AERONAUTICAL
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 5673A

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STEEL WIRE, CORROSION RESISTANT
17Cr - 7Ni - 1Al
Precipitation Hardening - Spring Temper

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for springs requiring corrosion resistance and resistance to permanent set up to 600 F. Where parts may require welding during fabrication, strength of this cold worked material will be impaired.

3. COMPOSITION:

		Check Analysis Under Min	Check Analysis or Over Max
Carbon	0.09 max	--	0.01
Manganese	1.00 max	--	0.03
Silicon	1.00 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	16.00 - 18.00	0.20	0.20
Nickel	6.50 - 7.75	0.10	0.10
Aluminum	0.75 - 1.50	0.10	0.10

4. CONDITION: Spring temper, cold drawn to required size. Coils or cut lengths shall be supplied as specified on purchase order.

5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

5.1.1 Coils: Wire furnished in coils shall have the tensile strength shown in column A and shall conform to the tensile strength shown in column B after heating to 900 F ± 10, holding at heat for 1 hr, and air cooling.

Nominal Diameter Inch	Column A As Cold Drawn Tensile Strength, psi min	Column A As Cold Drawn Tensile Strength, psi max	Column B Precipitation-Hardened Tensile Strength, psi min	Column B Precipitation-Hardened Tensile Strength, psi max
0.030 to 0.041, incl	260,000	290,000	320,000	350,000
Over 0.041 to 0.051, incl	255,000	285,000	310,000	340,000
Over 0.051 to 0.061, incl	250,000	280,000	305,000	335,000
Over 0.061 to 0.071, incl	242,000	272,000	297,000	327,000
Over 0.071 to 0.086, incl	240,000	270,000	292,000	322,000
Over 0.086 to 0.090, incl	230,000	260,000	282,000	312,000
Over 0.090 to 0.100, incl	227,000	257,000	279,000	309,000
Over 0.100 to 0.106, incl	223,000	253,000	274,000	304,000
Over 0.106 to 0.130, incl	221,000	251,000	272,000	302,000
Over 0.130 to 0.138, incl	215,000	245,000	260,000	290,000
Over 0.138 to 0.146, incl	213,000	243,000	258,000	288,000
Over 0.146 to 0.162, incl	211,000	241,000	256,000	286,000
Over 0.162 to 0.180, incl	209,000	239,000	254,000	284,000
Over 0.180 to 0.207, incl	207,000	237,000	252,000	282,000
Over 0.207 to 0.225, incl	203,000	233,000	248,000	278,000
Over 0.225 to 0.306, incl	198,000	228,000	242,000	272,000
Over 0.306 to 0.440, incl	192,000	222,000	235,000	265,000

5.1.2 Straight Lengths: When straightened and cut lengths are ordered as cold drawn, the tensile strength requirement for each size may be reduced by 10% from the ø values shown in 5.1.1, column A. Wire ordered in this condition shall conform to the tensile strength requirements shown in 5.1.1, column B, after heating to 900 F ± 10, holding at heat for 1 hr, and air cooling.

5.2 Wrapping: Wire shall withstand, without cracking, wrapping at room temperature one full turn around a diameter equal to the nominal diameter of the wire.

5.3 Coiling: The wire shall show a uniform pitch with no splits or fractures when wound in a tightly closed coil on an arbor of size shown in the table below and the resultant coil stretched to a permanent set of 4 times its as-wound length. This requirement shall apply only to wire furnished in coils and having a diameter of 0.125 in. and under.

Nominal Diameter Inch	Arbor Diameter Inch
0.030 to 0.034, incl	0.102
Over 0.034 to 0.045, incl	0.145
Over 0.045 to 0.055, incl	0.212
Over 0.055 to 0.125, incl	0.250

6. QUALITY:

6.1 Wire shall be uniform in quality and condition, cylindrical, clean, and free from kinks, twists, scrapes, splits, cold shuts, and other imperfections.