

QQ-A-250/8F
September 21, 1978
SUPERSEDING
QQ-A-250/8E
December 4, 1970
(See 6.3)

FEDERAL SPECIFICATION

ALUMINUM ALLOY 5052, PLATE AND SHEET

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

(This specification forms a part of the latest issue of Federal Specification QQ-A-250.)

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the specific requirements for aluminum alloy 5052 plate and sheet; the general requirements are covered in QQ-A-250.

1.2 Classification.

1.2.1 Temper. The plate and sheet shall be classified as O, H22, H24, H26, H28, H32, H34, H36, H38, H112 or F temper, as specified (see 6.2).

1.2.1.1 Material in either of a pair of tempers (H32 and H22, H34 and H24, H36 and H26, or H38 and H28) may be supplied at the option of the supplier, unless one is specifically excluded in the contract or order.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specification:

QQ-A-250 - Aluminum and Aluminum Alloy Plate and Sheet; General Specification for

(Activities outside the Federal Government may obtain copies of Federal Specifications and Standards, as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

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(Single copies of this specification and other Federal specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Philadelphia, Atlanta, Chicago, Kansas City, MO, Houston, Fort Worth, Denver, San Francisco, Los Angeles and Seattle, WA.

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(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

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	2.2	2.8
Chromium	0.15	0.35
Iron	-	0.40
Silicon	-	0.25
Copper	-	0.10
Manganese	-	0.10
Zinc	-	0.10
Others, each	-	0.05
Others, total	-	0.15
Aluminum	Remainder	

^{1/} Analysis shall regularly be made only for the elements specifically mentioned in the above table. If, however, the presence of other elements is indicated in the course of routine analysis, further analysis shall be made to determine conformance to the limits specified for other elements.

3.2 Mechanical properties.

3.2.1 Mechanical properties of material as supplied. The mechanical properties parallel to the direction of the final rolling shall conform to the requirements of table II for the temper specified.

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3.2.2 Bend properties. Bend-test specimens taken from sheet shall be capable of withstanding, without cracking, the bend test specified in QQ-A-250. The values for bend factor N are given in table III.

TABLE II. Mechanical properties

Temper	Thickness	Tensile strength		Elongation in 2 in. or 4 times D $\frac{1}{3}$, minimum
		Min.	Max.	
	Inches	psi	psi	Percent
0	0.006 thru 0.007	25,000	31,000	-
	0.008 thru 0.012	25,000	31,000	14
	0.013 thru 0.019	25,000	31,000	15
	0.020 thru 0.031	25,000	31,000	16
	0.032 thru 0.050	25,000	31,000	18
	0.051 thru 0.113	25,000	31,000	19
	0.114 thru 0.249	25,000	31,000	20
	0.250 thru 3.000	25,000	31,000	18
H22 or H32 $\frac{2}{3}$	0.017 thru 0.019	31,000	38,000	4
	0.020 thru 0.050	31,000	38,000	5
	0.051 thru 0.113	31,000	38,000	7
	0.114 thru 0.249	31,000	38,000	9
	0.250 thru 0.499	31,000	38,000	11
	0.500 thru 2.000	31,000	38,000	12
H24 or H34 $\frac{2}{3}$	0.009 thru 0.019	34,000	41,000	3
	0.020 thru 0.050	34,000	41,000	4
	0.051 thru 0.113	34,000	41,000	6
	0.114 thru 0.249	34,000	41,000	7
	0.250 thru 1.000	34,000	41,000	10
H26 or H36 $\frac{2}{3}$	0.006 thru 0.007	37,000	44,000	2
	0.008 thru 0.031	37,000	44,000	3
	0.032 thru 0.162	37,000	44,000	4
H28 or H38	0.006 thru 0.007	39,000	-	2
	0.008 thru 0.031	39,000	-	3
	0.032 thru 0.128	39,000	-	4
H112	0.250 thru 0.499	28,000	-	7
	0.500 thru 2.000	25,000	-	12
	2.001 thru 3.000	25,000	-	16
F	All	$\frac{4}{3}$	$\frac{4}{3}$	$\frac{4}{3}$

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- 1/ Not required for material 1/2 inch or less in width.
- 2/ For the H2 temper series, the maximum tensile values do not apply.
- 3/ D represents specimen diameter.
- 4/ No requirement.

TABLE III. Bend test factor "N"

Thickness of material	Temper			
	0	H22 or H32	H24 or H34	H26 or H36
Inch				
0.006 thru 0.008	0	-	-	4
0.009 thru 0.016	0	-	1	4
0.017 thru 0.019	0	0	1	4
0.020 thru 0.031	0	1	2	4
0.032 thru 0.050	0	1	2	5
0.051 thru 0.113	0	2	3	5
0.114 thru 0.162	0	3	4	5
0.163 thru 0.249	0	3	4	-

4. QUALITY ASSURANCE PROVISIONS (See QQ-A-250.)

5. PREPARATION FOR DELIVERY (See QQ-A-250.)

6. NOTES

6.1 Intended use. This alloy is intended for use when moderate strength in a nonheat-treatable aluminum alloy plate or sheet is desired.

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

- (a) Title, number, and date of this specification.
- (b) Form and temper required (see 1.2.1).
- (c) Dimensions required.
- (d) Requirements for sizes not specifically covered (see QQ-A-250).
- (e) Selection of applicable levels of preservation, packaging, and packing required, if other than level C (see QQ-A-250).

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6.3 Certain provisions of this specification are the subject of international standardization agreement ABC-NAVY-STD-44. When amendment, revision, or cancellation of this specification is proposed which will effect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels including departmental standardization officer, if required.

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U.S. GOVERNMENT PRINTING OFFICE : 1979 - 281-172/1203

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Price 60 cents each.

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c. Reason/Rationale for Recommendation

6. REMARKS

7a. NAME OF SUBMITTER (Last, First, MI) - Optional

b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

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1. DOCUMENT NUMBER

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3a. NAME OF SUBMITTING ORGANIZATION

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5. PROBLEM AREAS

a. Paragraph Number and Wording

b. Recommended Wording