

# AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard



AMS-QQ-A-200/6A

Issued JUL 1997  
Revised SEP 1998

Superseding AMS-QQ-A-200/6

Aluminum Alloy 5454, Bar, Rod, Shapes,  
Tube, and Wire, Extruded

UNS A95454

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The complete requirements for procuring aluminum alloy 5454 bar, rod, shapes, tube, and wire extruded described herein shall consist of this document and the latest issue of AMS-QQ-A-200.

### 1. SCOPE AND CLASSIFICATION:

#### 1.1 Scope:

This specification covers the specific requirements for aluminum alloy 5454 bar, rod, shapes, tube, and wire produced by extrusion.

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## 1.2 Classification:

1.2.1 Tempers: Bar, rod, shapes, tube, and wire are classified in the following tempers as specified (See 6.2): O, H111, or H112. Definitions of tempers are specified in AMS-QQ-A-200.

1.2.2 Tubing: Tubing shall be additionally classified as follows:

Type I - Tubing extruded from hollow billets using die and mandrel (See AMS-QQ-A-200).

Type II - Tubing extruded from solid billets using a porthole or spider die or similar tooling (See AMS-QQ-A-200).

## 2. APPLICABLE DOCUMENTS:

See AMS-QQ-A-200.

## 3. REQUIREMENTS:

### 3.1 Chemical Composition:

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

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TABLE I. Chemical Composition <sup>1/</sup>

Element	Percent	
	Minimum	Maximum
Magnesium	2.4	3.0
Manganese	0.50	1.0
Chromium	0.05	0.20
Silicon	--	0.25
Iron	--	0.40
Zinc	--	0.25
Titanium	--	0.20
Copper	--	0.10
Other Elements, each	--	0.05
Other Elements, total <sup>2/</sup>	--	0.15
Aluminum	Remainder	

<sup>1/</sup> 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 the course of routine analysis, further analysis shall be made to determine conformance to the limits specified for other elements.

<sup>2/</sup> The sum of those "Others" metallic elements 0.010 percent or more each, expressed to the second decimal before determining the sum.

### 3.2 Mechanical Properties:

3.2.1 Mechanical Properties of Material as Supplied: The mechanical properties in the direction of extrusion shall conform to requirements specified in Table II.

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 or at extension indicated		Elongation in 2 in. or 4 times D <u>1/3</u> , minimum Percent
				Minimum ksi	Extension under load, Inch per inch	
O	Up to 5.000, Incl	Up to 32, Incl	<u>2/</u> 31.0	12.0	0.0032	14
H111	Up to 5.000, Incl	Up to 32, Incl	33.0	19.0	0.0038	12
H112	Up to 5.000, Incl	Up to 32, Incl	31.0	12.0	0.0032	12

1/ D represents specimen diameter.

2/ Maximum tensile strength is 41.0 ksi.

3/ See AMS-QQ-A-200 for elongation requirement exceptions.

4. QUALITY ASSURANCE PROVISIONS:

See AMS-QQ-A-200.

5. PREPARATION FOR DELIVERY:

See AMS-QQ-A-200.