



AEROSPACE MATERIAL SPECIFICATION

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PLATING ALUMINUM FOR SOLDERABILITY Zinc Immersion Process

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily to prepare aluminum parts for soft soldering.
3. PREPARATION:
 - 3.1 Impregnation of castings, when required or permitted, shall be done prior to plating. All excess impregnant shall be completely removed prior to curing or baking.
 - 3.2 Unless otherwise specified, all machining shall be completed prior to cleaning and plating.
4. PROCEDURE: Consists of thorough cleaning of the aluminum surfaces, etching in alkaline solution, a zinc immersion coating, a copper or brass strike, a light copper plate and, unless otherwise specified, an electrodeposit of tin or tin-zinc alloy.
 - 4.1 Cleaning and Etching: Prior to plating, the parts shall be cleaned to remove all grease, oil, and other surface contamination in accordance with the following procedure.
 - 4.1.1 Vapor degrease.
 - 4.1.2 Immerse parts in etch-type alkaline cleaner at 150 - 170 F (65.6 - 76.7 C) for 20 - 120 seconds.
 - 4.1.3 Rinse in cold running water.
 - 4.1.4 Alloys containing more than 1% silicon should be immersed in an aqueous solution of ammonium bifluoride and sulfuric acid at room temperature for 20 - 45 seconds. The solution shall contain 6 - 7 oz per gal of ammonium bifluoride and 4 - 5 oz per gal of sulfuric acid.
 - 4.1.5 Alloys containing more than 0.5% magnesium should be treated in an aqueous solution containing 14 - 16 oz of sulfuric acid per gal at 140 F \pm 10 (60 C \pm 5.6) for 3 - 5 minutes.
 - 4.1.6 Rinse in cold running water.
 - 4.1.7 Immerse in nitric acid solution (50% by volume) at room temperature for 30 - 60 seconds.
 - 4.1.8 Rinse in cold running water.
 - 4.2 Zinc Immersion Coating:
 - 4.2.1 Immerse with mild agitation in zinc immersion solution containing 13 - 14 oz per gal of zinc oxide and 70 - 71 oz per gal of sodium hydroxide at room temperature for 10 - 60 seconds. Equivalent zinc immersion solutions may be used to obtain the desired coating.
 - 4.2.2 Rinse in cold running water.

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