

**SPECIFICATION FOR
ELECTROPLATED COATINGS OF
NICKEL PLUS CHROMIUM ON
PLASTICS MATERIALS**

THIS BRITISH STANDARD, having been approved by the Surface Coatings (other than paints) Industry Standards Committee, was published under the authority of the Executive Board on 31 March, 1970.

SBN : 580 06130 2

The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, price £1. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

- BS 576. Acetic acid.
- BS 872. Abrasive papers and cloths (technical products).
- BS 998. Vacuum salt for butter and cheese making and other food uses.
- BS 2870. Rolled copper and copper alloys, sheet, strip and foil.
- BS 3745. Evaluation of results of accelerated corrosion tests on metallic coatings.

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on this standard:
Committee reference SRE/2 Draft for comment 69/5497

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CO-OPERATING ORGANIZATIONS

The Surface Coatings (other than paints) Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- Assay Offices Committee of Great Britain
- Association of Metal Sprayers
- British Bolt, Nut, Screw and Rivet Federation
- British Electrical and Allied Manufacturers' Association
- British Jewellers' Association
- *British Non-ferrous Metals Research Association
- *British Steel Industry
- *Chemical Industries Association
- *Cycle & Motor Cycle Industries Association Limited
- Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales
- *Electronic Engineering Association
- Engineering Equipment Users' Association
- Greater London Council
- *Institute of Metal Finishing
- Institute of Sheet Metal Engineers
- Institute of Vitreous Enamellers
- *Metal Finishing Association
- *Ministry of Defence, Army Department
- Ministry of Defence, Navy Department
- Ministry of Technology
- *Society of Motor Manufacturers and Traders Limited
- Tin Research Institute
- Vitreous Enamel Development Council
- *Zinc Development Association

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- Association of Builders' Hardware Manufacturers
- British Lock and Latch Manufacturers' Association
- British Plastics Federation
- British Railways Board
- Institution of Chemical Engineers
- Institution of Corrosion Technology
- Institution of Engineering Inspection
- Lighting Industry Federation Limited
- Lloyds Register of Shipping
- National Brassfoundry Association
- Post Office
- Scientific Instrument Manufacturers' Association
- Spring Research Association
- Zinc Alloy Die Casters' Association
- Individual firms

BRITISH STANDARD SPECIFICATION FOR ELECTROPLATED COATINGS OF NICKEL PLUS CHROMIUM ON PLASTICS MATERIALS

FOREWORD

This British Standard covers a range of coatings of nickel plus chromium on plastics materials for various conditions of service. No distinction is made between the types of plastics material that are suitable for electroplating and no requirements are laid down concerning the surface condition of the plastics material or the level of moulding stresses as all of these factors should be the subject of agreement between the supplier and the purchaser.

Because of the difference in the thermal coefficient of expansion of the plastics material and the coating, it is essential that the coating should possess sufficient ductility. This may be achieved by using either copper or ductile nickel for the first electrodeposited layer.

The purchaser should specify the service condition number denoting the severity of the conditions the coating is to withstand. It is not necessary to state the classification number of the coating, defined in terms of the nature, thickness and properties of the deposits it comprises, but the purchaser may include this if he wishes.

For both nickel and chromium deposits, the minimum thickness requirements apply only to those portions of the significant surface that can be touched by a ball 20 mm in diameter.

It is essential that the purchaser should state the service condition number: if desired, the classification number may be stated in addition to the service condition number. Merely to ask for plating to be carried out to BS 4601 is insufficient.

SPECIFICATION

1. SCOPE

This British Standard specifies requirements for electroplated coatings of nickel* plus chromium on plastics materials for other than engineering purposes.

2. SIGNIFICANT SURFACE

For the purposes of this British Standard the following definition applies:

Significant surface. The part of the surface which is essential to the appearance or serviceability of the article and which is to be covered by the coating.

When necessary, the significant surface shall be the subject of agreement, and shall be indicated on drawings, or by the provision of suitably marked samples.....

3. APPEARANCE

Over the significant surface, the plated article shall be free from clearly visible plating defects such as blisters, pits, roughness, cracks or unplated areas, and shall not be stained or discoloured. The extent to which blistering can be tolerated on non-significant surfaces shall be the subject of agreement between the supplier and the purchaser. On articles where a contact mark is inevitable, its position shall also be the subject of agreement between the supplier and the purchaser.

The plated article shall be clean and free from damage. The purchaser shall state the appearance required, e.g. bright, dull or satin. Alternatively, a sample showing the required finish shall be supplied or approved by the purchaser.

4. COATING REQUIREMENTS

4.1 Manner of specifying requirements. When ordering articles to be plated in accordance with this standard, the purchaser shall state, in addition to the number of the standard, BS 4601, the service condition number denoting the severity of the conditions which the coating is to withstand (see 4.2) and, if desired, the classification number of the particular coating required (see 4.3). If the service condition number is quoted and not the classification number, the supplier shall be free to supply any of the classes of coating corresponding to the service condition number, but he shall inform the purchaser of the classification number of the coating supplied.

- With a copper undercoat in many cases.