AS 1406—1982

Australian Standard®

ELECTROPLATED COATINGS—NICKEL AND CHROMIUM ON PLASTICS FOR DECORATIVE APPLICATIONS

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Aluminium Development Council

Australasian Institute of Metal Finishing

Australian Zinc Development Association

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Copper and Brass Information Centre

Department of Defence

Department of Industry and Commerce

Electricity Supply Association of Australia

Metal Finishing Supply Houses

Metal Trades Industry Association of Australia

Royal Australian Chemical Institute

Society of Automotive Engineers—Australasia

Telecom Australia

University of Queensland

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PREFACE

This edition of this standard was prepared by the Association's Committee on Metal Finishing to supersede AS 1406—1972.

In preparing this edition of the standard the committee took the opportunity to widen the range of deposits covered by the standard. Provision has now been made for nickel–iron deposits because such deposits are widely used in industry.

Test methods are now cross–referenced to AS 2331 which has replaced AS K173.

A classification code has been introduced and purchasing guidelines have been updated and included in an appendix.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

ELECTROPLATED COATINGS—NICKEL AND CHROMIUM ON PLASTICS FOR DECORATIVE APPLICATIONS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for electroplated coatings of nickel and nickel plus chromium on plastics for decorative applications. It also deals with coatings of nickel-iron alloys containing a maximum iron content of 25 percent, and coatings incorporating a copper undercoat. It does not preclude the use of gold, copper, brass or other metals plated over nickel.

NOTES:

1. Plastics items to be coated should have low residual stress. To achieve this condition, plastics mouldings. extrusions etc should be stress-relieved or annealed prior to electroplating.
2. Supplementary information to be supplied with the enquiry or order is given in Appendix A.

1.2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1247 The Evaluation of Results of Accelerated Corrosion Tests on Metallic Coatings

AS 2331 Methods of Test for Metallic and Related Coatings
- 2331.1.1 Local Thickness Tests—Micrographic Examination of Cross-sections
- 2331.1.2 Local Thickness Tests—Coulometric Method
- 2331.3.3 Corrosion and Related Property Tests—Copper Accelerated Acetic Acid Salt Spray (CASS) Test
- 2331.3.10 Corrosion and Related Property Tests—Cracks and Pores in Chromium
- 2331.4.1 Physical Tests—Qualitative Adhesion Tests
- 2331.4.2 Physical Tests—Ductility Test*
- 2331.4.5 Physical Tests—Electroplated Plastics—Thermal Cycling Tests

AS 2483 Metal Finishing—Recommended Sampling Plans for the Inspection and Testing of Coatings

AS XXXX Guidelines for the Design of Items for Metal Finishing*

AS K178 Glossary of Terms used in Electroplating

1.3 DEFINITIONS. For the purpose of this standard, the definitions given in AS K178 together with the following apply:

Significant surface—that part of the surface of an item which is required to be covered by the coating and which is essential to the appearance and serviceability of the item and which can be touched with a 20 mm diameter ball.

1.4 SERVICE CONDITION NUMBER. The service condition number comprises two parts, a number from 1 to 4 inclusive and a letter, A or B, which together indicate the severity of the service conditions and the requirements with respect to thermal cycling that the coating is likely to encounter in service, as follows:

4— Exceptionally severe corrosive conditions, e.g. those encountered by marine parts, some exterior motor car and motor cycle components, and those exposed to industrial atmospheres.

3— Moderate exposure outdoors, e.g. bicycle parts and some exterior motor car components, perambulator parts, supermarket trolleys and washing machine components.

2— Indoor conditions where condensation may occur, e.g. bathroom and electric light fittings.

1— Warm dry conditions, e.g. office furniture and cabinet hardware.

The letter A or B included in the service condition number indicates the thermal cycle test required (see Clause 2.5).

1.5 CLASSIFICATION OF COATINGS. Coatings are classified according to the coating system and the minimum thickness values set out in Table 1.1 and are designated by an appropriate service condition number.

* In course of preparation.