



**NSAI**  
Standards

Irish Standard  
I.S. EN 60893-3-3:2004

Insulating materials - Industrial rigid laminated sheets based on thermosetting resins for electrical purposes -- Part 3-3: Specifications for individual materials - Requirements for rigid laminated sheets based on melamine resins (IEC 60893-3-3:2003 (EQV))

## I.S. EN 60893-3-3:2004

*Incorporating amendments/corrigenda issued since publication:*

EN 60893-3-3:2004/A1:2012

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|--|--|---|
| <i>This document replaces:</i><br>EN 60893-3-3:1995  | <i>This document is based on:</i><br>EN 60893-3-3:2004<br>EN 60893-3-3:1995    | <i>Published:</i><br>16 January, 2004<br>6 February, 1995                 |
| This document was published under the authority of the NSAI and comes into effect on:<br><br>13 February, 2004 |  | ICS number:<br>29.035.01  |
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EUROPEAN STANDARD

**EN 60893-3-3/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2012

ICS 29.035.01

English version

**Insulating materials -  
Industrial rigid laminated sheets based on thermosetting  
resins for electrical purposes -  
Part 3-3: Specifications for individual materials -  
Requirements for rigid laminated sheets based on melamine resins  
(IEC 60893-3-3:2003/A1:2011)**

Matériaux isolants -  
Stratifiés industriels rigides en planches  
à base de résines thermodurcissables  
à usages électriques -  
Partie 3-3: Spécifications pour matériaux  
particuliers -  
Prescriptions pour stratifiés rigides en  
planches à base de résine mélamine  
(CEI 60893-3-3:2003/A1:2011)

Isolierstoffe - Tafeln aus technischen  
Schichtpressstoffen auf der Basis  
warmhärtender Harze für  
elektrotechnische Zwecke -  
Teil 3-3: Bestimmungen für einzelne  
Werkstoffe - Anforderungen für Tafeln  
aus Schichtpressstoffen auf der Basis von  
Melaminharzen  
(IEC 60893-3-3:2003/A1:2011)

This amendment A1 modifies the European Standard EN 60893-3-3:2004; it was approved by CENELEC on 2012-01-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## **Foreword**

The text of document 15/489/CDV, future amendment 1 to edition 2 of IEC 60893-3-3:2003/A1:2011, prepared by IEC/TC 15 "Solid electrical insulating materials" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60893-3-3:2004/A1:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-12-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-01-02

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

## **Endorsement notice**

The text of the International Standard IEC 60893-3-3:2003/A1:2011 was approved by CENELEC as a European Standard without any modification.

EUROPEAN STANDARD

**EN 60893-3-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2004

ICS 29.035.01

Supersedes EN 60893-3-3:1995

English version

**Insulating materials –  
Industrial rigid laminated sheets based on  
thermosetting resins for electrical purposes  
Part 3-3: Specifications for individual materials –  
Requirements for rigid laminated sheets based on melamine resins  
(IEC 60893-3-3:2003)**

Matériaux isolants –  
Stratifiés industriels rigides en planches  
à base de résines thermodurcissables  
à usages électriques  
Partie 3-3: Spécifications pour matériaux  
particuliers –  
Prescriptions pour stratifiés rigides  
en planches à base de résine mélamine  
(CEI 60893-3-3:2003)

Isolierstoffe –  
Tafeln aus technischen Schichtpress-  
stoffen auf der Basis warmhärtender  
Harze für elektrotechnische Zwecke  
Teil 3-3: Bestimmungen für einzelne  
Werkstoffe –  
Anforderungen für Tafeln aus  
Schichtpressstoffen auf der Basis  
von Melaminharzen  
(IEC 60893-3-3:2003)

This European Standard was approved by CENELEC on 2003-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

**I.S. EN 60893-3-3:2004**

EN 60893-3-3:2004

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**Foreword**

The text of document 15C/1523/FDIS, future edition 2 of IEC 60893-3-3, prepared by SC 15C, Specifications, of IEC TC 15, Insulating materials, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60893-3-3 on 2003-12-01.

This European Standard supersedes EN 60893-3-3:1995.

In this revision of the EN 60893 series of specifications, new material types have been included, changes have been made to the property requirements of some existing types, a new method for testing permittivity and dissipation factor has been added, and all non-specification data for each type has been moved to a new Part 4 document – IEC/TR 60893-4: Typical values.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2004-09-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2006-12-01

Annex ZA has been added by CENELEC.

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**Endorsement notice**

The text of the International Standard IEC 60893-3-3:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60893-3-1      NOTE      Harmonized as EN 60893-3-1:2004 (not modified).

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u>     | <u>Title</u>   | <u>EN/HD</u> | <u>Year</u>     |
|--------------------|-----------------|--|--------------|-----------------|
| IEC 60893-1        | - <sup>1)</sup> | Insulating materials - Industrial rigid laminated sheets based on thermosetting resins for electrical purposes<br>Part 1: Definitions, designations and general requirements | EN 60893-1   | - <sup>1)</sup> |
| IEC 60893-2        | 2003            | Part 2: Methods of test  | EN 60893-2   | - <sup>1)</sup> |

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1) To be published.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**INSULATING MATERIALS –  
INDUSTRIAL RIGID LAMINATED SHEETS  
BASED ON THERMOSETTING RESINS FOR ELECTRICAL PURPOSES –**

**Part 3-3: Specifications for individual materials –  
Requirements for rigid laminated sheets based on melamine resins**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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**This consolidated version of IEC 60893-3-3 consists of the second edition (2003) [documents 15C/1523/FDIS and 15C/1537/RVD] and its amendment 1 (2011) [documents 15/489/CDV and 15/616/RVC]. It bears the edition number 2.1.**

**The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.**

International Standard IEC 60893-3-3 has been prepared by subcommittee 15C: Specifications, of IEC technical committee 15: Insulating materials.

In this revision of the IEC 60893 series of specifications, new material types have been included, changes have been made to the property requirements of some existing types, a new method for testing permittivity and dissipation factor has been added, and all non-specification data for each type has been moved to a new Part 4 document – IEC 60893-4 – Typical values.

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

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability 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
- amended.

**IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.**

## INTRODUCTION

This part of IEC 60893 is one of a series, which deals with industrial rigid laminated sheets based on thermosetting resins for electrical purposes.

This series consists of four parts:

Part 1: Definitions, designations and general requirements (IEC 60893-1)

Part 2: Methods of test (IEC 60893-2)

Part 3: Specifications for individual materials (IEC 60893-3)

Part 4: Typical values (IEC 60893-4)

IEC 60893-3-3 contains one of the specification sheets comprising Part 3, as follows:

Sheet 3: Requirements for rigid laminated sheets based on melamine resins

## INTRODUCTION (to amendment 1)

This amendment introduces revised limits for CHARPY and IZOD impact strengths for the requirements of all types of rigid laminated sheets based on melamine resins. These revised limits are based on the results of round-robin testing.

# INSULATING MATERIALS – INDUSTRIAL RIGID LAMINATED SHEETS BASED ON THERMOSETTING RESINS FOR ELECTRICAL PURPOSES –

## Part 3-3: Specifications for individual materials – Requirements for rigid laminated sheets based on melamine resins

### 1 Scope

This part of IEC 60693 gives the requirements for industrial rigid laminated sheets for electrical purposes based on melamine resins and different reinforcements.

Applications and distinguishing properties are given in Table 1.

Materials which conform to this specification meet established levels of performance. However, the selection of a material by a user for a specific application should be based on the actual requirements necessary for adequate performance in that application and not based on this specification alone.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60893-1:—, *Insulating materials – Industrial rigid laminated sheets based on thermosetting resins for electrical purposes – Part 1: Definitions, designations and general requirements*<sup>1</sup>

IEC 60893-2:2003, *Industrial rigid laminated sheets based on thermosetting resins for electrical purposes – Part 2: Methods of test*

### 3 Designation

The sheets covered by this Specification are classified into types, which differ in reinforcement employed and in their distinguishing properties. The sheets are designated by

- the IEC standard number,
- a two-letter abbreviation denoting the resin,
- a second two-letter abbreviation, denoting the reinforcement,
- a serial number,
- nominal thickness x width x length in millimetres.

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<sup>1</sup> To be published

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