

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 7213

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Revised

COTTER PINS Medium Carbon Steel - Zinc Plated

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

2. COMPOSITION: (a) Basic Steel Wire.-

Carbon	0.37 - 0.44
Manganese	0.60 - 0.90
Phosphorus	0.040 max
Sulphur	0.050 max
Silicon	0.15 - 0.30

(b) The steel wire shall be uniformly electroplated with pure zinc prior to fabrication of the cotter pins.

3. CONDITION: (a) The wire shall be annealed and cold drawn so that the pins manufactured from it shall be within the following hardness limits for the diameter ranges indicated.-

Nominal Pin Diameter, Inch	Hardness	
	Vickers	or Rockwell 15-N
3/32 and less	200-330	65-77
1/8 and over	140-240	55-70

(b) A prong of any pin shall withstand 6 sharp right angle (90°) bends without failure. The flat side of the prong shall form the outside of all bends. The following operations shall constitute one bend: Clamp one-half of prong in a vise and then hammer the free end flat against a surface at 90° to the clamping surfaces of the jaws. Straighten the prong to its original position.

4. QUALITY: (a) The pins shall have a smooth bright finish, and shall be uniform in quality, temper, and diameter; free from rough zinc coating and injurious defects consistent with best commercial manufacturing practices.

(b) The pins shall be capable of withstanding, without rusting, not less than 150 hours exposure to the salt spray test conducted in accordance with the general procedure outlined in ASTM B117-41T, using specifically a 20% solution by weight of sodium chloride and an operating temperature of 95 ± 2°F.

5. SHAPE: The pins shall have ends slightly rounded, beveled or pointed, and with one end slightly extended beyond the other to permit easy assembly.



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6. **TOLERANCES:** Permissible variations in the cross-sectional dimensions of the half-round wire used for the manufacture of the pins shall be plus or minus 0.002 inch for the major axis and plus or minus 0.001 inch for the minor axis.
7. **SIZES:** Standard sizes shall start with 1/16 inch nominal diameter and increase by 1/32 inch increments to end including 1/4 inch nominal diameter, and then increase by 1/16 inch increments for diameters over 1/4 inch.
8. **REPORTS:** The manufacturer shall supply three copies of a notarized report of the chemical composition of each lot in each shipment. This report shall include the purchase order number, material specification number, part number, size, and quantity.
9. **REJECTIONS:** Material not conforming to this specification, or modifications specified on the drawing or 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 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:** Navy 42P7, Type B; Federal FF-P-386, Type B; SAE 1040; are listed for information only and shall not be construed as acceptable alternatives unless all requirements of this AMS are met.