

Specification for

Anodic oxidation coatings on wrought aluminium for external architectural applications

ICS 25.220.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Surface Coatings (other than Paints) Standards Policy Committee (SRC/-) to Technical Committee SRC/32, upon which the following bodies were represented:

- Aluminium Federation
- Aluminium Finishing Association
- Aluminium Window Association
- Association of Builders' Hardware Manufacturers
- British Lock Manufacturers' Association
- British Metal Finishing Suppliers' Association
- Institute of Corrosion
- Institute of Metal Finishing
- Institution of Chemical Engineers
- Metal Finishing Association
- Metal Window Federation Ltd.

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Foreword

This revision of BS 3987 was prepared under the direction of the Surface Coatings (other than Paints) Standards Policy Committee. It gives a specification for anodic oxidation coatings on wrought aluminium for external architectural applications. It supersedes the previous edition, BS 3987:1974, which is withdrawn.

The architect or designer of architectural components is advised to consult with the aluminium supplier to ensure that the correct grade of aluminium is selected in order to produce the required finish and with the anodizer to ensure that the dimensions and configuration of the components are such that the requirements of this standard can be met as an economic proposition. It is important to note that anodizing requirements should be considered at the design stage and attention of designers is drawn to BS 4479-5. The anodized surface develops a characteristic appearance depending on the grade of aluminium and the anodizing process used. Such coatings, which do not incorporate colouring matter, are known as “clear” (or sometimes “natural” or “silver”) anodized aluminium.

This revision of BS 3987 differs from the previous edition in that guidance is given in appendices on information to be supplied by the purchaser to the anodizer, on the selection of aluminium, on the surface texture and on sampling. The significant surface is defined and is no longer specified by the purchaser and colour fastness is specified. Values for thickness and the surface abrasion resistance of the coatings are also given.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 9, an inside back cover and a back cover.

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1 Scope

This British Standard specifies requirements for clear and coloured anodic oxidation coatings on wrought aluminium for external architectural applications. Guidance on the information to be supplied by the purchaser to the anodizer is given in Appendix A.

Guidance on properties affecting coating performance is given although reflectance and gloss are not specified (see Appendix B).

NOTE 1 The coatings consist mainly of aluminium oxide and are produced by an electrolytic oxidation process during which the aluminium acts as the anode.

NOTE 2 The composition of the aluminium is not specified but that used is assumed to be suitable for anodizing (see Appendix C).

NOTE 3 Temporary protection and maintenance of anodized aluminium after anodizing may be necessary (see Appendix D and Appendix E).

NOTE 4 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1

aluminium

aluminium and aluminium-based alloys

2.2

anodized aluminium

aluminium with an anodic oxidation coating, produced by an electrolytic oxidation process in which the surface of aluminium is converted to a coating, generally an oxide, having protective, decorative or functional properties

2.3

clear anodized aluminium

anodized aluminium with a substantially colourless, translucent anodic oxidation coating

NOTE This is colloquially known as natural anodized aluminium.

2.4

colour anodized aluminium

anodized aluminium coloured either during anodizing or by subsequent processing

2.5

integral colour anodized aluminium

anodized aluminium that has been anodized using an appropriate (usually organic acid-based) electrolyte which produces a coloured coating during the anodizing process itself

2.6

electrolytically coloured anodized aluminium

anodized aluminium with an anodic oxidation coating that has been coloured by the electrolytic deposition of a metal or metal oxide in the pore structure

2.7

dyed anodized aluminium

anodized aluminium with an anodic oxidation coating coloured by absorption of dyestuffs or pigments into the pore structure

2.8

combination colour anodized aluminium

anodized aluminium with an anodic oxidation coating that has been coloured by electrolytic colouring, or produced by integral colour anodizing, followed by absorption dyeing