

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5033

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Revised

STEEL WIRE, ZINC COATED (Low Carbon)

1. ACKNOWLEDGMENT: A vendor must mention this specification number in all quotations and when acknowledging purchase orders.

2. COMPOSITION: (a) Basic Steel Wire. - Carbon 0.05 - 0.20
Manganese 0.30 - 0.60
Phosphorus 0.045 max
Sulphur 0.055 max

(b) The steel wire shall be uniformly coated with pure zinc.

3. CONDITION: Annealed conforming to the following physical properties:

Wire Diameter inch	Tensile Strength lb per sq in.		Elongation % in 10 in.
	minimum	maximum	minimum
0.032 and less	45,000	75,000	8
Over 0.032 to 0.092, incl.	45,000	75,000	10
Over 0.092	45,000	75,000	15

4. QUALITY: (a) The wire shall be uniform in quality and temper, cylindrical, clean, smooth, and free from rust, scrapes, rough or discontinuous zinc coating, splits, laps, cracks, seams, kinks, and other injurious defects consistent with best commercial manufacturing practices.

(b) The adherence of the zinc coating shall be such that it will not crack, flake or be removed by rubbing with the bare fingers when the wire has been wrapped in a closed helix at least twice around a cylindrical mandrel having a diameter equivalent to the nominal diameter of the wire.

(c) The uniformity of the zinc coating shall be such that the wire shall withstand the following number of dips when subjected to the Preece test conducted in accordance with the procedure outlined in ASTM A191-38:

Wire Diameter inch	Number of Dips minimum
0.048 and less	1
Over 0.048 to 0.054, incl.	2
Over 0.054 to 0.063, incl.	2-1/2
Over 0.063 to 0.080, incl.	3
Over 0.080 to 0.092, incl.	3-1/2
Over 0.092	4



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5. **TOLERANCES:** The following variations in diameter are permissible; all dimensions are in inches:

<u>Wire Diameter</u>	<u>Tolerance, plus or minus</u>
0.048 and less	0.001
Over 0.048 to 0.063, incl.	0.002
Over 0.063 to 0.079, incl.	0.0025
Over 0.079 to 0.200, incl.	0.003
Over 0.200	0.004

6. **REPORTS:** Unless otherwise specified, the manufacturer shall furnish three copies of a notarized report of the chemical composition and physical properties of the wire in each shipment. This report shall include the purchase order number, material specification number, size, and quantity.
7. **PACKAGING:** The wire shall be supplied in coils or reels having a mean diameter of 16 inches for wire diameters 0.063 inch and less, and a mean diameter of 22 inches for wire diameters over 0.063 inch. Each coil or reel shall be closely wrapped in water-proof paper, and shall have attached a tag bearing the manufacturer's name, purchase order number, material specification number and title, size, and quantity contained therein.
8. **REJECTIONS:** Material not conforming to this specification, or modifications specified on the drawing or the purchase order, is subject to rejection. If samples for verification are desired by the vendor, they must be claimed within three weeks. Rejected material or parts will be held a reasonable time, at the vendor's risk, awaiting shipping instructions for the return of same for credit or replacement, as specified. Vendor shall pay all transportation charges.

NOTE. **SIMILAR SPECIFICATIONS:** Army-Navy Aeronautical AN-QQ-W-435; is listed for information only and shall not be construed as acceptable alternate unless all requirements of this AMS are met.

