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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-37: Tests – Cable bending for fibre optic closures

Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures – Partie 2-37: Essais – Courbure du câble pour les boîtiers pour fibres optiques

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

Part 2-37: Tests – Cable bending for fibre optic closures

FOREWORD

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International Standard IEC 61300-2-37 has been prepared by sub-committee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) substantial updating of Subclauses 4.1, 6.5, 6.7 and Figure 1;
b) addition of severities which are determined by the number and direction of cable bends, test temperature and overpressure for each environmental category according to IEC 61753-1.

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

FDIS	Report on voting
86B/3975/FDIS	86B/3981/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 61300 series, published under the general title, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures* can be found on the IEC website.

The committee has decided that the contents of this 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

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- withdrawn,
- replaced by a revised edition, or
- amended.

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

Part 2-37: Tests – Cable bending for fibre optic closures

1 Scope

This part of IEC 61300 describes a test for the effectiveness of the sealing and clamping hardware of a fibre optic closure when the cable entering or exiting the fibre optic closure is subjected to bending.

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

IEC 61300-2-38, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-38: Tests – Sealing for pressurized fibre optic closures*

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 61300-3-28, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-28: Examinations and measurements – Transient loss*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
closure
enclosure intended to provide protection to splices and joints against water and dust ingress

Note 1 to entry: Protection is provided by an overpressure/under-pressure sealing of at least 20 kPa or complete inner filling or free-breathing method.

3.2
climatic chamber
chamber needed for conditioning the device under test

3.3
holding fixture
fixture for mounting the DUT

3.4
bending device
device for applying a controlled bending moment to the cable

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4 General description

4.1 Device under test (DUT)

The DUT is defined as an assembled closure with cable comprising all necessary parts for the required function. Separate DUTs for sealing performance and optical evaluation may be used.

The sealing performance DUT shall be provided with an air pressure test access valve. The length of the cables extending from the DUT shall be at least 1 m. The open ends of the cables shall be sealed. Each applicable cable type with minimum and maximum cable dimensions shall be represented in the test program. Multiple DUTs may be required to accommodate these cables.

The optical evaluation DUT shall be constructed in such a way that it represents all allowed functions of the product. This shall be realised by building optical circuits for each fibre separation level. Each applicable cable type with minimum and maximum cable dimensions shall be represented in the test program.

4.2 Test procedure

The DUT shall be securely fixed and placed in a conditioning chamber. The cable shall be subjected to a specified number of bending cycles. A bending cycle shall consist of a bend in one direction followed by an equal bend in the opposite direction and a return to the original position. A force adequate to produce the specified bending shall be applied smoothly and in a controlled manner to the cable at the specified distance from the closure outlet. Examinations and measurements for damage of the cable, the closure, and the cable-to-closure seal as well as hardware failure inside closure shall be made after the test.

5 Apparatus

An example of the test apparatus is given in Figure 1.

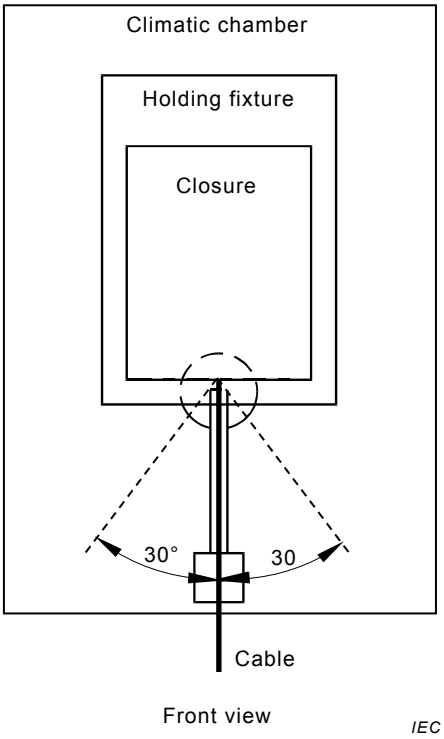

Figure 1 – Test apparatus

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