



BSI Standards Publication

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

---

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

## National foreword

This British Standard is the UK implementation of EN IEC 61300-2-6:2024. It is identical to IEC 61300-2-6:2023. It supersedes BS EN 61300-2-6:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee 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 committee manager.

### Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2024  
Published by BSI Standards Limited 2024

ISBN 978 0 580 51485 2

ICS 33.180.20

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2024.

### Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

---

EUROPEAN STANDARD

**EN IEC 61300-2-6**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2024

ICS 33.180.20

Supersedes EN 61300-2-6:2011

English Version

**Fibre optic interconnecting devices and passive components -  
Basic test and measurement procedures - Part 2-6: Tests -  
Tensile strength of coupling mechanism  
(IEC 61300-2-6:2023)**

Dispositifs d'interconnexion et composants passifs  
fibroniques - Procédures fondamentales d'essais et de  
mesures - Partie 2-6: Essais - Résistance à la traction du  
mécanisme de couplage  
(IEC 61300-2-6:2023)

Lichtwellenleiter - Verbindungselemente und passive  
Bauteile - Grundlegende Prüf- und Messverfahren - Teil 2-  
6: Prüfungen - Zugfestigkeit der Verriegelung  
(IEC 61300-2-6:2023)

This European Standard was approved by CENELEC on 2023-12-28. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

The text of document 86B/4808/FDIS, future edition 3 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 approved by CENELEC as EN IEC 61300-2-6:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2024-09-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-12-28

This document supersedes EN 61300-2-6:2011 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Standard IEC 61300-2-6:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61753-1 NOTE Approved as EN IEC 61753-1

## Annex ZA (normative)

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

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cencenelec.eu](http://www.cencenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 1: General and guidance	EN IEC 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	-

## CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Apparatus.....	5
4.1 General.....	5
4.2 Force generator .....	6
4.3 Force gauge .....	7
4.4 Clamping device .....	7
4.5 DUT mount .....	7
5 Procedure.....	7
5.1 General.....	7
5.2 Preconditioning.....	7
5.3 Prepare DUT.....	7
5.4 Initial visual examinations and measurements.....	7
5.5 Mount DUT .....	7
5.6 Apply load.....	8
5.7 Recovery .....	8
5.8 Final examination and measurements .....	8
6 Severity .....	8
7 Details to be specified and reported.....	9
Bibliography.....	10
Figure 1 – Example of test apparatus.....	6
Table 1 – Recommended severity values .....	8

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

**FIBRE OPTIC INTERCONNECTING  
DEVICES AND PASSIVE COMPONENTS –  
BASIC TEST AND MEASUREMENT PROCEDURES –****Part 2-6: Tests – Tensile strength of coupling mechanism****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. 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 IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61300-2-6 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision.

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

- a) addition of normative references;
- b) modification of the details to be specified;

c) addition of optical monitoring.

The text of this International Standard is based on the following documents:

Draft	Report on voting
86B/4808/FDIS	86B/4825/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all 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 document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

**IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**



# 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 the coupling mechanism of a connector set or connector and device combination withstands the axial loads likely to be applied during normal service, and that the optical performance remains within the given specifications during this test.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61300-3-3, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-3: Examinations and measurements – Active monitoring of change in attenuation and return loss*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61300-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 4 Apparatus

#### 4.1 General

The test apparatus shall be capable of applying an axial load in a direction that separates the components. The tensile load is smoothly applied to the device under test (DUT) that consists of a mated connector pair or connector and device combination.

An example of a test apparatus is shown in Figure 1. Some or all the following apparatus components are required.