BRITISH STANDARD

BS EN
61300-2-38:
2006

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

Part 2-38: Tests — Sealing for pressurized fibre optic closures

The European Standard EN 61300-2-38:2006 has the status of a British Standard

ICS 33.180.20

BSI
British Standards

National foreword

This British Standard was published by BSI. It is the UK implementation of EN 61300-2-38:2006. It is identical with IEC 61300-2-38:2006. It supersedes BS EN 61300-2-38:1997 which is withdrawn.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 GEL/86/2 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.

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 2007

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English version

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 2-38: Tests - Sealing for pressurized fibre optic closures

(IEC 61300-2-38:2006)

Dispositifs d'interconnexion et composants passifs à fibres optiques - Méthodes fondamentales d'essais et de mesures Partie 2-38: Essais - Etanchéité pour les boîtiers à fibres optiques à surpression interne (CEI 61300-2-38:2006)

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This European Standard was approved by CENELEC on 2006-10-01. 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.

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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/2346/FDIS, future edition 2 of IEC 61300-2-38, 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 61300-2-38 on 2006-10-01.

This European Standard supersedes EN 61300-2-38:1997.

Specific technical changes from EN 61300-2-38:1997 include the specifications of more strict and more detailed sealing properties.

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)	2007-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-10-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61300-2-38:2006 was approved by CENELEC as a European Standard without any modification.

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CONTENTS

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

Part 2-38: Tests – Sealing for pressurized fibre optic closures

1 Scope

This part of IEC 61300 presents a method for testing the sealing performance of a fibre optic closure and sealing system of the closures, when required by the relevant specification.

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*

3 General description

3.1 Test methods

A number of closures are assembled following the manufacturer's instructions. The specimens are then sealed, pressurized and tested for leaks by using the pressure gauge (see 3.2.4) and measuring the time to failure.

The tests shall be carried out according to the standard test conditions as defined in IEC 61300-1, unless otherwise specified in the relevant specification.

Method A is a performance criterion test for leaks when the specimen is pressurized with air and submerged in a water bath. This method is generally used to check the sealing of the closure after installation or after test.

Method B is a performance criterion test for leaks when the specimen is pressurized with air and the pressure loss is monitored by using a gauge. This test method is generally used to check the sealing of the closure during mechanical tests at a specified test temperature, by measuring the pressure before and after the test.

3.2 Apparatus

The apparatus consists of the following elements.

3.2.1 Cable

Suitable cable to assemble the specimen shall be used.

3.2.2 Pressurizer

A pressurizer provides means of pressurizing the closures.

3.2.3 Capillary gas connections

Suitable capillary gas connections are needed for fitting into the specimen or cable to allow the specimen to be pressurized.

3.2.4 Pressure gauge

A pressure gauge is a gauge to measure the pressure inside the closures. Gauges with a suitable range and a resolution of 0,5 kPa to determine a 5 % drop in pressure shall be used.

3.2.5 Water bath

A water bath is needed for method A.

4 Procedure

4.1 Method A

Assemble the specimen using the smallest and the largest cable diameter for which the specimen is designed.

Install the pressure gauge into the specimen or cable.

Seal the cable ends at their extremities.

Pressurize the closure.

Submerge the specimen and cable in a water bath just below the water surface at the required temperature. No escape of air bubbles, indicating a leakage, shall be observed during the test.

4.2 Method B

Assemble the specimen using the smallest and the largest cable diameter for which the specimen is designed.

Install the pressure gauge into the specimen or cable.

Seal the cable ends at their extremities.

Pressurize the closure at specified temperature.

With the specimen at the test temperature, the air pressure shall be monitored using the installed gauge. A record of air pressure versus time shall be kept and plotted. The pressure in the specimen shall not decay more than the specified amount.

5 Severity

The severity is determined by the initial pressure, the time duration for the test and the allowable leakage or pressure decay during the test.

The following preferred severities may be specified for the sealing procedure.

– The test overpressure for specimens for unpressurized systems is 40 kPa.
– The test overpressure for specimens for pressurized systems is 98 kPa.

6 Details to be specified

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

– type and diameter of the cable to be used in the test;
– the procedure for mounting the specimen;
– duration of test;
– method of leak detection (Method A or B);
– allowable leakage for Method A;
– allowable pressure decay for Method B;
– water head (Method A);
– pre-conditioning of specimens, if any;
– deviations from test procedure;
– additional pass/fail criteria.

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	-[1)]	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures Part 1: General and guidance	EN 61300-1	2003[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

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