

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Pressboard and presspaper for electrical purposes –
Part 1: Definitions and general requirements**

**Carton comprimé et papier comprimé à usages électriques –
Partie 1: Définitions et exigences générales**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PRESSBOARD AND PRESSPAPER
FOR ELECTRICAL PURPOSES –****Part 1: Definitions and general requirements**

FOREWORD

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International Standard IEC 60641-1 has been prepared by IEC technical committee 15: Solid electrical insulating materials.

This second edition cancels and replaces the first edition published in 1979 and amendment 1 (1993). This edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- the kind of surface finish shall no longer be specified in the standard;
- fixed nominal thicknesses have been replaced by preferred thicknesses;
- types B.6 and P.6 have been replaced, but the designations have been kept;
- types B.7 and P.7 have been deleted.

This bilingual version, published in 2008-01, corresponds to the English version.

The text of this standard is based on the following documents:

CDV	Report on voting
15/352/CDV	15/388/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The French version of this standard has not been voted upon.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 60641 series, under the general title *Pressboard and presspaper for electrical purposes*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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PRESSBOARD AND PRESSPAPER FOR ELECTRICAL PURPOSES –

Part 1: Definitions and general requirements

1 Scope

This part of IEC 60641 contains definitions related to a classification of, and the general requirements to be fulfilled by, pressboard and presspaper for electrical purposes.

2 Terms and definitions

2.1

pressboard

board normally made on an intermittent board machine from pulp made entirely from vegetable origin of high chemical purity. It is characterized by its relatively high density, even thickness, surface smoothness, high mechanical strength, flexibility, ageing resistance and electrical insulating properties. The surface may be smooth or textured

2.2

presspaper

multilayer paper made by a continuous process from pulp entirely from vegetable origin and of high chemical purity. It is characterized by its density, even thickness, surface smoothness, high mechanical strength, ageing resistance and electrical insulating properties

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2.3

calendered

pressboard or presspaper, which is subsequently treated with a calender

2.4

pre-compressed

pressboard to which heat has been applied during pressing

2.5

glazed

pressboard or presspaper to which lustre has been imparted. The lustre may be imparted by any appropriate drying or mechanical finishing process

Based on ISO vocabulary of paper terms.

3 Classification

Based on compositions and properties, this standard covers the types of pressboard or presspaper shown in Table 1. To the description of the types, some examples of known applications are added without implying any kind of restriction on other possible applications.

4 General requirements

4.1 Composition

All types of pressboard and presspaper covered by this standard shall be made entirely from vegetable fibres. All types shall be free from extraneous material and adhesive and shall, where necessary, contain a suitable dyestuff.

NOTE The absence of contaminants such as metallic, inorganic and organic particles indicates the immaculateness of the material.

Many of the types listed in Table 1 are specified as made from "sulphate wood pulp". This raw material is used in order to enable appropriate chemical purity and mechanical properties to be achieved (excluding, for example, mechanical pulps).

Advances in pulp technology have enabled the requisite properties to be obtained by more environmentally satisfactory processes, which cannot be described as "the sulphate process". The term "sulphate wood pulp" in Table 1 is intended to include such materials.

In order to give satisfactory performance, it is necessary for the pulp to have a high degree of polymerisation (DP) similar to that of unbleached sulphate pulp of high quality, and to be unbleached. The pulp must be capable of similar properties to sulphate pulp in all other respects.

4.2 Finish

Pressboard or presspaper shall have a finish as agreed between purchaser and supplier.

4.3 Machineability

All pressboard shall be capable of being sheared. Pressboard and presspaper of a thickness of 3,0 mm or less shall also be capable of being punched without showing ragged edges. The operation shall be carried out in accordance with the recommendations of the manufacturer.

5 Dimensions

Thickness

The preferred nominal thickness (in millimetres) of the pressboard and presspaper shall be one of the following:

Presspaper: 0,075 - 0,10 - 0,13 - 0,15 - 0,18 - 0,20 - 0,25 - 0,30 - 0,40 - 0,50 - 0,60 - 0,80

Pressboard: 0,8 - 1,0 - 1,5 - 2,0 - 2,5 - 3,0 - 4,0 - 5,0 - 6,0 - 7,0 - 8,0

Other thicknesses are possible. The tolerances on thickness are to be found in IEC 60641-3.

6 Conditions of supply

The pressboard and presspaper shall be placed in a packing which ensures adequate protection during transport, handling and storage.

A consignment of pressboard or presspaper shall be legibly and indelibly marked with the following information.

- a) Manufacturer's name or trademark, if any.
- b) Type of pressboard or presspaper as given in Table 1
- c) Nominal thickness.
- d) Sheet size or roll width.
- e) Weight (net/gross)

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Table 1 – Classification

Pressboard		Presspaper		Examples of application
Basic type	Subdivisions	Basic type	Subdivisions	
B0. Pressboard of particularly high chemical purity	B0.1 100 % sulphate wood pulp B0.2 100 % cotton B0.3 Mixture of sulphate wood pulp and cotton	P0. High density presspaper of particularly high chemical purity	P0.1 100 % sulphate wood pulp P0.2 100 % cotton P0.3 Mixture of sulphate wood pulp and cotton	Capacitors and hermetic motors
		P1. Low density presspaper of particularly high chemical purity and of high oil absorption.	P1.1 100 % sulphate wood pulp P1.2 100 % cotton P1.3 Mixture of sulphate wood pulp and cotton	Capacitors
B2. Pressboard characterized by high chemical purity	B2.1 100 % sulphate wood pulp B2.2 100 % cotton B2.3 Mixture of sulphate wood pulp and cotton B2.4 Mixture of cotton and jute hemp	P2. Presspaper of high density and high chemical purity	P2.1 100 % sulphate wood pulp P2.2 100 % cotton P2.3 Mixture of sulphate wood pulp and cotton P2.4 Mixture of cotton and jute hemp	Transformers
B3. Pre-compressed pressboard, a very hard and rigid board characterized by high chemical purity and mechanical strength. Its surface bears a cloth mark	B3.1 100 % sulphate wood pulp B3.2 100 % cotton B3.3 Mixture of sulphate wood pulp and cotton B3.4 Mixture of cotton and jute hemp			Transformers
B4. Pressboard characterized by high chemical purity and high oil absorption and capable of being shaped	B4.1 100 % sulphate wood pulp B4.2 100 % cotton B4.3 Mixture of sulphate wood pulp and cotton B4.4 Mixture of cotton and jute hemp	P4. Presspaper of high purity and of high oil absorption	P4.1 100 % sulphate wood pulp P4.2 100 % cotton P4.3 Mixture of sulphate wood pulp and cotton P4.4 Mixture of cotton and jute hemp	Transformers and oil-immersed equipment
B5. Mouldable press board of high chemical purity and high oil absorption and capable of being shaped	B5.1 100 % sulphate wood pulp B5.2 100 % cotton B5.3 Mixture of sulphate wood pulp and cotton P5.4 Mixture of cotton and jute hemp	P5. Low density presspaper of high purity and high oil absorption	P5.1 100 % sulphate wood pulp P5.2 100 % cotton P5.3 Mixture of sulphate wood pulp and cotton P5.4 Mixture of cotton and jute hemp	Transformers and oil-immersed equipment
B6. Pressboard of low porosity for dry type application	B6.1 100 % sulphate wood pulp B6.2 100 % cotton B6.3 Mixture of sulphate wood pulp and cotton B6.4 Mixture of cotton and jute hemp	P6. High density presspaper of low porosity usually sized	P6.1 100 % sulphate wood pulp P6.2 100 % cotton P6.3 Mixture of sulphate wood pulp and cotton P6.4 Mixture of cotton and jute hemp	Motors and general electrical equipment

Bibliography

IEC 60641-3 (all subparts), *Pressboard and presspaper for electrical purposes – Part 3: Specifications for individual materials*

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