

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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**AMS 5685C**

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STEEL WIRE, CORROSION RESISTANT  
18Cr - 11Ni (SAE 30305)  
Solution Heat Treated

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 safety wire.
3. COMPOSITION:

Check Analysis  
Under Min or Over Max.

Carbon	0.08 max	--	0.01
Manganese	2.00 max	--	0.04
Silicon	1.00 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	17.00 - 19.00	0.20	0.20
Nickel	10.00 - 13.00	0.15	0.15
Copper	0.50 max	--	0.03

4. CONDITION: Solution heat treated and bright pickled, unless otherwise specified.
5. TECHNICAL REQUIREMENTS:

5.1 Tensile Properties:

	Coils	Straight Lengths
Tensile Strength, psi	110,000 max	120,000 max

- 5.2 Bending: Wire shall withstand, without cracking, bending at room temperature flat on itself.

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 injurious defects.
- 6.2 The surface shall have a bright, smooth finish, free from pits, abrasions and other surface imperfections.

7. TOLERANCES: The following variations in diameter are permissible:

Nominal Diameter, Inch	Tolerance, Inch, Plus and Minus
0.023 and under	0.0004
Over 0.023 to 0.032, incl	0.0005
Over 0.032 to 0.043, incl	0.0008
Over 0.043 to 5/16, incl	0.001

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