

AEROSPACE

MATERIAL SPECIFICATIONS

AMS 5688D

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

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STEEL WIRE, CORROSION RESISTANT 18Cr - 8Ni (SAE 30302) 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.

3. COMPOSITION:

	min	max
Carbon	--	0.15
Manganese	--	2.00
Silicon	--	1.00
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	17.00 - 19.00	
Nickel	7.00 - 10.00	

3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2248.

4. CONDITION: Spring temper, cold drawn or rolled to required size, coils shall be $\emptyset$ supplied, unless otherwise ordered.

5. TECHNICAL REQUIREMENTS: The following requirements apply to round and square wire, and to rectangular wire having nominal width not more than 4 times the nominal thickness.

5.1 Tensile Properties:

5.1.1 Coils

$\emptyset$	Nominal Diameter or Thickness Inch	Round Tensile Strength, psi		Square and Rectangular Tensile Strength, psi	
		min	max	min	max
	Up to 0.009, incl	325,000	355,000	295,000	325,000
	0.010	320,000	350,000	290,000	320,000
	0.011	318,000	348,000	288,000	318,000
	0.012	316,000	346,000	286,000	316,000
	0.013	314,000	344,000	284,000	314,000
	0.014	312,000	342,000	282,000	312,000
	0.015	310,000	340,000	280,000	310,000

Ø	Nominal Diameter or Thickness Inch	Round Tensile Strength, psi		Square and Rectangular Tensile Strength, psi	
		min	max	min	max
	0.016	308,000	338,000	278,000	308,000
	0.017	306,000	336,000	276,000	306,000
	0.018	304,000	334,000	274,000	304,000
	0.020	300,000	330,000	270,000	300,000
	0.022	296,000	326,000	266,000	296,000
	0.024	292,000	322,000	262,000	292,000
	0.026	289,000	319,000	259,000	289,000
	0.028	286,000	316,000	256,000	286,000
	0.032	277,000	307,000	247,000	277,000
	0.036	273,000	303,000	243,000	273,000
	0.041	269,000	299,000	239,000	269,000
	0.047	262,000	292,000	232,000	262,000
	0.054	260,000	290,000	230,000	260,000
	0.062	255,000	285,000	225,000	255,000
	0.072	250,000	280,000	220,000	250,000
	0.080	245,000	275,000	215,000	245,000
	0.092	240,000	270,000	210,000	240,000
	0.105	232,000	262,000	202,000	232,000
	0.120	225,000	255,000	195,000	225,000
	0.148	210,000	240,000	180,000	210,000
	0.162	205,000	235,000	175,000	205,000
	0.177	195,000	225,000	165,000	195,000
	0.207	185,000	215,000	155,000	185,000
	0.225	180,000	210,000	150,000	180,000
	0.250	175,000	205,000	145,000	175,000
	0.312	160,000	190,000	130,000	160,000
	0.375	140,000	170,000	110,000	140,000

5.1.2 Cut Lengths: When straightened or flattened, cut lengths are ordered, the tensile strength requirement for each size may be reduced by 10% of the applicable value in 5.1.1.

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