



AEROSPACE MATERIAL SPECIFICATION

AMS5115™

REV. J

Issued	1942-03
Revised	1990-01
Noncurrent	1999-01
Reaf. Nonc.	2013-09
Stabilized	2017-08

Superseding AMS5115H

Wire, Carbon Steel
0.60 - 0.75C
Hardened and Tempered

RATIONALE

AMS5115J has been stabilized as mature technology.

STABILIZED NOTICE

AMS5115J has been declared "STABILIZED" by SAE AMS Carbon and Low Alloy Steels Committee E. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because this document contains mature technology that is not expected to change and thus no further revisions are anticipated. Previously this document was reaffirmed non-current. The last technical update of this document occurred in January 1990. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this specification; including exceptions listed on the certification.

NOTE: In many cases, the purchaser may represent a sub tier supplier and not the cognizant engineering organization.

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Documents
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1. SCOPE:

1.1 Form:

This specification covers a carbon steel in the form of wire supplied as coils of wire or as finished springs.

1.2 Application:

Primarily for springs, such as valve springs, subject to moderate stresses and requiring good fatigue properties.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

AMS 2259	Chemical Check Analysis Limits, Wrought Low-Alloy and Carbon Steels
AMS 2370	Quality Assurance Sampling of Carbon and Low-Alloy Steels, Wrought Products Except Forgings and Forging Stock
AMS 2430	Shot Peening
AMS 2640	Magnetic Particle Inspection

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM A 370	Mechanical Testing of Steel Products
ASTM E 350	Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron

2.3 U.S. Government Publications:

Available from Naval Publications and Forms Center, Attn: NPODS, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.

2.3.1 Military Standards:

MIL-STD-163	Steel Mill Products, Preparation for Shipment and Storage
MIL-STD-794	Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E 350, by spectrochemical methods, or by other analytical methods acceptable to purchaser:

	min	max
Carbon	0.60	0.75
Manganese	0.50	0.90
Silicon	0.10	0.30
Phosphorus	--	0.025
Sulfur	--	0.030

3.1.1 Check Analysis: Composition variations shall meet the applicable requirements of AMS 2259.

3.2 Condition:

The product shall be supplied in the following condition:

3.2.1 Wire: Cold drawn, hardened, and tempered.

3.2.2 Springs: Stress relieved, after coiling, by heating to 725° - 750°F (385° - 399°C), holding at heat for not less than 1 hour, and cooling in air. When permitted by purchaser, other stress relieving treatments may be used.

3.3 Properties:

The product shall conform to the following requirements:

3.3.1 Wire:

3.3.1.1 Tensile Properties: Shall be as shown in Table I, determined in accordance with ASTM A 370:

TABLE I		
Nominal Diameter Inch	Tensile Strength psi	Reduction of Area %, min
0.093 to 0.120, incl	210,000 - 230,000	45
Over 0.120 to 0.148, incl	205,000 - 225,000	45
Over 0.148 to 0.192, incl	200,000 - 220,000	45
Over 0.192 to 0.250, incl	195,000 - 215,000	45