

**SLOVENSKI
STANDARD**

SIST EN 61300-2-15:1999

prva izdaja
maj 1999

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-15: Tests - Torque strength of coupling mechanism (IEC 61300-2-15:1995)

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ICS 33.180.20

Referenčna številka
SIST EN 61300-2-15:1999(en)

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English version

**Fibre optic interconnecting devices and passive components
Basic test and measurement procedures
Part 2-15: Tests - Torque strength of coupling mechanism
(IEC 61300-2-15:1995)**

Dispositifs d'interconnexion et
composants passifs à fibres optiques
Méthodes fondamentales d'essais et
de mesures
Partie 2-15: Essais - Robustesse du
mécanisme de verrouillage aux efforts
de torsion
(CEI 61300-2-15:1995)

Lichtwellenleiter - Verbindungselemente
und passive Bauteile - Grundlegende
Prüf- und Meßverfahren
Teil 2-15: Prüfungen
Kupplungsdrehmoment
(IEC 61300-2-15:1995)

This European Standard was approved by CENELEC on 1997-07-01. 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.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Annex ZA (normative)

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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-1	1995	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 3-1: Examinations and measurements Visual examination	EN 61300-3-1	1997

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
1300-2-15

Première édition
First edition
1995-07

**Dispositifs d'interconnexion et composants
passifs à fibres optiques –
Méthodes fondamentales d'essais
et de mesures –**

Partie 2-15:
Essais – Robustesse du mécanisme
de verrouillage aux efforts de torsion

**Fibre optic interconnecting devices
and passive components –
Basic test and measurement procedures –**

Part 2-15:
Tests – Torque strength of coupling mechanism

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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PRICE CODE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 2-15: Tests – Torque strength
of coupling mechanism**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 1300-2-15 has been prepared by sub-committee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

DIS	Report on voting
86B/542/DIS	86B/644/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. <https://standards.iteh.ai/catalog/standards/sist/10c3220-e6ca-4a06-925f-01f716912533/sist-en-61300-2-15-1999>

IEC 1300 consists of the following parts, under the general title *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*:

- Part 1: General and guidance
- Part 2: Tests
- Part 3: Examinations and measurements

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

Part 2-15: Tests – Torque strength of coupling mechanism

1 General

1.1 Scope and object

The purpose of this part of IEC 1300 is to apply an overload torque to twist-type coupling mechanisms. It is applicable to threaded or bayonet-twist type coupling mechanisms. It can be used to ensure that the coupling mechanism of a connector set or connector-device combination will withstand the torsional loads likely to be applied during normal service.

1.2 General description

A torsional load is smoothly applied to a mated connector set or connector-device combination in a manner that will over-torque threaded or bayonet twist-type coupling mechanisms. The torque is normally applied between the connector plug and the adapter or between the connector plug and the device being tested.

1.3 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of IEC 1300. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1300 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. Members of IEC and ISO maintain registers of currently valid international Standards.

IEC 1300-3-1: 1995, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-1: Examinations and measurements – Visual examination*

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2 Apparatus

The test apparatus shall be capable of applying a torque, either manually or automatically, to a threaded or bayonet coupling nut while the adapter or device is held in place. An example of a test apparatus is shown in figure 1. Some or all of the following apparatus components will be required.

2.1 Stand

Use a stand capable of ensuring that the specimen and the torque applicator are always held in the proper relationship during the test.

2.2 Specimen holder

The specimen holder shall be a floating fixture to which the device under test is mounted. The holder shall be prohibited from rotating, but shall otherwise be capable of moving freely in order to obtain the proper alignment between the coupling nut or cap and the adapter or other device under test.

2.3 Coupling

Use a coupling designed to mate with the cap or coupling nut of the specimen in a such a manner that the torque is applied orthogonally to the coupling interface without the presence of any bending moment.

2.4 Coupling shaft

A coupling shaft shall be used to connect the torque applicator through the coupling to the device under test.

2.5 Alignment mechanism

Use an alignment mechanism to ensure that the coupling shaft is always in the proper position relative to the specimen. A clearance hole or low friction sleeve bearing will usually be satisfactory.

2.6 Torque applicator and gauge

Torque shall be applied using a torque wrench or equivalent and a torque gauge, having a torque range of no more than three times the required torque test value. A maximum reading torque indicator is preferred, but not required. The gauge shall be accurate within 10 % of the applied torque value.

3 Procedure

3.1 Specimens

Mate the device to be tested 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.

3.2 Pre-conditioning

Pre-condition the prepared specimens for 4 h at the standard test conditions specified in IEC 1300-1 before beginning the test, unless a different set of conditions is specified in the detail specification.

3.3 Specimen mounting

Securely mount each specimen under test, usually the connector adapter, switch, attenuator, etc. to the stationary portion of the test fixture. Connect the torque applicator to the plug cap or coupling nut through the coupling, coupling shaft and alignment mechanism.

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3.4 Torque loading

Using the torque applicator, smoothly apply the specified torque to the cap or coupling nut at a nominal rate such that there is no element of impact loading. Unless otherwise specified in the detail specification, maintain the specified torque for a minimum period of 15 s.

3.5 Post-test examination

Remove the torque load and remove the specimen from the mounting. Unless otherwise specified, examine the specimen and its component parts in accordance with the requirements of IEC 1300-3-1. Check for any evidence of cracking, bending or permanent deformation. Check for other damage which might impair its function, and any other pass/fail criteria specified in the detail specification.

4 Severity

The severity of the test is dependant upon the magnitude of the applied torque and to a lesser extent to the duration of the load. The magnitude and duration of the load shall be given in the detail specification.

The following preferred severities are non-mandatory severities which may be applied to this test:

Overload torques
N m
0,4
0,6
0,8

5 Details to be specified

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

- Magnitude of overload torque
- Required coupling torque
- Duration of torque application, if other than 15 s
- Pre-conditioning procedure, if different from 3.2
- Recovery procedure
- Specimen optical functioning or not functioning
- Specimen mated or unmated
- Initial examinations and measurements and performance requirements
- Examinations and measurements during test and performance requirements, if required
- Final examinations and measurements and performance requirements
- Deviations from the test procedure
- Additional pass/fail criteria