SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS-QQ-A-250/6	REV. B

Issued 1997-08
Revised 2006-09
Cancelled 2012-03

Superseded by AMS4056
ASTM B209
ASTM B928

Aluminum Alloy 5083, Plate and Sheet

(Composition similar to UNS A95083)

RATIONALE

AMS-QQ-A-250/6B has been designated Cancelled and Superseded because equivalent technical requirements are provided by other specifications.

CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of March 2012 and has been superseded by the specifications listed below. The requirements of the latest issue of the specifications listed below shall be fulfilled whenever reference is made to the cancelled AMS-QQ-A-250/6. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications, noting that it has been superseded by the specifications listed below.

Cancelled specifications are available from SAE.

Temper	Superseding Material and Specification
O	O Temper in accordance with AMS4056, Aluminum Alloy, Sheet and Plate 4.4Mg - 0.70Mn - 0.15Cr (5083-0) Annealed
H112	H112 Temper in accordance with ASTM B209 Alloy 5083-H112; Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
H321	5083-H321 in accordance with ASTM B928 Alloy 5083-H321; Standard Specification for High Magnesium Aluminum-Alloy Sheet and Plate for Marine Service and Similar Environments
H323	Cancelled
H343	Cancelled

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
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SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMSQQA250/6B

NOTICE

The original version of this document was taken directly from Federal Specification QQ-A-250/6G and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. AMS-QQ-A-250/6B updates the temper designations for currently produced materials and supersedes the H321 temper with marine grade material in accordance with ASTM B 928.

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 5083 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 5083 aluminum alloy plate and sheet; the general requirements are covered in AMS-QQ-A-250.

1.2 Classification

1.2.1 Tempers

The plate and sheet are classified in one of the following tempers as specified (See 6.3): Definitions of these tempers are specified in AMS-QQ-A-250.

Tempers O and H112 - As specified herein.

Temper H321 - The requirements of ASTM B 928 shall apply and shall supersede the requirements herein. Alloy 5083 temper H321 per AMS-QQ-A-250/6 is superseded by Alloy 5083 temper H321 of ASTM B 928.

Tempers H323 and H343 - Cancelled.

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 1.

TABLE 1 - CHEMICAL COMPOSITION 1/

Element	Percent Minimum	Percent Maximum
Magnesium	4.0	4.9
Manganese	0.40	1.0
Chromium	0.05	0.25
Silicon	--	0.40
Iron	--	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 1. 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 2 for the temper specified.

TABLE 2 - MECHANICAL PROPERTIES (SEE 6.5)

Temper	Thickness Inches	Tensile Strength Minimum ksi	Tensile Strength Maximum ksi	Yield Strength at 0.2 percent Offset Minimum ksi	Yield Strength at 0.2 percent Offset Maximum ksi	Elongation in 2 in. or 4 times D 1/, 2/, Minimum Percent
O	0.051 thru 1.500	40.0	51.0	18.0	29.0	16
	1.501 thru 3.000	39.0	50.0	17.0	29.0	16
	3.001 thru 4.000	38.0	-	16.0	-	16
	4.001 thru 5.000	38.0	-	16.0	-	14
	5.001 thru 7.000	37.0	-	15.0	-	14
	7.001 thru 8.000	36.0	-	14.0	-	12
H112	0.250 thru 1.500	40.0	-	18.0	-	12
	1.501 thru 3.000	39.0	-	17.0	-	12

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

4. QUALITY ASSURANCE PROVISIONS

See AMS-QQ-A-250.

5. PREPARATION FOR DELIVERY

See AMS-QQ-A-250.

6. NOTES

6.1 Intended Use

This alloy is for use where a weldable, moderate strength alloy having good corrosion resistance is required.

6.2 Alloy 5083 should not be used for continuous service at temperatures exceeding 150°F because of susceptibility to stress-corrosion cracking. In addition, stress-corrosion susceptibility is increased by cold forming. Therefore, for critical applications bend radii shall not be less than ten times the thickness. For less critical applications bend radii shall not be less than five times the thickness. Forming at 425°F ± 25 will avoid the adverse effect of cold work and high residual stresses, and it is recommended for this alloy.

6.3 Ordering Data

Purchasers should select the preferred options permitted herein and include the following information in procurement documents.

AMS-QQ-A-250/6B
Form and temper required (See 1.2.1)
Dimensions required
Requirements for sizes not specifically covered (See AMS-QQ-A-250)
Selection of applicable levels of preservation, packaging, and packing required if other than Level C (See AMS-QQ-A-250).