BS EN 60695-2-11:2014



BSI Standards Publication

Fire hazard testing

Part 2-11: Glowing/hot-wire based test methods — Glow-wire flammability test method for end-products (GWEPT)

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National foreword

This British Standard is the UK implementation of EN 60695-2-11:2014. It is identical to IEC 60695-2-11:2014. It supersedes BS EN 60695-2-11:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/89, Fire hazard testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT) (IEC 60695-2-11:2014)

Essais relatifs aux risques du feu - Partie 2-11: Essais au fil incandescent/chauffant - Méthode d'essai d'inflammabilité pour produits finis (GWEPT) (CEI 60695-2-11:2014)

Prüfungen zur Beurteilung der Brandgefahr - Teil 2-11: Prüfungen mit dem Glühdraht - Prüfung mit dem Glühdraht zur Entflammbarkeit von Enderzeugnissen (GWEPT) (IEC 60695-2-11:2014)

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Foreword

The text of document 89/1197/FDIS, future edition 2 of IEC 60695-2-11, prepared by IEC/TC 89 "Fire hazard testing" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60695-2-11:2014.

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)	2015-01-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-03-13

This document supersedes EN 60695-2-11:2001.

EN 60695-2-11:2014 includes the following significant technical changes with respect to EN 60695-2-11:2001:

– The Introduction has been added to provide background and how it relates to the Scope.
– The Scope has been modified for greater clarity and reference to basic safety publications.
– Numerous terms and definitions relevant to this Standard have been added to Clause 3.
– The application of “small parts” and “insignificant mass” have been introduced and clarified.
– The different types of specimens, how to specify them, and limitations of the test method have been further clarified in Clause 4.
– Clarified in Clause 5 the distance to specified layer when unknown.
– The information from Clause 6 has been moved into the test procedure in Clause 8.
– The conditioning of the specified layer and the laboratory ambient test conditions were clarified in Clause 7.
– Measurement of the maximum flame height was removed from Clause 9.
– The reference to this test as “GWEPT” was introduced along with an applicable title change.
– Annex A has been revised to reflect current practice by prominent product committees.

This standard is to be used in conjunction with EN 60695-2-10.

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 60695-2-11:2014 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 (not modified).
IEC 60695-1-11	NOTE	Harmonised as EN 60695-1-11 (not modified).
IEC 60695-2-12	NOTE	Harmonised as EN 60695-2-12 (not modified).
IEC 60695-2-13	NOTE	Harmonised as EN 60695-2-13 (not modified).
IEC 60335-1	NOTE	Harmonised as EN 60335-1 (modified).
IEC 60695-4:2012	NOTE	Harmonised as EN 60695-4:2012 (not modified).
ISO/IEC 13943:2008	NOTE	Harmonised as EN ISO 13943:2010.

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.

Publication	Year	Title	EN/HD	Year
ISO/IEC Guide 51		Safety aspects - Guidelines for their inclusion in standards	-	-
IEC Guide 104		The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
IEC 60695-2-10		Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	

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INTRODUCTION

The purpose of this Introduction is to provide background regarding the basic guidance that prompted the preparation of this International Standard and how it relates to the Scope.

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 within the design of component, circuit, and product design, as well as the choice of the 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 Technical Committee 89 has developed IEC 60695-1-10, 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 hazard 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.

IEC 60695-2-10 describes a glow-wire test apparatus and common test procedure, IEC 60695-2-12 describes a glow-wire flammability index (GWFI) test method for materials, and IEC 60695-2-13 describes a glow-wire ignition temperature (GWIT) test method for materials.

This standard is used to assess the reaction of end products to heat caused by contact with an electrically heated wire under controlled laboratory conditions. This may be useful for the evaluation of end products that may be exposed to excess thermal stress such as a fault current flowing through a wire, overloading of components, and/or poor electrical connections. It should not be used to solely describe or appraise the fire hazard or fire risk of products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire hazard assessment which takes into account all of the factors which are pertinent to a particular end use.

This international standard may involve hazardous materials, operations, and equipment. It does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this international standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

FIRE HAZARD TESTING –

Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)

1 Scope

This part of IEC 60695 specifies a test method on an end product. It is intended to simulate the effects of thermal stresses produced by an electrically heated source to represent a fire hazard.

This test method is used to check that, under defined test conditions, an end product exposed to an electrically heated source has either a limited ability to ignite or, if it ignites, a limited ability to propagate flame. However, the fire hazard analysis, the flammability aspects and the flame spreading to other products are not covered by the present standard.

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 60695-2-10, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

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

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

3 Terms and definitions

For the purpose of this document the following terms and definitions apply.

3.1
burn, intransitive verb
undergo combustion

[SOURCE: ISO/IEC 13943:2008, definition 4.28]