ISO 18768-1:2022-06 (E)

Organic coatings on aluminium and its alloys - Methods for specifying decorative and protective organic coatings on aluminium - Part 1: Powder coatings

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Information to be supplied by the customer to the surface processor **3**

5 Metal preparation and pretreatment **4**
5.1 Material (substrate) 4
5.2 Pretreatment of the substrate 4
5.2.1 General 4
5.2.2 Degreasing, etching and rinsing 5
5.2.3 Anodic oxidation coatings 5
5.2.4 Chemical conversion coatings 5
5.2.5 Alternative pretreatment 5

6 Categories **6**

7 Tests **7**
7.1 General 7
7.2 Appearance 8
7.2.1 General 8
7.2.2 Measurement 8
7.2.3 Requirement 8
7.3 Colour 8
7.3.1 General 8
7.3.2 Visual method 8
7.3.3 Instrumental method 9
7.4 Gloss 9
7.4.1 General 9
7.4.2 Visual method 9
7.4.3 Instrumental method 9
7.5 Thickness 10
7.5.1 General 10
7.5.2 Measurement 10
7.5.3 Requirement 10
7.6 Hardness 10
7.6.1 General 10
7.6.2 Pencil hardness test 11
7.6.3 Buchholz indentation test 11
7.7 Adhesion 11
7.7.1 Dry adhesion test 11
7.7.2 Wet adhesion test 12
7.8 Impact resistance 12
7.8.1 General 12
7.8.2 Falling-weight test 12
7.8.3 DuPont test 13
7.9 Abrasion resistance 13
7.9.1 Measurement 13
7.9.2 Requirement 13

7.10 Cupping test ... 14
7.10.1 Measurement ... 14
7.10.2 Requirement ... 14
7.11 Cylindrical mandrel bend test ... 14
7.11.1 Measurement ... 14
7.11.2 Requirement ... 14
7.12 Processing resistance ... 14
7.12.1 Measurement ... 14
7.12.2 Requirement ... 14
7.13 Chemical resistance ... 14
7.13.1 General ... 14
7.13.2 Acid resistance ... 15
7.13.3 Alkali resistance ... 15
7.13.4 Detergent resistance ... 15
7.13.5 Mortar resistance ... 16
7.14 Solvent resistance ... 16
7.14.1 Measurement ... 16
7.14.2 Requirement ... 17
7.15 Corrosion resistance ... 17
7.15.1 General ... 17
7.15.2 Neutral salt spray (NSS) test ... 17
7.15.3 Acetic acid salt spray (AASS) test ... 18
7.15.4 Copper-accelerated acetic acid salt spray (CASS) test ... 18
7.15.5 Cyclic corrosion test ... 19
7.15.6 Filiform corrosion resistance ... 19
7.15.7 Resistance to humid atmosphere containing sulfur dioxide ... 19
7.16 Humidity resistance ... 20
7.16.1 Measurement ... 20
7.16.2 Requirement ... 20
7.17 Boiling water resistance ... 20
7.17.1 Measurement ... 20
7.17.2 Requirement ... 21
7.18 Weathering resistance ... 21
7.18.1 General ... 21
7.18.2 Outdoor exposure test ... 21
7.18.3 Accelerated weathering resistance ... 22
7.19 Sealing compounds adhesion ... 23
7.19.1 Measurement ... 23
7.19.2 Requirement ... 23

Annex A (informative) **Summary of information to be supplied by the customer to the surface processor** ... **24**

Annex B (informative) **Coating powders** ... **27**

Annex C (informative) **Categories for architectural application** ... **28**

Bibliography ... **29**