

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 5032A

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### STEEL WIRE 0.18-0.23C (SAE 1020) Annealed

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 use as safety wire.
3. COMPOSITION:

#### Check Analysis

		Under	Min	or	Over	Max
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Carbon	0.18 - 0.23	0.01				0.01
Manganese	0.30 - 0.60	0.02				0.02
Phosphorus	0.040 max	--				0.005
Sulfur	0.050 max	--				0.005

4. CONDITION: Cold drawn and bright annealed.
5. TECHNICAL REQUIREMENTS:
  - 5.1 Tensile Properties:

Tensile Strength, psi	50,000 - 75,000
Elongation, % in 10 in.	15 min
  - 5.2 Bending: A straight length of wire not less than 12 inches long shall withstand being wrapped in a closed helix for at least 6 complete turns around a cylindrical mandrel having a diameter equal to the nominal diameter of the wire and then unwrapped, without splitting or breaking.
6. QUALITY: Wire shall be uniform in quality and temper, cylindrical, clean, smooth, and free from rust, scrapes, splits, laps, cracks, seams, kinks and other injurious defects consistent with best commercial manufacturing practices.
7. TOLERANCES: Unless otherwise specified, diameter tolerances shall conform to the following:

Nominal Diameter	Tolerance, Inch
Inch	Plus and Minus
Under 0.076	0.001
0.076-0.249, incl	0.002

8. REPORTS:
  - 8.1 Unless otherwise specified, the vendor of wire shall furnish with each shipment three copies of a report of the results of tests for chemical composition, or stating that the chemical composition conforms to the requirements specified. This report shall include the purchase order number, material specification number, size, and quantity.

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