STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR TESTING ANODIC OXIDATION COATINGS ON ALUMINIUM AND ALUMINIUM ALLOYS

PART 5—ABRASION RESISTANCE TESTS

AS 2039.5.1

JET TEST FOR ABRASION RESISTANCE FOR ANODIC OXIDATION COATINGS

1 SCOPE. This standard describes the procedure for testing the abrasion resistance of anodic oxidation coatings on aluminium and aluminium alloys to a jet of abrasive powder.

2 APPLICATION. The test is suitable for testing reasonably flat surfaces of anodic oxidation coatings.

3 PRINCIPLE. A stream of fine abrasive particles is blown at a uniform rate through a nozzle onto the test area of known mass. Loss of mass of the test piece and the mass of abrasive used to penetrate the coating are used in assessing the abrasion resistance.

NOTE: The method is developed from that originally suggested by A.E. Schuh and E.W. Kern with subsequent modifications by the British Non-ferrous Metals Research Association. Trials have shown that different pieces of apparatus will give the same results within an experimental error of about ± 10 percent but it is essential that the abrasive should be drawn from the same batch. Use of different batches of abrasive will give different absolute results; moreover, it is not practicable at present to produce a standard reference sample of anodized aluminium. The value of the test at present is in relating production work to an agreed sample.

4 APPARATUS. The apparatus used shall conform to the requirements of Fig. 1.

5 PREPARATION OF TEST PIECE. Test pieces of reasonably flat dimensions shall be degreased in a solvent that does not attack the coating, and weighed to the nearest milligram.

6 PROCEDURE. The abrasion resistance test shall be carried out as follows:

(a) Clamp the jet, with the abrasive hopper directly above it, in a cabinet designed to contain the used abrasive while providing support for the test piece in such a position that it can be observed during testing. Connect the side tube of the jet to a supply of compressed air through a valve and a flow meter (range 10-100 litres of air per minute).

a
ISBN 0 7262 1466 3