STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR TESTING ANODIC OXIDATION COATINGS ON ALUMINIUM AND ALUMINIUM ALLOYS

PART 5—ABRASION RESISTANCE TESTS

AS 2039.5.2

ASTM TEST FOR ABRASION RESISTANCE OF ANODIC OXIDATION COATINGS

1 SCOPE. This standard describes the procedure for determining the abrasion coefficient of anodic oxidation coatings on aluminium and aluminium alloys by means of an air blast abrasion tester (the ASTM test).

2 APPLICATION. The method is suitable for determining the abrasion resistance of anodic oxidation coatings on flat surfaces of uniform texture.

3 PRINCIPLE. Abrasive powder of known size is allowed to impinge under controlled conditions onto the surface of the coated item. The quantity of abrasive required to cut through the oxide coating is taken as a measure of the abrasion coefficient.

4 APPARATUS.

4.1 General. The following apparatus is required:

(a) Abrasion tester (see Figs 1 and 2).

(b) Air-control assembly (see Fig. 3).

4.2 Calibration of Apparatus. The abrasion tester, equipped with a standard glass nozzle, shall be assembled as shown in Fig. 1. The inner tube of the nozzle (see Fig. 4) shall be connected by a flexible tubing to a suitable oil-free supply, which shall be delivered from the control apparatus (see Fig. 3) capable of maintaining the pressure within ± 0.2 kPa of the specified test pressure. For purposes of calibration the pressure shall be adjusted to 133 kPa and the abrasive outlet opened. The machine shall be run for 3 min and shall deliver an average of 44 ± 1 g/ min of abrasive powder.

The diameter of the air tubing shall be sufficiently large to permit a flow of air at 70 l/min at the nozzle. When these conditions are realized, the

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