Method of test for resistance to fire of unprotected small cables for use in emergency circuits

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 50200:2015 sisaldab Euroopa standardi EN 50200:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 50200:2015 consists of the English text of the European standard EN 50200:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.12.2015.	Date of Availability of the European standard is 04.12.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.220.40, 29.035.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50200

December 2015

ICS 13.220.40; 29.035.20

Supersedes EN 50200:2006

English Version

Method of test for resistance to fire of unprotected small cables for use in emergency circuits

Méthode d'essai de la résistance au feu des câbles de petites dimensions sans protection pour utilisation dans les circuits de secours

Prüfung des Isolationserhaltes im Brandfall von Kabeln mit kleinen Durchmessern für die Verwendung in Notstromkreisen bei ungeschützter Verlegung

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

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Ref. No. EN 50200:2015 E

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European foreword

This document (EN 50200:2015) has been prepared by Working Group 10 of CLC/TC 20 “Electric cables”.

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)	2016-09-14
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-09-14

This document supersedes EN 50200:2006.

The main changes compared to EN 50200:2006 are as follows (minor changes are not listed):

– detailed procedures for metallic data cables and for optical fibre cables have been removed as they are now given in the relevant standards of CLC/TC 46X and CLC/TC 86A. These standards refer to EN 50200 for the basic test method;

– recasting and extension of the existing Annex D into two new Annexes, Annex B “Field of direct application and extended application of test results (Electric power and control cables with rated voltage up to and including 600 V/1 000 V) and Annex D “Information regarding classification”.

The cable is tested in a representative installed condition, under conditions of minimum bending radius, and the test is based upon a constant temperature attack at a minimum test temperature of 830 °C. This is typical of the gas temperature reached after 30 min exposure to the time/temperature conditions prescribed in EN 1363-1.

The test method in this document includes exposure to fire with mechanical shock under specified conditions and satisfies the requirements of Mandate M/117 for the PH classification. This European Standard also includes (Annex E) a means of applying a water spray to the cable during the test, which is not required under Mandate M/117.

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 document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

1 Scope

This European Standard specifies the test method for cables designed to have intrinsic resistance to fire and intended for use as emergency circuits for alarm, lighting and communication purposes.

This European Standard is applicable to cables for emergency circuits of rated voltage not exceeding 600 V/1 000 V, including those of rated voltage below 80 V and optical fibre cables.

This European Standard includes details for the specific point of failure, continuity checking arrangement, test sample, test procedure and test report relevant to electric power and control cables with rated voltage up to and including 600 V/1 000 V. Details for the specific point of failure, continuity checking arrangement, test sample, test procedure and test report relevant to copper data and telecom cables and optical cables are given in the relevant standards of CLC/TC 46X and CLC/TC 86A.

The test method is limited to cables with an overall diameter not exceeding 20 mm.

The test method is based on the direct impingement of flame from a propane burner giving a constant temperature attack of a notional 842 °C. It is intended to be used for cables for emergency circuits suitable for alarm, emergency lighting and communication.

NOTE When the test method is used in support of EN 13501–3, it only applies to cables of less than 20 mm diameter, and, for metallic conductor cables, to those with conductor sizes up to and including 2,5 mm^2. For optical cables, only the less than 20 mm diameter limit applies.

This European Standard includes (Annex B) the field of direct application and rules for extended application of test results (EXAP). Details regarding classification using data from this test are given in EN 13501-3 [1]. Information regarding classification is given in Annex D.

This European Standard also includes informative guidance (Annex E) on a means of applying a water spray to the cable during the test. Such a requirement may be a feature of particular product standards.

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.

EN 13501-3, *Fire classification of construction products and building elements - Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers*

EN 60584-1, *Thermocouples - Part 1: EMF specifications and tolerances (IEC 60584-1)*

EN 60695-4, *Fire hazard testing - Part 4: Terminology concerning fire tests for electrotechnical products (IEC 60695-4)*

EN ISO 13943, *Fire safety - Vocabulary (ISO 13943)*

1) At the time of finalizing EN 50200, an amendment to EN 13501-3:2005+A1:2009 concerning cables is under consideration in CEN/TC 127.

IEC 60269-3:2010 and IEC 60269–3:2010/A1:2013, *Low-voltage fuses – Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications) - Examples of standardized systems of fuses A to F*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 13943 and EN 60695-4 and the following apply.

3.1
draught-free environment
space in which the results of tests are not significantly affected by the local air speed

4 Test environment

The test shall be carried out in a draught-free environment within a suitable chamber, of minimum volume 20 m^3, with facilities for disposing of any noxious gases resulting from the burning. Sufficient ventilation shall be available to sustain the flame for the duration of the test. Air inlets and the exhaust chimney should be located in such a way that the burner flame remains stable during the verification procedure and test. If necessary, the burner shall be shielded from any draughts by the use of draught shields. Windows may be installed in the walls of the chamber in order to observe the behaviour of the cable during the test. Fume exhaust should be achieved by means of natural draught through a chimney located at least 1 m from the burner. A damper may be used for adjustment of ventilation conditions.

The same ventilation and shielding conditions shall be used in the chamber during both the verification and cable test procedures.

The chamber and test apparatus shall be at (25 ± 15) °C at the start of each test.

NOTE The test given in this European Standard may involve the use of dangerous voltages and temperatures. Suitable precautions should be taken against shock, burning, fire and explosion risks that may be involved and against any noxious fumes that may be produced.

5 Test apparatus

5.1 Test equipment

The test equipment shall consist of the following:

a) a test wall, on to which the cable is mounted, comprising a board manufactured from heat resisting non-combustible material suitable for the temperatures involved fastened to steel supports and mounted on a rigid support as described in 5.2;

b) a continuity checking arrangement as described in 5.3;

c) a source of heat comprising a horizontally mounted ribbon burner as described in 5.4;

d) a shock producing device as described in 5.5;