 ANSI Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036, Tel: 212-642-4900, www.ansi.org.

ANSI H35.2	Dimensional Tolerances for Aluminum Mill Products
ANSI H35.2M	Dimensional Tolerances for Aluminum Mill Products (Metric)

3. TECHNICAL REQUIREMENTS

3.1 Composition

Shall conform to the percentages by weight shown in Table 1, determined in accordance with AMS2355.

TABLE 1 - COMPOSITION

Element	min	max
Silicon	--	0.06
Iron	--	0.08
Copper	1.3	2.0
Manganese	--	0.04
Magnesium	1.2	1.8
Chromium	--	0.04
Zinc	7.0	8.0
Titanium	--	0.06
Zirconium	0.08	0.15
Other Elements, each	--	0.05
Other Elements, total	--	0.15
Aluminum	remainder	

3.2 Condition

Heat treatment shall be in accordance with AMS2772 to the -T7451 temper (See AS1990) and as follows: Solution heat-treatment and artificial age practices are proprietary. Material shall be stretched not less than 1-1/2% nor more than 3% prior to artificial aging.

3.3 Properties

Product shall conform to the following requirements, determined in accordance with AMS2355.