

**SLOVENSKI STANDARD**  
**SIST EN 60811-410:2012/A1:2018**  
**01-januar-2018**

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**Električni in optični kabli - Preskusne metode za nekovinske materiale - 410. del:  
Drugi preskusi - Preskusna metoda za z bakrom katalizirano oksidativno  
poslabšanje poliolefinsko izoliranih vodnikov - Dopolnilo A1 (IEC 60811-  
410:2012/A1:2017)**

Electric and optical fibre cables - Test methods for non-metallic materials - Part 410:  
Miscellaneous tests - Test method for copper-catalyzed oxidative degradation of  
polyolefin insulated conductors (IEC 60811-410:2012/A1:2017)

**iTeh STANDARD PREVIEW**

(standards.iteh.ai)  
Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene  
Werkstoffe - Teil 410: Sonstige Prüfungen - Prüfverfahren für die Sauerstoffalterung  
unter Kupfereinfluss für polyolefinisolierte Leiter (IEC 60811-410:2012/A1:2017)

<https://standards.iteh.ai/catalog/standards/sist/6b2bc294-02d5-458f-8ac5-8a9e37ef3fb/sist-en-60811-410-2012-a1-2018>

Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-  
métalliques - Partie 410: Essais divers - Méthode d'essai pour la mesure de la  
dégradation par oxydation catalytique par le cuivre des conducteurs isolés aux  
polyoléfines (IEC 60811-410:2012/A1:2017)

**Ta slovenski standard je istoveten z: EN 60811-410:2012/A1:2017**

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**ICS:**

29.035.20	Plastični in gumeni izolacijski materiali	Plastics and rubber insulating materials
29.060.20	Kabli	Cables

**SIST EN 60811-410:2012/A1:2018**      **en**

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SIST EN 60811-410:2012/A1:2018

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EUROPEAN STANDARD

**EN 60811-410:2012/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 410: Miscellaneous tests - Test method for copper-catalyzed oxidative degradation of polyolefin insulated conductors  
(IEC 60811-410:2012/A1:2017)**

Câbles électriques et à fibres optiques - Méthodes d'essai pour les matériaux non-métalliques - Partie 410: Essais divers - Méthode d'essai pour la mesure de la dégradation par oxydation catalytique par le cuivre des conducteurs isolés aux polyoléfinés  
(IEC 60811-410:2012/A1:2017)

Kabel, isolierte Leitungen und Glasfaserkabel - Prüfverfahren für nichtmetallene Werkstoffe - Teil 410: Sonstige Prüfungen - Prüfverfahren für die Sauerstoffalterung unter Kupfereinfluss für polyolefinisolierte Leiter  
(IEC 60811-410:2012/A1:2017)

**iTeh STANDARD PREVIEW**  
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This amendment A1 modifies the European Standard EN 60811-410:2012; 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.

<https://standards.iteh.ai/catalog/standards/sist/6b2bc294-02d5-458f-8ac5-8a9e37ef3fb/sist-en-60811-410-2012-a1-2018>

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 60811-410:2012/A1:2017****European foreword**

The text of document 20/1734/FDIS, future IEC 60811-410:2012/A1, prepared by IEC/TC 20 "Electric cables" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60811-410:2012/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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

**Endorsement notice**

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The text of the International Standard IEC 60811-410:2012/A1:2017 was approved by CENELEC as a European Standard without any modification.

[SIST EN 60811-410:2012/A1:2018  
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IEC 60811-410

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 410: Miscellaneous tests – Test method for copper-catalyzed oxidative  
degradation of polyolefin insulated conductors**

**Câbles électriques et à fibres optiques – Méthodes d'essai pour les matériaux  
non-métalliques –  
Partie 410: Essais divers – Méthode d'essai pour la mesure de la dégradation  
par oxydation catalytique par le cuivre des conducteurs isolés aux polyoléfines**

INTERNATIONAL  
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COMMISSION

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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
20/1734/FDIS	20/1739/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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[SIST EN 60811-410:2012/A1:2018](https://standards.iteh.ai/catalog/standards/sist/6b2bc294-02d5-458f-8ac5-8a9e37ef3fb/sist-en-60811-410-2012-a1-2018)

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### 4.1 General

*Replace the first paragraph by the following new text:*

The need for a manufacturer to monitor cable production to ensure that it has adequate resistance to oxidation is well established. Once suitable materials have been selected, the oxidation induction time (OIT) test has been found suitable for monitoring both raw materials and cables for compliance with the oxidative degradation requirement. The OIT test is not suitable for the determination of material ageing properties. For this purpose, long-term thermal ageing tests are preferred.

### 4.2 Apparatus

*Replace list item c) by the following new list item c):*

- c) A gas-selector switch and regulators for high-purity nitrogen and oxygen; N<sub>2</sub>, O<sub>2</sub> with purity:
- N<sub>2</sub> 5.0 = 99,999 % purity;
  - O<sub>2</sub> 4.5 = 99,995 % purity.

*Replace list item d) by the following new list item d):*

- d) An analytical balance capable of weighing 3 mg to 5 mg, and readable and repeatable to ±1 µg. The mass rounding is in 10 µg.

#### 4.4 Test procedure

*Replace the NOTE by the following new NOTE:*

NOTE If the piece holder is closed, the oxidation cannot be made.

#### Figure 1 – Evaluation of OIT from recorded-time-based thermogram

*Replace key element 1 by the following new element 1:*

1                     $\Delta$  Power or  $\Delta T$  or  $\Delta$ enthalpy

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