STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR TESTING ANODIC OXIDATION COATINGS ON ALUMINIUM AND ALUMINIUM ALLOYS

PART 1—THICKNESS AND RELATED PROPERTY TESTS

AS 2039.1.3

AVERAGE THICKNESS OF ANODIC OXIDATION COATINGS BY STRIP AND WEIGH METHOD

1 SCOPE. This standard describes the procedure for measuring the average thickness of anodic oxidation coatings on aluminium and aluminium alloys by stripping and weighing.

2 APPLICATION. The method is suitable for the testing of items where the surface area is not less than 3000 mm^2 and is of such a shape that the area can be readily determined.

Under the best conditions the method is accurate to ± 5 percent.

3 PRINCIPLE. Coated items are weighed and the coating stripped from the basis metal without any appreciable attack on the basis metal. Items are washed, dried and reweighed. The mass loss is used with the coating density and the test surface area to calculate the average coating thickness.

4 TEST REAGENT. The following stripping reagent is known to perform satisfactorily:

Phosphoric acid (ρ 1750 kg/m^3)	35 ml
Chromium trioxide (AR)	20 g
Distilled or deionized water to make	1 litre
Temperature	boiling

5 PREPARATION OF TEST PIECES.

5.1 General. Test pieces shall be free of foreign matter and if necessary shall be degreased with an organic solvent that does not attack the coating.

If the item has been lacquered the lacquer may be removed by treatment in concentrated nitric acid. Items shall then be washed thoroughly and dried.

5.2 Measurement of Area. The area of the coated item shall be determined by measurement and calculation to an accuracy of ± 5 percent.

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ISBN 0 7262 1450 7