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SPECIFICATION FOR
PHENOLIC RESIN
BONDED PAPER SHEETS
FOR ELECTRICAL PURPOSES
AT POWER FREQUENCIES



BRITISH STANDARDS INSTITUTION

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B.S. 1137 : 1966

Price 10/- net

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THIS BRITISH STANDARD, having been approved by the Electrical Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 29th December, 1966.

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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 4000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, price 15s. The B.S. Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

B.S. 148. Insulating oil for transformers and switchgear.
B.S. 871. Abrasive papers and cloths for general purposes.
B.S. 2076. Thermosetting synthetic-resin bonded-paper insulating sheets for use at radio frequencies.

B.S. 3718. Laboratory humidity ovens (non-injection type).

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 references ELE/16 and ELE/16/53/2
Draft for comment D64/6130

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BRITISH STANDARD SPECIFICATION FOR

PHENOLIC RESIN BONDED PAPER SHEETS FOR ELECTRICAL PURPOSES AT POWER FREQUENCIES

FOREWORD

This British Standard, which is published under the authority of the Electrical Industry Standards Committee, is based upon information supplied by the Electrical Research Association.

In view of the considerable number of synthetic resins which have become available since the preparation of B.S. 1137 : 1949, the title of the standard has been changed to 'Phenolic resin bonded paper sheets for electrical purposes at power frequencies' so as to describe more accurately the material covered by the specification.

Requirements for Type II material have been introduced in this revision to cover material having properties superior to those of Type III but hitherto of necessity included in that type. Some slight changes in limits have been introduced for Types I and III to allow for changes in test procedures, but the required quality of the material is the same in each case.

NOTE 1. Where metric equivalents have been given the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in B.S. 350, 'Conversion factors and tables'.

NOTE 2. In place of the customary, but incorrect, use of the pound and kilogramme as units of force, the units called pound-force (abbreviation lbf) and kilogramme-force (abbreviation kgf) have been used in this standard. These are the forces which, when acting on a body of mass one pound or one kilogramme, give it an acceleration equal to that of standard gravity.

SPECIFICATION

SCOPE

1. This British Standard specifies requirements for phenolic resin bonded paper sheets intended for electrical insulating purposes for use on power circuits with direct current and with alternating current of frequency up to 100 c/s. Material for use at radio frequencies is covered by B.S. 2076*, which includes a grade having a lower water absorption than Type I.

Three types are specified, each with different electrical, mechanical and water absorption properties, and in thicknesses from $\frac{1}{16}$ in (0.4 mm) up to and including 1 in (25.4 mm).

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

CO-OPERATING ORGANIZATIONS

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

- Associated Offices' Technical Committee
- Association of Consulting Engineers
- Association of Mining Electrical and Mechanical Engineers
- Association of Supervising Electrical Engineers
- *British Electrical and Allied Manufacturers' Association
- British Railways Board
- Crown Agents for Oversea Governments and Administrations
- Electric Cable Makers' Confederation
- Electric Lamp Industry Council
- Electric Light Fittings Association
- Electrical Contractors' Association (Incorporated)
- Electrical Contractors' Association of Scotland
- *Electrical Research Association
- *Electricity Council, The Generating Board and the Area Boards in England and Wales
- Electronic Engineering Association
- Engineering Equipment Users' Association
- Institution of Electrical Engineers
- *Ministry of Aviation
- *Ministry of Defence, Army Department
- *Ministry of Defence, Navy Department
- Ministry of Labour (H.M. Factory Inspectorate)
- Ministry of Power
- Ministry of Public Building and Works
- *Ministry of Technology
- Municipal Passenger Transport Association (Incorporated)
- National Inspection Council for Electrical Installation Contracting
- National Physical Laboratory
- Oil Companies Materials Association
- *Post Office
- Public Transport Association (Incorporated)
- South of Scotland Electricity Board

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:

- British Electro-Ceramic Manufacturers' Association
- British Plastics Federation
- Glass Textile Association
- Radio and Electronic Component Manufacturers' Federation
- Technical Section of the British Paper and Board Makers' Association
- Telephone Manufacturers' Technical Development Committee