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THIS BRITISH STANDARD, having been approved by the Plastics Industry Standards Committee and endorsed by the Chairman of the Chemical Divisional Council, was published under the authority of the General Council on 28th February, 1955.

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 2500, indexed and cross-indexed for reference, together with an abstract of each standard, will be found in the Institution's Yearbook, price 12s. 6d.

This standard makes reference to the following British Standards:—

B.S. 57. B.A. screws, bolts, nuts and plain washers.
B.S. 148. Insulating oil (low viscosity) for transformers and switchgear.
B.S. 358. Measurement of voltage with sphere-gaps.
B.S. 871. Abrasive papers and cloths for general purposes.

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 B.S.I. references relate to the work on this standard:—
Committee reference PLC/13/2 Draft for comment CR(PLC)4562

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CO-OPERATING ORGANIZATIONS

The Plastics Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives of the following Government departments and scientific and industrial organizations:—

Admiralty
Board of Trade
*British Electrical and Allied Industries Research Association
British Electrical and Allied Manufacturers' Association
*British Plastics Federation
*D.S.I.R.—Building Research Station
General Post Office
*Ministry of Supply
*Ministry of Works
*Radio Industry Council
*Royal Institute of British Architects

The Government departments 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:—

Engineering Equipment Users' Association
National Physical Laboratory

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BRITISH STANDARD SPECIFICATION FOR

PHENOLIC LAMINATED SHEET

FOREWORD See Amdt No. 2.

This British Standard is one of a series dealing with the products of the Plastics Industry. It covers a number of established types of phenolic laminated sheet. These laminates have in general good machining properties, mechanical strength, electrical insulating properties and resistance to corrosive influences.

The tests have been selected for the purpose of assessing and differentiating between the types, and not in consideration of any particular use to which the materials may be put.

NOTE. The following standards for laminated sheet for specific applications exist and are not superseded by this standard:—

~~B.S. 668. Laminated synthetic resin bonded sheet (fabric base) for use~~ as gear material.

~~B.S. 972. Synthetic resin bonded fabric sheet for electrical and mechanical purposes.~~

B.S. 1137. Synthetic-resin bonded-paper sheets for use at power frequencies.

B.S. 1323. Synthetic-resin bonded-paper sheet (thermosetting) for use in the building industry.

B.S. 2076. Thermosetting synthetic-resin bonded-paper insulating sheets for use at radio frequencies.

SPECIFICATION

SCOPE

1. This British Standard specifies a number of types of phenolic laminated sheet.

This standard covers, for any particular type of material, only sheet of those thicknesses for which tolerances are given in Table 1.

NOTE. Material containing added colouring matter may not fulfil all the requirements of this British Standard.

CLASSIFICATION OF MATERIALS

2. The method of classification adopted in this standard is given below:

Group 1. Materials in which the mechanical properties in directions A and B (as defined in Clause 3) are of the same order and for which any assessment of mechanical strength of a sheet is based upon the lower of the values corresponding to these two directions. Such materials are intended to be used without consideration of directions A and B.

The materials of this group are divided in accordance with their composition into four Classes A, F, P and W, each sub-divided into types.

Class A. Sheet with asbestos filler comprising types A1, A2, A3 and A4.

NOTE. The filler in A1 is asbestos felt, in A2 asbestos paper, and in A3 and A4 woven asbestos fabric.

Class F. Sheet with cotton fabric filler comprising types F1, F2 and F3.

NOTE. The numbers of threads per linear inch, warp and weft, of the fabric fillers usually fall within the ranges given below:

Type F1 : 95–110
Type F2 : 45–100
Type F3 : 30–50

It is not, however, a requirement of this British Standard that they should fall within these ranges.

Class P. Sheet with cellulose paper filler comprising types P1, P2, P3 and P4.

Class W. Sheet with wood veneer filler comprising types W1 and W2.

Group 2. Materials in which the mechanical properties in directions A and B are markedly different and for which any assessment of the mechanical strength of a sheet is based upon the higher of the values corresponding to these two directions. Such materials are intended to be used with due regard to the difference in the mechanical strengths associated with directions A and B.

Type UW1 is a sheet with wood veneer filler.

DEFINITIONS

3. For the purpose of this British Standard the following definitions shall apply:—

(i) *Phenolic laminated sheet.* A laminated plastics sheet in which the bonding medium is a synthetic resin based on phenol or its homologues.

(ii) *Flatwise.* Perpendicular to the plane of lamination, a direction in which a load or electric stress may be applied in testing a laminated plastics sheet.

(iii) *Edgewise.* Parallel with the plane of lamination, a direction in which a load or electric stress may be applied in testing a laminated plastics sheet.

(iv) *Direction A and direction B.* Two directions in the plane of a sheet which are mutually at right angles and are related to the surface layers of the laminate. One of these directions is parallel with either the warp or the weft threads of a fabric, with the machine direction of a paper or with the grain of a wood veneer laminate.

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