

QQ-A-200/4D  
February 20, 1981  
SUPERSEDING  
Fed. Spec. QQ-A-200/4C  
August 21, 1970

## FEDERAL SPECIFICATION

### ALUMINUM ALLOY 5083, BAR, ROD, SHAPES, TUBE AND WIRE, EXTRUDED

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-200.)

#### 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the specific requirements for  
aluminum alloy 5083 bar, rod, shapes, tube and wire produced by extrusion. The  
general requirements are covered in QQ-A-200.

#### 1.2 Classification.

1.2.1 Tempers. Bar, rod, shapes, tube and wire shall be classified as 0,  
H111, or H112 tempers, as specified (see 6.2).

#### 2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues 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-200

-Aluminum Alloy, Bar, Rod, Shapes,  
Structural Shapes, Tube and Wire,  
Extruded; General Specification for.

(Activities outside the Federal Government may obtain copies of Federal  
specifications, standards, and commercial item descriptions, as outlined  
under General Information in the Index of Federal Specifications, Standards  
and Commercial Item Descriptions. The Index, which includes cumulative bi-  
monthly supplements as issued, is for sale on a subscription basis by the  
Superintendent of Documents, U.S. Government Printing Office, Washington, DC  
20402.

(Single copies of this specification, other Federal specifications,  
standards, and commercial item descriptions required by activities outside the  
Federal Government for bidding purposes are available without charge from  
General Services Administration Business Service Centers in Boston; New York;

FSC 4710, 9525, 9530, 9540

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Philadelphia; Washington, DC; Atlanta; Chicago; Kansas City, MO; Fort Worth; Houston; Denver; San Francisco; Los Angeles; and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, standards, commercial item descriptions, and the Index of Federal Specifications, Standards and Commercial Item Descriptions from established distribution points in their agencies.)

### 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	4.0	4.9
Manganese	0.40	1.0
Chromium	0.05	0.25
Silicon	--	0.40
Iron	--	0.40
Copper	--	0.10
Zinc	--	0.25
Titanium	--	0.15
Others, each	--	0.05
Others, total	--	0.15
Aluminum	Remainder	

1/ Analysis shall regularly be made only for the elements specifically mentioned in table I. 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 in the direction of extrusion shall conform to the requirements specified in table II.

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TABLE II. Mechanical properties.

Temper	Thickness, (bar and shapes); diameter (rod and wire); wall thickness, (tube) inches	Area square inches	Tensile strength, minimum ksi	Yield strength at 0.2 percent offset, minimum ksi	Elongation in 2 in. or 4 times D <sup>1/</sup> <sub>3/</sub> , minimum percent
0	Up thru 5.000	up thru 32	2/ 39.0	16.0	14
H111	Up thru 5.000	up thru 32	40.0	24.0	12
H112	Up thru 5.000	up thru 32	39.0	16.0	12

<sup>1/</sup> D represents specimen diameter.

<sup>2/</sup> Maximum tensile strength is 51.0 ksi.

<sup>3/</sup> See QQ-A-200 for elongation requirement exceptions.

#### 4. QUALITY ASSURANCE PROVISIONS (See QQ-A-200).

#### 5. PREPARATION FOR DELIVERY (See QQ-A-200).

#### 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 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, quantity and temper of material required (see 1.2.1).
- (c) Dimensions required.
- (d) Requirements for sizes not specifically covered (see QQ-A-200).
- (e) Requirement stating suitability for an important end use, if necessary.
- (f) Selection of applicable levels of preservation and packaging, whether level A, level B or commercial (see QQ-A-200).

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 affect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels including departmental standardization offices, if required.

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**MILITARY INTEREST:**

**CIVIL AGENCY COORDINATING ACTIVITIES:**

GSA - FSS

**Custodians:**

Army-MR  
Navy-AS  
Air Force -11

**Review activities:**

Army-AR, EA, GL, MI  
Navy-YD  
Air Force -99  
DLA-IS

**User activities:**

Army-EL  
Navy-MC, SH

**Preparing activity:**

Navy - AS  
Project No. 9530-0179

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.