BS EN 61300-2-6:2011

BSI Standards Publication

Fibre optic interconnecting devices and passive components — Basic test and measurement procedures

Part 2-6: Tests — Tensile strength of coupling mechanism

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National foreword

This British Standard is the UK implementation of EN 61300-2-6:2011. It is identical to IEC 61300-2-6:2010. It supersedes BS EN 61300-2-6:1997 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices and passive components.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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English version

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-6: Tests - Tensile strength of coupling mechanism

(IEC 61300-2-6:2010)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures - Partie 2-6: Essais - Résistance à la traction du mécanisme de couplage
(CEI 61300-2-6:2010)

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Messverfahren - Teil 2-6: Prüfungen - Zugfestigkeit der Verriegelung
(IEC 61300-2-6:2010)

CENELEC

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

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Foreword

The text of document 86B/3092/FDIS, future edition 2 of IEC 61300-2-6, 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 61300-2-6 on 2011-01-13.

This European Standard supersedes EN 61300-2-6:1997.

This EN 61300-2-6:2011 includes the following significant technical changes with respect to EN 61300-2-6:1997:

a) Rewriting of the entire composition according to the latest IEC Directives;

b) Relaxing pre-conditioning hours;

c) Adding the recommended severity value table for connectors;

d) Reconsidering the details to be specified section.

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)	2011-10-13
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-01-13

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61300-2-6:2010 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.

Publication	Year	Title	EN/HD	Year
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 61753-1	-	Fibre optic interconnecting devices and passive components performance standard - Part 1: General and guidance for performance standards	EN 61753-1	-

CONTENTS

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

Part 2-6: Tests – Tensile strength of coupling mechanism

1 Scope

This part of IEC 61300 describes a test to ensure that the coupling mechanism of a connector set or connector and device combination will withstand the axial loads likely to be applied during normal service.

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 and 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 61753-1*, Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards*

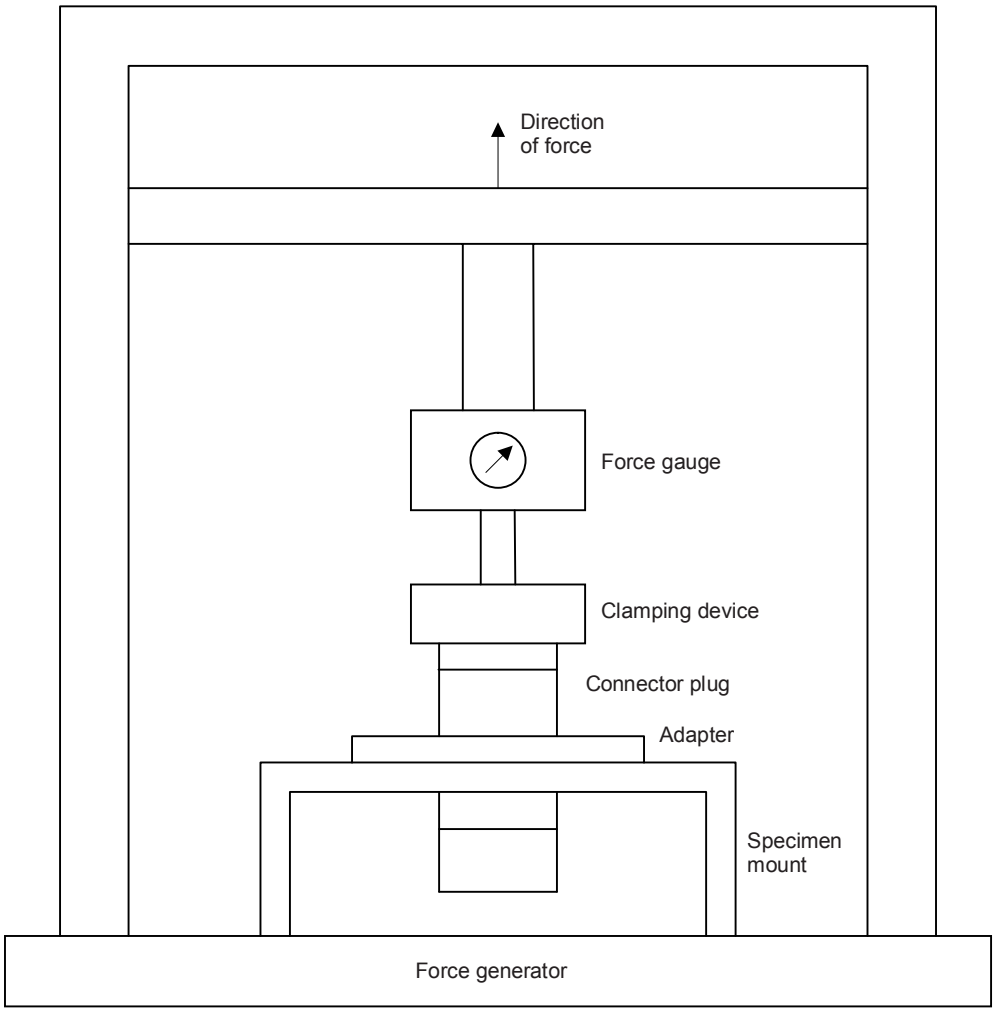
3 General

A tensile load is smoothly applied to a mated connector set or connector and device combination in a direction that will separate the components. The load is normally applied between the connector plug and the adapter or between the connector plug and the device being tested.

4 Apparatus

4.1 General

The test apparatus shall be capable of applying an axial load between a connector plug or coupling mechanism and an adapter or device. An example of a test apparatus is shown in Figure 1. Some or all of the following apparatus components will be required.



IEC 2815/10

Figure 1 – Example of test apparatus

4.2 Force generator

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

4.3 Force gauge

A force gauge of specified accuracy shall be used to measure the axial force applied to the device under test (DUT).

4.4 Clamping device

A suitable clamping device shall be used to couple the force generator to the connector plug or coupling mechanism. Care shall be taken in the design and use of the clamping device to ensure that it does not apply compressive forces which might influence the performance of the connector plug or coupling mechanism.

4.5 Specimen mount

Mount the specimen according to normal mounting procedures.

4.6 Torque wrench

A torque wrench may be required to assemble screw type connectors in accordance with the manufacturer's instructions.

5 Procedure

5.1 Prepare specimens

Mate the specimens according to the manufacturer's instructions. For screw type couplings, use a torque wrench to ensure that the couplings are tightened to the proper value.

5.2 Pre-conditioning

Unless otherwise specified, pre-condition each prepared specimen for 2 h at the standard test conditions specified in IEC 61300-1.

5.3 Initial examinations and measurements

Complete initial examinations and measurements on the specimen shall be made as required by the relevant specification. Visual examination shall be done according to IEC 61300-3-1.

5.4 Mount DUT

Securely mount one part of the DUT, usually the connector adapter, switch, attenuator, etc. to the stationary portion of the test fixture. Fix the other part of the device under test, usually the connector plug or coupling mechanism, to the movable portion of the force generator.

5.5 Apply load

Smoothly apply the tensile load, as recommended in Table 1 or the specified rate, up to the specified value and specified duration.

5.6 Final examinations and measurements

Remove the tensile load from the specimen and the specimen from the test mounting. Unless otherwise specified, visually examine the specimen and its component parts in accordance with IEC 61300-3-1. Check for evidence of cracking, permanent deformation or other damage which might impair its function, and against any other pass/fail criteria specified in the relevant specification.

6 Severity

The severity of the test is dependant upon the magnitude of the tensile load and to a lesser extent to the rate of application and duration of the load. The magnitude, rate of application and duration of the load shall be given in the relevant specification. Recommended values of the test parameters are given in Table 1.

Table 1 – Recommended severity value

Category[1]	**Tensile load** (N)	**Rate of application** (N/s)	**Duration** (s)
C	40 ± 1	2	60
U, E	40 ± 1	2	120
NOTE 1 Category is defined in IEC 61753-1.			

7 Details to be specified

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

- magnitude and rate of application of the tensile load;
- coupling torque prior to testing, if necessary;
- fibre type and length;
- pre-conditioning procedure;
- recovery procedure;
- optically functioning or non-functioning;
- initial examinations and measurements and performance requirements;
- examinations and measurements during test and performance requirements, if required;
- final examinations and measurements and performance requirements;
- optical measurement method, if necessary;
- deviations from the test procedure;
- additional pass/fail criteria.

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