SLOVENSKI STANDARD
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Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 245: Tests - Durability test by water immersion (IEC 61300-2-45:1999

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-45: Tests - Durability test by water immersion

Lichtwellenleiter - Verbindungselemente und passive Bauteile - Grundlegende Prüf- und Meßverfahren -- Teil 2-45: Prüfungen - Beständigkeit gegen Eintauchen in Wasser

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures -- Partie 2-45: Essais - Essai de durabilité par immersion dans l'eau

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Fibre optic interconnecting devices and passive components Basic test and measurement procedures Part 2-45: Tests - Durability test by water immersion (IEC 61300-2-45:1999)

Dispositifs d'interconnexion et composants passifs à fibres optiques Méthodes fondamentales d'essais et de mesures
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(CEI 61300-2-45:1999)

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(IEC 61300-2-45:1999)

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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

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Foreword

The text of document 86B/1188/FDIS, future edition 1 of IEC 61300-2-45, 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 61300-2-45 on 1999-08-01.

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) 2000-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-08-01

Endorsement notice

The text of the International Standard IEC 61300-2-45:1999 was approved by CENELEC as a European Standard without any modification.

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

Partie 2-45: Essais – Essai de durabilité par immersion dans l'eau

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

Part 2-45: Tests – Durability test by water immersion

International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http://www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-45: Tests – Durability test by water immersion

FOREWORD

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International Standard IEC 61300-2-45 has been prepared by subcommittee 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:

FDIS	Report on voting
86B/1188/FDIS	86B/1204/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.

IEC 61300 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 2-45: Tests – Durability test by water immersion

1 General

1.1 Scope and object

The purpose of this part of IEC 61300 is to establish the ability of a fibre optic component to resist degradation when exposed to water immersion which the component may experience during its service life.

1.2 General description

The specimen is immersed in water for a specified period of time.

2 Apparatus

The apparatus consists of the following elements:

2.1 Containers

A boro-silicate glass or stainless steel vessel of suitable volume for the water shall be used. Vessels shall be of sufficient size and capacity to permit the specimen to be appropriately immersed in water without violating other physical constraints (e.g. the minimum cable bend radius).

2.2 Water

Distilled water.

2.3 Heat source

A suitable heat source capable of achieving and maintaining the specified temperature within ±2 °C of the required setting.

2.4 Oven

A suitable oven to dry the specimen during repeated immersion testing.

3 Procedure

The preparation of the specimen shall be in accordance with the relevant specification. Perform any pre-test measurements specified in the relevant specification. Unless otherwise specified, the specimen shall be subjected to the test in a non-operational mode.

3.1 Precondition the specimen and the water as specified in the relevant specification.

3.2 Prepare a vessel with sufficient water such that the specimen can be adequately immersed.

The quantity of water shall be sufficient such that the device under test is 1 cm to 5 cm below the surface of the water.

3.3 Immerse the specimen for the specified period while maintaining the water temperature. The specimen shall be immersed during the test.

3.4 At the end of the specified period, remove the specimen from the bath.

3.5 The surplus water shall be wiped off and the specimen shall be allowed to dry at room temperature for 24 h without controlling its humidity following the removal from the immersion bath.

3.6 When the repeated immersion test is carried out, the surplus water shall be wiped off and the specimen placed in the oven to dry for 2 h at 40 °C. Before the next immersion, the specimen shall be allowed to stabilise at room temperature for 2 h. This procedure shall be repeated following subsequent immersions.

3.7 Upon completion of the test, the specimen(s) shall be examined and all necessary observations recorded as specified in the relevant specification. Special attention shall be paid to swelling of materials, loss of adhesive bonding between bonded surfaces, corrosion of materials, softening of materials, degradation of optical characteristics, etc.

4 Severity

The severity consists of a combination of the following: water temperature, period of immersion, number of cycles of immersion and depth of immersion. The severity shall be specified in the relevant specification.

The following severities, which are not mandatory, may be specified for this procedure.

Water temperature (±2 °C) °C	**Period of immersion**	**Cycles of immersion**
5	10 min	1
25	1 h	3
45	24 h	7
	168 h	30