IEC 61300-2-55

Edition 1.0 2017-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 2-55: Tests – Strength of mounted adaptor

Dispositifs d'interconnexion et composants passifs fibroniques – Procédures fondamentales d'essais et de mesures –
Partie 2-55: Essais – Résistance du raccord monté

IEC 61300-2-55:2017-03(en-fr)

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

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FOREWORD

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International Standard IEC 61300-2-55 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

FDIS	Report on voting
86B/4054/FDIS	86B/4067/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

Part 2-55: Tests – Strength of mounted adaptor

1 Scope

This part of IEC 61300 describes the test procedure to measure the mounting strength of an optical adaptor or receptacle to a fixture.

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*

3 Terms and definitions

No terms and definitions are listed in this document.

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 General description

The device under test (DUT) is an optical connector adaptor or receptacle mounted to a fixture. A force is applied to the adaptor or receptacle at the specified rate until the required load has been reached.

5 Apparatus

5.1 Loading method

5.1.1 General

The test apparatus shall be capable of applying an axial load to the DUT. Two methods for applying the load are shown in Figure 1 and Figure 2.

5.1.2 Method A

The axial load is applied to the DUT via the force gauge and the holding fixture attached to the DUT as shown in Figure 1.

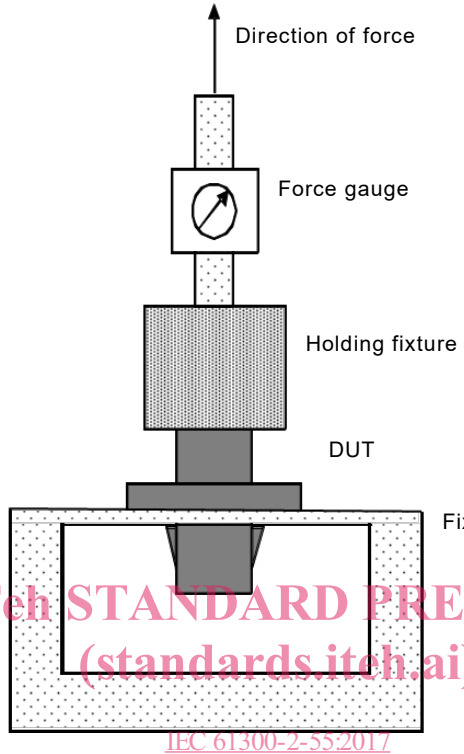

Figure 1 – Example of test apparatus for method A

5.1.3 Method B

The axial load is applied directly to the DUT via the force gauge only, as shown in Figure 2.

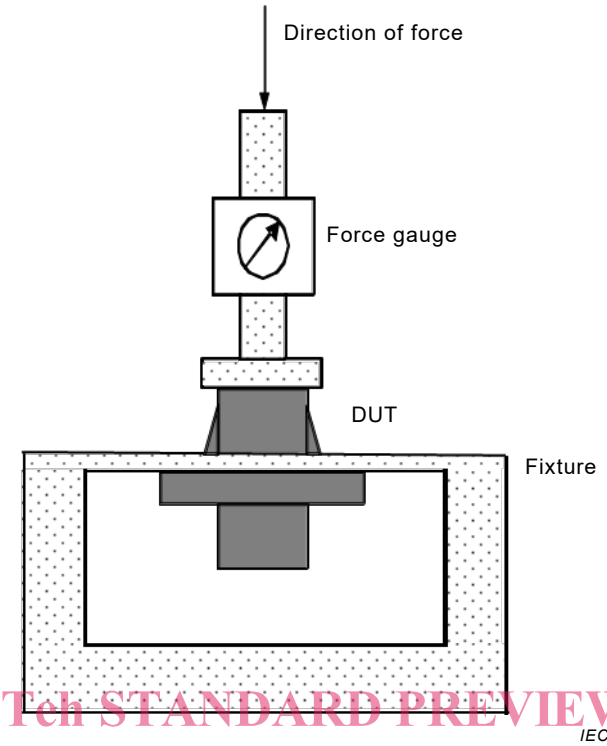

Figure 2 – Example of test apparatus for method B

5.2 Force generator

The force generator may be any device or apparatus capable of smoothly applying the specified force at the specified rate.

5.3 Force gauge

A force gauge of specified uncertainty shall be used to measure the axial force applied to the DUT.

5.4 Holding fixture

A suitable holding fixture shall be used in method A to couple the force generator to the DUT. A connector plug may be used as a holding fixture. Care shall be taken in the design and use of the holding fixture to ensure that it does not apply compressive forces which might deform or break the DUT.

5.5 Fixture

The fixture shall be rigid enough not to bend during the test. The cut-outs for IEC 61754-4 series (SC), IEC 61754-7 series (MPO) and IEC 61754-20 (LC) are given in Annex A. For other connector styles, give the cut-out dimensions and panel thickness dimension as part of the details to be specified (see Clause 8).

5.6 Timer

A device measures the total time the force is applied.

6 Procedure

6.1 General description

Unless otherwise specified, the test shall be performed under standard test conditions and the DUT shall be subjected to the test procedure according to 6.2 to 6.7.

6.2 Pre-conditioning

Unless otherwise specified, pre-condition each DUT for more than or equal to 2 h at the standard atmospheric conditions specified in IEC 61300-1.

6.3 Initial examination and measurement

Initial examinations and measurements on the DUT shall be made as required by the relevant specification. Visual examination shall be done according to IEC 61300-3-1.

6.4 Mount DUT

Securely mount the DUT to the apparatus as shown in Figure 1 or Figure 2.

6.5 Conditioning

Smoothly apply the force at the specified rate up to the specified value and hold for the specified duration according to the relevant specification. When the relevant specification does not define a force value, refer to the recommended severities shown in Table 1. Standard atmospheric conditions to be as specified in IEC 61300-1.

6.6 Recovery

Remove the DUT from the test apparatus and allow the DUT to recover under standard conditions for 10 min, as defined in IEC 61300-1, unless otherwise specified in the relevant specification.

6.7 Final examination and measurement

Unless otherwise specified, visually examine the DUT and its component parts in accordance with IEC 61300-3-1. Check for evidence of cracking, permanent deformation or other damage which might impair its function, and against any other pass/fail criteria specified in the relevant specification.

7 Severity

The severity of the test is dependent upon the magnitude of the force and to a lesser extent to the rate of application and duration at the specified load. The magnitude, rate of application and duration at the specified load shall be given in the relevant specification. Recommended values of the test parameters are given in Table 1.

Table 1 – Recommended severity value

Category [a]	Applied force N	Rate of force N/s	Duration s
C, U, E	70	5	10
[a] The categories are defined in IEC 61753-1.			

8 Details to be specified

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

– test method used, A or B;
– sample size;
– detail specification of the DUT;
– mating structure of the DUT and the holding fixture;
– panel cut-out dimensions;
– panel thickness;
– applied force and its rate of application;
– duration of the applied force;
– item and criteria of the initial examination;
– item and criteria of the final examination;
– deviations from this document.