IEC 61300-2-10

Edition 2.0 2012-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 2-10: Tests – Crush resistance

Dispositifs d'interconnexion et composants passifs à fibres optiques – Méthodes fondamentales d'essais et de mesures –
Partie 2-10: Essais – Résistance à la compression

IEC 61300-2-10:2012

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

Part 2-10: Tests – Crush resistance

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International Standard IEC 61300-2-10 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 1995. It constitutes a technical revision.

The changes with respect to the previous edition are to reconsider the entire text.

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

FDIS	Report on voting
86B/3439/FDIS	86B/3484/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 parts of 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 web site 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- withdrawn,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.

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

Part 2-10: Tests – Crush resistance

1 Scope

This part of IEC 61300 evaluates the effect of loads which might occur when fibre optic devices are exposed to critical situations such as being stepped on or being run over by vehicle tyres.

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 measurement 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 61300-3-4, *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 device under test (DUT) is exposed to a compressive load which is applied by a pad.

4 Apparatus

4.1 General

The apparatus consists of the following elements (Figure 1).

4.2 Plate

A 10 mm thick steel plate large enough for the whole DUT or as specified in the relevant specification. The plate is place on a non yielding surface. The plate has rounded edges.

4.3 Pad

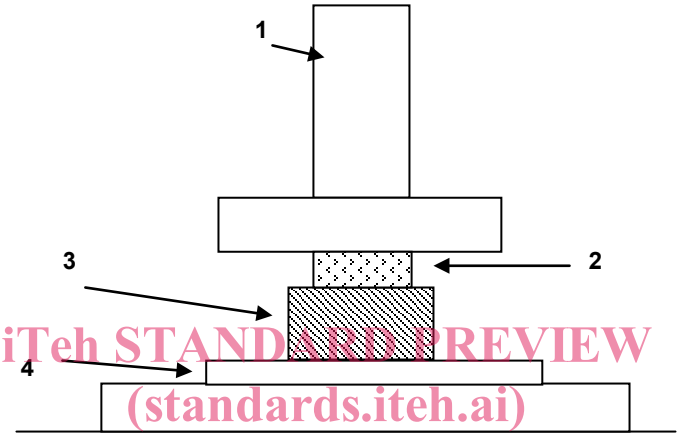
A 10 mm thick steel pad, size as Table 1, or as specified in the relevant specification, bonded to a non-yielding plate. The pad has rounded edges.

4.4 Force generator

The force generator may be any device or apparatus capable of smoothly applying the specified load at the specified rate.

4.5 Gauge

A suitable instrument for measuring the load applied to the DUT.



Key

1 force generator and gauge
2 pad
3 device under test
4 plate

Figure 1 – Apparatus

5 Procedure

5.1 DUT preparation

Prepare the DUT in accordance with the relevant specification. Unless otherwise specified, the DUT shall be subjected to the crush resistance test in a non-operational mode.

Clean the optical and mechanical parts of the DUT according to the manufacturer's instructions.

5.2 Pre-conditioning

Unless otherwise specified, pre-condition each prepared closure DUT for 4 h and each prepared connector DUT for 2 h at the standard test conditions specified in IEC 61300-1.

5.3 Initial measurements

The DUT shall be visually inspected, optically measured and mechanically checked as required by the relevant specification.

5.4 Device mounting

Position the DUT centrally on the test surface contained in the shallow box.

5.5 Conditioning

a) Place the pad over the DUT.

b) Smoothly apply the specified load to the pad.

c) Maintain the load for the specified duration.

5.6 Final examinations and measurements

Upon completion of the test, the DUT shall be examined and all necessary observations recorded as specified in the relevant specification. Careful attention shall be given to the loss of optical continuity (where tested, use IEC 61300-3-4 and IEC 61300-3-6), broken parts (IEC 61300-3-1), and damage to seals (IEC 61300-2-38).

6 Severity

The severity consists of the combination of the load, load area and the duration. The severity shall be specified in the relevant specification or taken from the table below.

Table 1 – Severities

Severity	Load N	Pad area	Duration s
Closures	1 000 ± 50	25 cm^2	600
Connectors for industrial environment	750 ± 50	25 cm^2	60

7 Details to be specified

The following details, as applicable, shall be specified in the relevant specification:

– Representative ground or floor surface
– Load
– Duration of load
– DUT orientation
– DUT optically functioning or non-functioning
– DUT mated or unmated
– Pre-conditioning procedure
– Number of load applications
– Post-conditioning procedure
– Initial examinations and measurements and performance requirements
– Examinations and measurements during test and performance requirements

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