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INTERNATIONAL
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS-QQ-A-250/7

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Submitted for recognition as an American National Standard

Aluminum Alloy 5086, Plate and Sheet

UNS A95086

NOTICE

This document has been taken directly from Federal Specification QQ-A-250/7E and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards.

The original Federal Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, (b) the use of the existing government specification or standard format, and (c) the exclusion of any qualified product list (QPL) sections.

The complete requirements for procuring 5086 aluminum alloy plate and sheet described herein shall consist of this document and the latest issue of AMS-QQ-A-250.

1. SCOPE AND CLASSIFICATION:

1.1 Scope:

This specification covers the specific requirements for 5086 aluminum alloy plate and sheet; the general requirements are covered in AMS-QQ-A-250.

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1.2 Classification:

1.2.1 Tempers: The plate and sheet are classified in one of the following tempers as specified (See 6.2). Definitions of these tempers are specified in AMS-QQ-A-250.

O - Annealed.
H32 - Strain-hardened one-quarter hard temper and then stabilized.
H34 - Strain-hardened half-hard temper and then stabilized.
H36 - Strain-hardened three-quarters hard temper and then stabilized.
H38 - Strain-hardened full-hard temper and then stabilized.
H112 - As rolled, properties as specified in Table II.

2. APPLICABLE DOCUMENTS:

See AMS-QQ-A-250.

3. REQUIREMENTS:

3.1 Chemical Composition:

3.1.1 The chemical composition shall conform to the requirements specified in Table I.

TABLE I. Chemical Composition 1/

Element	Percent	
	Minimum	Maximum
Magnesium	3.5	4.5
Manganese	0.20	0.7
Chromium	0.05	0.25
Iron	-	0.50
Silicon	-	0.40
Zinc	-	0.25
Titanium	-	0.15
Copper	-	0.10
Other Elements, each	-	0.05
Other Elements, total	-	0.15
Aluminum	Remainder	

1/ Analysis shall routinely be made only for the elements specifically mentioned in Table I. If, however, the presence of other elements is indicated or suspected in amounts greater than the specified limits, further analysis shall be made to determine that these elements are not present in excess of specified limits.

3.2 Mechanical Properties:

3.2.1 Mechanical Properties of Material as Supplied: The mechanical properties parallel to the direction of final rolling shall conform to the requirements of Table II for the temper specified.

TABLE II. Mechanical Properties (See 6.4)

Temper	Thickness	Tensile Strength		Yield Strength at 0.2 Percent Offset	Elongation in 2 in. or 4 times D 1/, 2/, minimum
		Minimum	Maximum	minimum	
	Inches	ksi	ksi	ksi	Percent
O	0.020 thru 0.050	35.0	44.0	14.0	15
	0.051 thru 0.249	35.0	44.0	14.0	18
	0.250 thru 2.000	35.0	44.0	14.0	16
H112	0.188 thru 0.499	36.0	-	18.0	8
	0.500 thru 1.000	35.0	-	16.0	10
	1.001 thru 2.000	35.0	-	14.0	14
	2.001 thru 3.000	34.0	-	14.0	14
H32	0.020 thru 0.050	40.0	47.0	28.0	6
	0.051 thru 0.249	40.0	47.0	28.0	8
	0.250 thru 2.000	40.0	47.0	28.0	12
H34	0.009 thru 0.019	44.0	51.0	34.0	4
	0.020 thru 0.050	44.0	51.0	34.0	5
	0.051 thru 0.249	44.0	51.0	34.0	6
	0.250 thru 1.000	44.0	51.0	34.0	10
H36	0.006 thru 0.019	47.0	54.0	38.0	3
	0.020 thru 0.050	47.0	54.0	38.0	4
	0.051 thru 0.162	47.0	54.0	38.0	6
H38	0.006 thru 0.020	50.0	-	41.0	3

1/ Not required for material 1/2 inch or less in width.
2/ D represents specimen diameter.