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

Part 2-49:

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

Partie 2-49:

**Essais –
Essai d'installation de connecteur**



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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 2-49: Tests –
Connector installation test**

FOREWORD

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International Standard IEC 61300-2-49 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/2508/FDIS	86B/2542/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of 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 publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 2-49: Tests – Connector installation test

1 Scope

This part of IEC 61300 provides a test to determine that a connector is capable of functioning when installed in a cabinet or other enclosure in which the space available is limited.

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 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*
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IEC 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Measurements – Attenuation*

3 General description

The specimen is mounted into the test apparatus as shown in Figure 1. A panel is brought parallel to the mounting fixture and change in loss is measured.

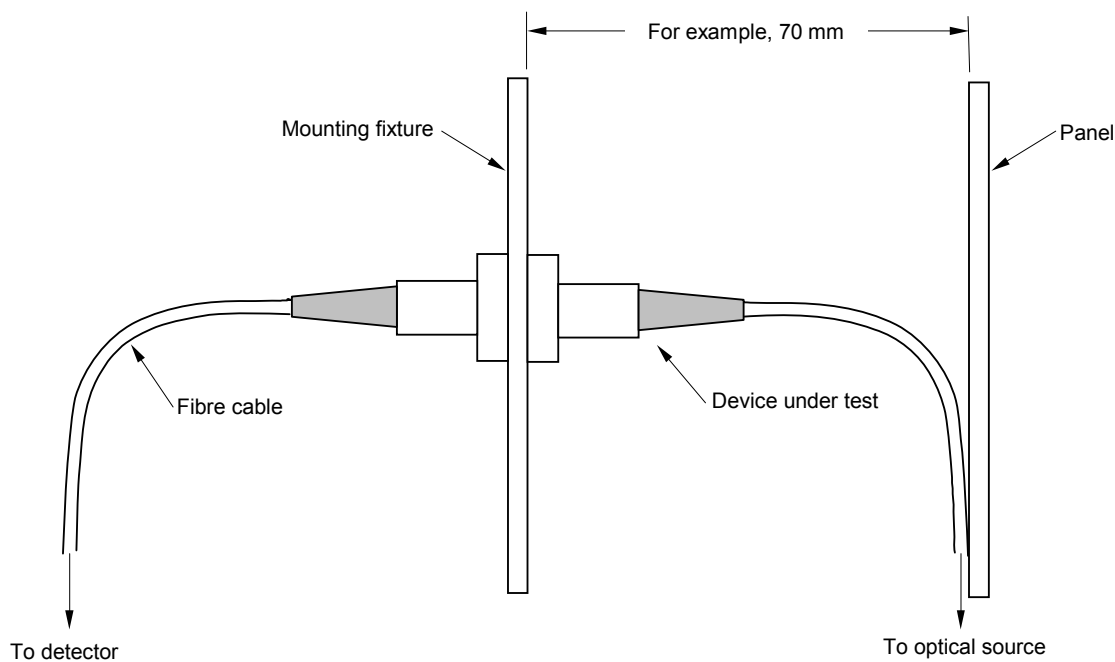
4 Apparatus

4.1 Mounting fixture

The mounting fixture is a vertical surface that consists of a means to hold the device under test in a stable and representative manner. For connectors the mounting fixture will incorporate an adaptor. The mounting fixture shall be capable of accommodating those devices where the input and output fibre cables are co-located on the same side of the device. For connectors, where an adapter is used to connect two connectors, if there is more than one way to mount the adapter in the fixture, the adapter should be mounted so as to maximize the distance from the end of the connector to the panel.

4.2 Panel

The panel consists of a flat surface that is brought parallel to the mounting fixture to simulate a cabinet door closing on the installed device.



IEC 952/07

Figure 1 – Example of the connector installation test

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4.3 Optical source and detector

The optical source and detector used to measure changes in attenuation shall comply with that specified in IEC 61300-3-4. See Table 1 for preferred wavelengths.

Table 1 – Preferred wavelengths

Singlemode	1 310 nm and 1 550 nm, optional 1 625 nm
Multimode	850 nm and 1300 nm

5 Procedure

5.1 Preparation of specimens

Prepare the specimens according to the manufacturer’s instructions or as specified in the relevant specification. The device under test shall be terminated with a sufficient length of fibre cable to facilitate interfacing with the optical source and detector.

5.2 Pre-conditioning

Pre-condition the device under test for 2 h at the standard test conditions as given in IEC 61300-1, unless otherwise specified in the relevant specification. Measure and record the attenuation of the device under test.

5.3 Initial measurements

Complete initial examinations and measurements on the specimen as required by the relevant specification.

5.4 Conditioning

Clean the connector according to the manufacturer's instructions. The body of the specimen shall be mounted in a representative manner onto the mounting fixture (see Figure 1). The jumper cable that exits from the device under test is to be dressed so that about one metre of cable is supported by the end of the connector boot.

5.5 Measuring the attenuation

Re-measure the attenuation to ensure that the fixturing has not affected the cable's attenuation.

5.6 Applying the panel

Bring the panel to a position that is parallel to the mounting fixture surface and at a distance from the mounting panel as illustrated in Figure 1.

5.7 Monitoring attenuation with the panel applied

The attenuation of the specimen shall be measured with the panel in position, as described in IEC 61300-3-4, unless otherwise specified in the relevant specification. Any deviation in the device attenuation from that measured in 5.5 shall be considered attributable to the cable/device interface, or to fibre-to-fibre interfaces in the device.

5.8 Final measurements and examinations

On completion of the test, remove the panel and make a final attenuation measurement to ensure that there is no permanent damage to the device under test.

Remove the device from the mounting fixture and, unless otherwise specified, visually examine the specimen in accordance with IEC 61300-3-1. Check for evidence of any degradation in the specimen. This may include, for example:

- broken, loose or damaged parts or accessories;
- breaking or damage to the cable jacket, seals, strain relief, or fibres;
- displaced, bent, or broken parts;

6 Severity

The severity of the test is dependent upon the distance of the panel from the sample's mounting position and the length of the connector.

7 Details to be specified

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

- distance of the panel to the mounting device/fixture;
- initial examinations, measurements and performance requirements;
- examinations, measurements and performance requirements during test;
- final examinations, measurements and performance requirements;
- deviations from this test method;
- additional pass/fail criteria.

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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*

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