# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

**AMS 2402**

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## Z I N C  P L A T I N G

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

2. PURPOSE: To protect metal parts against corrosion.

3. PREPARATION: Before placing parts in the plating solution they shall have a chemically clean surface prepared in such a manner as to restrict abrasion of the surfaces to a minimum. Springs must not be cleaned with inorganic acids. A momentary dip in acid after alkaline cleaning is permissible.

4. PROCEDURE: (a) Consists of an electrodeposition of zinc from a zinc cyanide solution directly onto the metal part without a flash coating of other metals, such as copper or nickel, underneath.

(b) After rinsing in water the plated parts shall be dipped in a 3-5% solution of chromic acid for from 1/2 to 2 minutes followed by a final rinse.

(c) Unless otherwise specified, after plating, washing and drying, parts cold worked, including rolled threaded parts, after being heat treated to a Rockwell of C-25 and over, springs and all other parts having a hardness of Rockwell C-40 and over, or a tensile strength of 180,000 lb per sq in, and over, except those which are carburized, shall be heated to 375°F in air, preferably in a circulating air furnace, and held at heat for 3 hours to remove hydrogen embrittlement due to plating and cleaning. Hardened parts which have been tempered at less than 375°F, including carburized parts, shall not be heated as above, but treated by an accepted method for each part.

5. THICKNESS: Thicknesses of plate shall be specified on the drawing or in a letter of instruction to comply with the following applications and/or requirements:

(a) Thickness may be designated by this specification number followed by a dash number designating the minimum thickness in ten thousandths of an inch; thus AMS 2402-1 is a thickness of 0.0001 to 0.0003 inch, AMS 2402-6 is a thickness of 0.0006 to 0.0008 inch, etc. A tolerance of +0.0002 inch in thickness of the plate is allowed except where other maximum and minimum values are specified.

(1) Parts plated to AMS 2402-1 and AMS 2402-2 shall withstand 50 hours salt spray.

(2) Parts plated to AMS 2402-3 and up shall withstand 125 hours salt spray.

(3) Parts plated to a thickness less than 0.0001 inch are not required to withstand salt spray.

(b) AMS 2402 applied to externally threaded parts shall mean a plate thickness capable of withstanding 50 hours salt spray.