

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



BASIC SAFETY PUBLICATION

PUBLICATION FONDAMENTALE DE SÉCURITÉ

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

**Essais relatifs aux risques du feu –  
Partie 2-10: Essais au fil incandescent/chauffant – Appareillage et méthode  
commune d'essai**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FIRE HAZARD TESTING –

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

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International Standard IEC 60695-2-10 has been prepared by IEC technical committee 89: Fire hazard testing.

This second edition of IEC 60695-2-10 cancels and replaces the first edition of IEC 60695-2-10 published in 2000. This edition constitutes a technical revision.

It has the status of a basic safety publication in accordance with IEC Guide 104:2010 and ISO/IEC Guide 51:1999.

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

The main changes with respect to the previous edition are listed below. The rationale can be found in 89/960A/CC, 89/944A/CC, and 89/1030/CC.

- A table of contents has been added.
- The introduction has been updated to align with other TC89 documents.
- The scope has been clarified to align with other documents in the IEC 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).

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

FDIS	Report on voting
89/1154/FDIS	89/1163/RVD

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

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

A list of all parts in the IEC 60695 series, published under the general title *Fire hazard testing*, can be found on the IEC website.

The committee has decided that the contents of this publication 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.

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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).