

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 2468

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

Issued 1-15-57

Revised

HARD COATING TREATMENT OF ALUMINUM ALLOYS

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. PURPOSE: Primarily to increase surface hardness, and abrasion and corrosion resistance of aluminum and aluminum alloy parts containing, in general, less than 5% copper or 8% silicon, by the formation of a dense aluminum oxide. Alloys with higher silicon content can be coated satisfactorily with proper precautions in processing. Careful consideration should be given to use of this process on highly stressed parts because of the resulting marked lowering of endurance limit.
3. PREPARATION: Parts prior to coating shall have clean surfaces prepared with minimum abrasion, erosion, or pitting.
4. PROCEDURE: Consists of the formation of aluminum oxide on surfaces of parts made the anode in a suitable electrolyte.
 - 4.1 After coating, parts shall be thoroughly rinsed in cold, clean water and dried.
5. THICKNESS:
 - 5.1 AMS 2468 shall designate coating thickness of 0.002 in. $\pm$ 0.0005. Other coating thicknesses may be specified by this specification number and a suffix number designating the nominal thickness in thousandths of an inch. A tolerance of $\pm$ 0.0005 in. in thickness of coating will be allowed, unless otherwise specified on the drawing. Thus, AMS 2468-3 designates a coating thickness of 0.003 in. $\pm$ 0.0005.
 - 5.2 Thickness of coating shall be determined on representative parts or specimens by microscopic method, micrometer measurement, or as agreed upon by purchaser and vendor. When micrometer measurement is used, specimens for thickness determinations shall be of the same alloy as the parts they represent and shall be processed with the parts. Micrometer measurements shall be calibrated against microscopic measurements on specimens of the same alloy processed to the same nominal coating thickness.
6. TECHNICAL REQUIREMENTS:
 - 6.1 Weight of coating, when determined, shall be not less than 0.030 g per sq in. per 0.001 in. coating thickness.
 - 6.2 Coating may vary in color from amber to black but shall be substantially uniform on pieces of the same alloy processed to the same nominal coating thickness. Coated surfaces shall not have a sooty appearance or the presence of a moiré pattern.
 - 6.3 Coating shall have abrasion and corrosion resistance acceptable to the purchaser, as determined by a procedure agreed upon by purchaser and vendor.