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Provning av brandegenskaper – Del 2-10: Provningsmetoder – Glödtrådsapparat och allmänna provningsmetoder

*Fire hazard testing –
Part 2-10: Glowing/hot-wire based test methods –
Glow-wire apparatus and common test procedure*

Som svensk standard gäller europastandarden EN 60695-2-10:2013. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60695-2-10:2013.

Nationellt förord

Europastandarden EN 60695-2-10:2013

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- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60695-2-10, Second edition, 2013 - Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60695-2-11, SS-EN 60695-2-12 och SS-EN 60695-2-13.

Tidigare fastställd svensk standard SS-EN 60695-2-10, utgåva 1, 2001, gäller ej fr o m 2016-05-14.

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English version

**Fire hazard testing -
Part 2-10: Glowing/hot-wire based test methods -
Glow-wire apparatus and common test procedure
(IEC 60695-2-10:2013)**

Essais relatifs aux risques du feu -
Partie 2-10: Essais au fil
incandescent/chauffant -
Appareillage et méthode commune d'essai
(CEI 60695-2-10:2013)

Prüfungen zur Beurteilung der
Brandgefahr -
Teil 2-10: Prüfverfahren mit dem
Glühdraht -
Glühdrahtprüfeinrichtung und allgemeines
Prüfverfahren
(IEC 60695-2-10:2013)

This European Standard was approved by CENELEC on 2013-05-14. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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 89/1154/FDIS, future edition 2 of IEC 60695-2-10, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-2-10:2013.

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) 2014-02-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-05-14

This document supersedes EN 60695-2-10:2001.

EN 60695-2-10:2013 includes the following significant technical changes with respect to EN 60695-2-10:2001:

- A table of contents has been added.
- The introduction has been updated to align with other TC 89 documents.
- The scope has been clarified to align with other documents in the EN 60695-2 Glow-wire series.
- Terms and definitions relevant to this document have been added.
- Clause 4 has been deleted and the remaining clauses renumbered.
- The description of the power supply has been updated with additional details (see 4.1).
- The temperature measuring system (see 4.3) and the description of the specified layer has been updated (see 4.4).
- New guidance has been introduced to assist in the verification of the temperature measuring system (see 5.2 and Annex C).
- The common test produced has been clarified (see Clause 7).
- The tolerances have been changed for the dimensions of the glow-wire (see Figure 1).
- New guidance on flaming observations has been added (see Annex B).

This standard is to be used in conjunction with EN 60695-2-11, EN 60695-2-12 and EN 60695-2-13.

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 60695-2-10:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60695-1-10	NOTE	Harmonised as EN 60695-1-10.
IEC 60695-1-11	NOTE	Harmonised as EN 60695-1-11.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 60584-1	-	Thermocouples - Part 1: Reference tables	EN 60584-1	-
IEC 60584-2	-	Thermocouples - Part 2: Tolerances	EN 60584-2	-
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	-
IEC 60695-2-12	-	Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials	EN 60695-2-12	-
IEC 60695-2-13	-	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials	EN 60695-2-13	-
IEC Guide 104	2010	The preparation of safety publications and the - use of basic safety publications and group safety publications		-
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion - in standards		-
ISO 4046-4	2002	Paper, board, pulps and related terms - Vocabulary - Part 4: Paper and board grades and converted products	-	-
ISO 13943	2008	Fire safety - Vocabulary	EN ISO 13943	2010

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INTRODUCTION

In the design of any electrotechnical product, the risk of fire and the potential hazards associated with fire need to be considered. In this respect the objective of component, circuit, and product design, as well as the choice of materials, is to reduce to acceptable levels the potential risks of fire during normal operating conditions, reasonable foreseeable abnormal use, malfunction, and/or failure. IEC 60695-1-10 was developed, together with its companion, IEC 60695-1-11, to provide guidance on how this is to be accomplished.

The primary aims of IEC 60695-1-10 and IEC 60695-1-11 are to provide guidance on how:

- a) to prevent ignition caused by an electrically energized component part, and
- b) to confine any resulting fire within the bounds of the enclosure of the electrotechnical product in the event of ignition.

Secondary aims of these documents include the minimization of any flame spread beyond the product's enclosure and the minimization of harmful effects of fire effluents such as heat, smoke, toxicity and/or corrosivity.

Fires involving electrotechnical products can also be initiated from external non-electrical sources. Considerations of this nature should be dealt with in the overall fire risk assessment.

In electrotechnical equipment, overheated metal parts can act as ignition sources. In glow-wire tests, a glowing wire is used to simulate such an ignition source.

This part of IEC 60695 gives recommendations with regard to the glow-wire test apparatus and describes a common test procedure for tests applicable to end products and materials to be used with IEC 60695-2-11 which describes a glow-wire flammability test for end products (GWEPT), IEC 60695-2-12 which describes a glow-wire flammability index test for materials (GWFI), and IEC 60695-2-13 which describes a glow-wire ignition temperature test method for materials (GWIT).

FIRE HAZARD TESTING –

Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure

1 Scope

This part of IEC 60695 specifies the glow-wire apparatus and common test procedure to simulate the effects of thermal stresses which may be produced by heat sources such as glowing elements or overloaded resistors, for short periods, in order to assess the fire hazard by a simulation technique.

The test procedure described in this standard is a common test procedure intended for the small-scale tests in which a standardized electrically heated wire is used as a source of ignition.

It is a common part of the test procedures applied to end products and to solid electrical insulating materials or other solid combustible materials.

A detailed description of each particular test procedure is given in the respective standards IEC 60695-2-11, IEC 60695-2-12 and IEC 60695-2-13.

This basic safety publication is intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

2 Normative references

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

IEC 60584-1, *Thermocouples – Part 1: Reference tables*

IEC 60584-2, *Thermocouples – Part 2: Tolerances*

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-2-12, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability index (GWFI) test method for materials*

IEC 60695-2-13, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glow-wire ignition temperature (GWIT) test method for materials*

IEC Guide 104:2010, *The preparation of safety publications and the use of basic safety publications and group safety publications*

ISO/IEC Guide 51:1999, *Safety aspects – Guidelines for their inclusion in standards*

ISO 4046-4:2002, *Paper, board, pulps and related terms – Vocabulary – Part 4: Paper and board grades and converted products*

ISO 13943:2008, *Fire safety – Vocabulary*