

SLOVENSKI STANDARD
SIST EN 60811-509:2012/A1:2018
01-januar-2018

**Električni in optični kabli - Preskusne metode za nekovinske materiale - 509. del:
Mehanski preskusi - Preskus odpornosti izolacije in plaščev proti pokanju
(preskus s toplotnim šokom) - Dopolnilo A1 (IEC 60811-509:2012/A1:2017)**

Electric and optical fibre cables - Test methods for non-metallic materials - Part 509:
Mechanical tests - Test for resistance of insulations and sheaths to cracking (heat shock
test) (IEC 60811-509:2012/A1:2017)

**Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene
Werkstoffe - Teil 509: Mechanische Prüfungen - Prüfung der Rissbeständigkeit von
Isolierhüllen und Mänteln (Wärmeschock-Prüfung) (IEC 60811-509:2012/A1:2017)**

[SIST EN 60811-509:2012/A1:2018](https://standards.iteh.ai/catalog/standards/sist/3c39a790-2b02-4b64-9012-509:2012/A1:2018)

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**Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-
métalliques - Partie 509: Essais mécaniques - Essai de résistance à la fissuration des
enveloppes isolantes et des gaines (essai de choc thermique) (IEC 60811-
509:2012/A1:2017)**

Ta slovenski standard je istoveten z: EN 60811-509:2012/A1:2017

ICS:

| | | |
|-----------|----------------------------------|---------------------------------|
| 29.035.01 | Izolacijski materiali na splošno | Insulating materials in general |
| 29.060.20 | Kabli | Cables |

SIST EN 60811-509:2012/A1:2018 **en**

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EUROPEAN STANDARD

EN 60811-509:2012/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2017

ICS 29.035.01; 29.060.20

English Version

**Electric and optical fibre cables - Test methods for non-metallic materials - Part 509: Mechanical tests - Test for resistance of insulations and sheaths to cracking (heat shock test)
(IEC 60811-509:2012/A1:2017)**

Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-métalliques - Partie 509: Essais mécaniques - Essai de résistance à la fissuration des enveloppes isolantes et des gaines (essai de choc thermique)
(IEC 60811-509:2012/A1:2017)

Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene Werkstoffe - Teil 509: Mechanische Prüfungen - Prüfung der Rissbeständigkeit von Isolierhüllen und Mänteln (Wärmeschock-Prüfung)
(IEC 60811-509:2012/A1:2017)

This amendment A1 modifies the European Standard EN 60811-509:2012; it was approved by CENELEC on 2017-08-25. 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.

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 amendment 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 60811-509:2012/A1:2017**European foreword**

The text of document 20/1737/FDIS, future IEC 60811-509:2012/A1, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60811-509:2012/A1:2017.

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) 2018-05-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-08-25

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Endorsement notice

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The text of the International Standard IEC 60811-509:2012/A1:2017 was approved by CENELEC as a European Standard without any modification.

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IEC 60811-509

Edition 1.0 2017-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

**Electric and optical fibre cables – Test methods for non-metallic materials –
Part 509: Mechanical tests – Test for resistance of insulations and sheaths to
cracking (heat shock test)**

**Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux
non-métalliques –
Partie 509: Essais mécaniques – Essai de résistance à la fissuration des
enveloppes isolantes et des gaines (essai de choc thermique)**

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ICS 29.035.01; 29.060.20

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FOREWORD

This amendment has been prepared by IEC technical committee 20: Electric cables.

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

| | |
|--------------|------------------|
| FDIS | Report on voting |
| 20/1737/FDIS | 20/1744/RVD |

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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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4.1 General

Add, at the end of the third paragraph, prior to the NOTE, the following new text:

The heat shock test was specifically developed for PVC compounds. The use of this test for other types of compounds needs careful consideration.

4.3.2 Procedure

Replace, in the list item a), the existing first two sentences by the following new text:

For test pieces prepared in accordance with 4.3.1.a) and flat cables with major axis not exceeding 12,5 mm, the diameter of the mandrel and the number of turns shall be as given below in Table 1. The mandrel diameter shall be based on the minor dimension of the core which is wound on with its minor axis perpendicular to the mandrel.

4.3.3 Expression of results

Replace the last paragraph by the following new text:

A crack is a sharp fissure which has propagated through the whole insulation and/or sample thickness.

A more rounded opening due to polymer melt deformation shall not be interpreted as a crack.

4.4 Sample and test piece preparation for sheaths

Replace the entire existing subclause by the following new text:

4.4.1 General

Each sheath to be tested shall be represented by two samples of cable of suitable length taken from two places, separated by at least 1 m. Any external coverings shall be removed.

- a) For cables with an overall diameter not exceeding 12,5 mm, each test piece shall consist of a piece of cable, except for polyethylene-insulated cables, where a strip of the sheath shall be prepared according to item b), c) or d).
- b) For cables with an overall diameter exceeding 12,5 mm and with a sheath wall thickness not exceeding 5,0 mm, and for sheaths of polyethylene-insulated cables, each test piece shall consist of a strip taken from the sheath, whose width shall be at least 1,5 times its thickness but not less than 4 mm; the strip shall be cut in the direction of the axis of the cable.
- c) For cables with an overall diameter exceeding 12,5 mm and a sheath wall thickness exceeding 5,0 mm, each test piece shall consist of a strip cut in accordance with item b) and then ground or cut (avoiding heating) on the outer surface, to a thickness between 4,0 mm and 5,0 mm. This thickness shall be measured on the thicker part of the strip, whose width shall be at least 1,5 times the thickness.
- d) For flat cables, if the major axis (width) of the cable does not exceed 12,5 mm, each test piece shall consist of a piece of cable, except for polyethylene-insulated cables, where a strip of the sheath shall be prepared according to item b). If the major axis (width) of the cable exceeds 12,5 mm, each test piece shall consist of a strip taken from the sheath as specified in item b).

4.4.2 Procedure

Each test piece shall be tautly wound and fixed, at ambient temperature, on a mandrel to form a close helix, as given below.

- a) For test pieces prepared in accordance with 4.4.1 a), and flat cables of width not exceeding 12,5 mm in accordance with 4.4.1 d), the diameter of the mandrel and the number of turns shall be as given in Table 1. The mandrel diameter shall be based on the minor dimensions of the cable which is wound on with its minor axis perpendicular to the mandrel.
- b) For test pieces prepared in accordance with 4.4.1 b) and c), and flat cables wider than 12,5 mm in accordance with 4.4.1 d), the diameter of the mandrel and the number of turns shall be as given in Table 2. In this case, the inner surface of the test piece shall be in contact with the mandrel.

The diameter or thickness of each test piece shall be measured by means of callipers or any other suitable measuring instrument.

4.4.3 Measurements

In accordance with 4.3.2 of this standard.

4.4.4 Expression of results

In accordance with 4.3.3 of this standard.

A crack is a sharp fissure which has propagated through the whole sheath and/or sample thickness.

A more rounded opening due to polymer melt deformation shall not be interpreted as a crack.