Fibre optic interconnecting devices and passive components - Basic test and measurement procedures th (SIO).

IS A PREMIEW SCHOOL SHOOL STATE OF THE STATE O Part 2-5: Tests - Torsion



#### FESTI STANDARDI FESSÕNA

#### **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 61300-2-5:2011 sisaldab Euroopa standardi EN 61300-2-5:2011 ingliskeelset teksti.

This Estonian standard EVS-EN 61300-2-5:2011 consists of the English text of the European standard EN 61300-2-5:2011.

Standard on kinnitatud Eesti Standardikeskuse 31.05.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.05.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 13.05.2011.

Date of Availability of the European standard text 13.05.2011.

Standard on kättesaadav Eesti standardiorganisatsioonist.

The standard is available from Estonian standardisation organisation.

ICS 33.180.20

#### Standardite reprodutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega: Aru 10 Tallinn 10317 Eesti; <a href="www.evs.ee">www.evs.ee</a>; Telefon: 605 5050; E-post: <a href="mailto:info@evs.ee">info@evs.ee</a></a>

#### Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation: Aru str 10 Tallinn 10317 Estonia; <a href="www.evs.ee">www.evs.ee</a>; Phone: 605 5050; E-mail: <a href="mailto:info@evs.ee">info@evs.ee</a>

#### **EUROPEAN STANDARD**

#### EN 61300-2-5

## NORME EUROPÉENNE EUROPÄISCHE NORM

May 2011

ICS 33.180.20

Supersedes EN 61300-2-5:2002

#### English version

# Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-5: Tests Torsion

(IEC 61300-2-5:2009)

Dispositifs d'interconnexion et composants passifs à fibres optiques -Procédures fondamentales d'essais et de mesures -Partie 2-5: Essais -Torsion (CEI 61300-2-5:2009)

Lichtwellenleiter -Verbindungselemente und passive Bauteile -Grundlegende Prüf- und Messverfahren -Teil 2-5: Prüfungen -Torsion (IEC 61300-2-5:2009)

This European Standard was approved by CENELEC on 2011-03-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 Central Secretariat or to any CENELEC member.

This European Standard 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

### **CENELEC**

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

#### **Foreword**

The text of document 86B/2774/FDIS, future edition 3 of IEC 61300-2-5, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61300-2-5 on 2011-03-18.

This European Standard supersedes EN 61300-2-5:2002.

Specific technical changes from EN 61300-2-5:2002 are as follows:

- the title was changed;
- the procedure was reconsidered;
- the figure of closure test set-up was added;
- the severity of the test was reconsidered according to the component.

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

The following dates were fixed:

 latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement

(dop) 2011-12-18

 latest date by which the national standards conflicting with the EN have to be withdrawn

(dow) 2012-03-18

Annex ZA has been added by CENELEC.

#### **Endorsement notice**

The text of the International Standard IEC 61300-2-5:2009 was approved by CENELEC as a European Standard without any modification.

## Annex ZA (normative)

## Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. 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.

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | EN/HD        | <u>Year</u> |
|--------------------|-------------|--|--------------|-------------|
| IEC 61300-1        | - ?         | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance  | EN 61300-1   | -           |
| IEC 61300-3-1      | -           | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-1: Examinations and measurements - Visual examination  | EN 61300-3-1 | -           |
| IEC 61300-3-3      | -           | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-3: Examinations and measurements - Active monitoring of changes in attenuation and return loss | EN 61300-3-3 | -           |
| IEC 61300-3-4      | -           | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-4: Examinations and measurements - Attenuation   | EN 61300-3-4 | -           |
| IEC 61300-3-6      | -           | Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-6: Examinations and measurements - Return loss   | EN 61300-3-6 | -           |
|                    |             |  | 9            |             |
|                    |             |  |              | O'          |

#### CONTENTS

| FOI  | REWO                           | )RD                                 | 3 |  |
|------|--------------------------------|-------------------------------------|---|--|
| 1    | Scop                           | e                                   | 5 |  |
| 2    | Norm                           | ative references                    | 5 |  |
| 3    | General description            |                                     |   |  |
| 4    | Apparatus                      |                                     |   |  |
|      | 4.1                            | General                             |   |  |
|      | 4.2                            | Mounting fixture                    |   |  |
|      | 4.3                            | Cable clamp                         |   |  |
|      | 4.4                            | Weights                             | 6 |  |
|      | 4.5                            | Optical source and detector         | 7 |  |
| 5    | Proce                          | edure                               | 7 |  |
|      | 5.1                            | Preparation of specimens            | 7 |  |
|      | 5.2                            | Pre-conditioning                    | 7 |  |
|      | 5.3                            | Mount the device under test         | 7 |  |
|      | 5.4                            | Measure the attenuation             | 7 |  |
|      | 5.5                            | Apply cable load                    |   |  |
|      | 5.6                            | Measure the attenuation             |   |  |
|      | 5.7                            | Twist the cable                     |   |  |
|      | 5.8                            | Test pressure                       | 7 |  |
|      | 5.9                            | Monitoring attenuation              |   |  |
|      |                                | Final measurements and examinations |   |  |
| 6    | Seve                           | rity                                | 8 |  |
| 7    | 7 Details to be specified      |                                     |   |  |
|      |                                |                                     |   |  |
| Figi | ure 1 -                        | - Component or device test set-up   | 6 |  |
| Figi | Figure 2 – Closure test set-up |                                     |   |  |
| ,    |                                |                                     |   |  |
| Tah  | le 1 –                         | Severity levels                     | 8 |  |

## FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 2-5: Tests - Torsion

#### 1 Scope

The purpose of this part of IEC 61300 is to determine the ability of the cable attachment element of the device under test to withstand torsional loads, while under tension, as might be experienced during installation and normal service. The scope of the test also includes those elements designed for ribbon cables.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61300-1, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General guidance

IEC 61300-3-1, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination

IEC 61300-3-3, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss

IEC 61300-3-4, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation

IEC 61300-3-6, Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss

#### 3 General description

The cable-to-device interface, while under a specified tension, is subjected to a torsional load or twisting action to determine the effects of this action on the physical and optical properties of the device.

#### 4 Apparatus

#### 4.1 General

The test apparatus shall be capable of applying simultaneously both tension and a torsional load or twisting action to the cable-to-device interface. Figures 1 and 2 show the basic parts of a test apparatus for component and closure test set-ups, respectively.