

INTERNATIONAL STANDARD

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

[IEC 61300-2-55:2017](https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017)

<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Glossary - std.iec.ch/glossary

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

IEC'S STANDARD PREVIEW
(standards.iteh.ai)
IEC 61300-2-55:2017
https://standards.iteh.ai/catalog/standards/iec/61300-2-55-2017
d353827cc344/iec-61300-2-55-2017

INTERNATIONAL STANDARD

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

STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.180.20

ISBN 978-2-8322-4076-2

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 General description	6
5 Apparatus.....	6
5.1 Loading method	6
5.1.1 General	6
5.1.2 Method A.....	7
5.1.3 Method B.....	7
5.2 Force generator	8
5.3 Force gauge	8
5.4 Holding fixture	8
5.5 Fixture	8
5.6 Timer.....	8
6 Procedure.....	9
6.1 General description.....	9
6.2 Pre-conditioning.....	9
6.3 Initial examination and measurement.....	9
6.4 Mount DUT	9
6.5 Conditioning.....	9
6.6 Recovery	9
6.7 Final examination and measurement.....	9
7 Severity.....	9
8 Details to be specified	10
Annex A (normative) Fixture information	11
Bibliography.....	15
Figure 1 – Example of test apparatus for method A.....	7
Figure 2 – Example of test apparatus for method B.....	8
Figure A.1 – Fixture cut-out information for SC simplex adaptor.....	11
Figure A.2 – Fixture cut-out information for SC duplex adaptor	11
Figure A.3 – Fixture cut-out information for LC simplex adaptor	12
Figure A.4 – Fixture cut-out information for LC duplex (square flange) adaptor	12
Figure A.5 – Fixture cut-out information for LC duplex (rectangular flange) adaptor	13
Figure A.6 – Fixture cut-out information for LC quad (rectangular flange) adaptor.....	13
Figure A.7 – Fixture cut-out information for MPO adaptor	13
Table 1 – Recommended severity value.....	9
Table A.1 – Dimensions for SC simplex adaptor.....	11
Table A.2 – Dimensions for SC duplex adaptor	12
Table A.3 – Dimensions for LC simplex adaptor.....	12
Table A.4 – Dimensions for LC duplex (square flange) adaptor	12

Table A.5 – Dimensions for LC duplex (rectangular flange) adaptor	13
Table A.6 – Dimensions for LC quad (rectangular flange) adaptor	13
Table A.7 – Dimensions for MPO adaptor	14

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[IEC 61300-2-55:2017](https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017)

<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-55: Tests – Strength of mounted adaptor

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

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.

A bilingual version of this publication may be issued at a later date.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[IEC 61300-2-55:2017](#)

<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>

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*

[IEC 61300-2-55:2017](https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017)

3 Terms and definitions

<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>

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

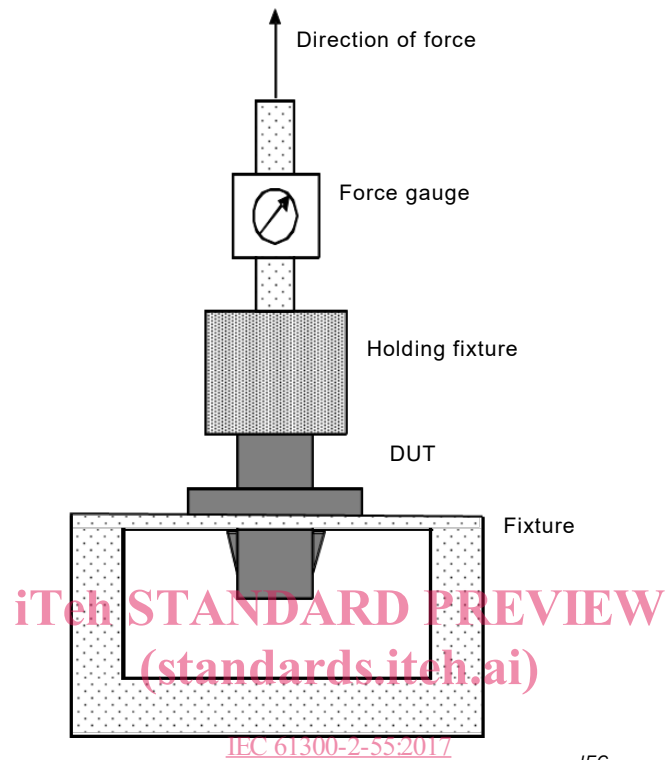
5.1 Loading method

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.



<https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017>

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.

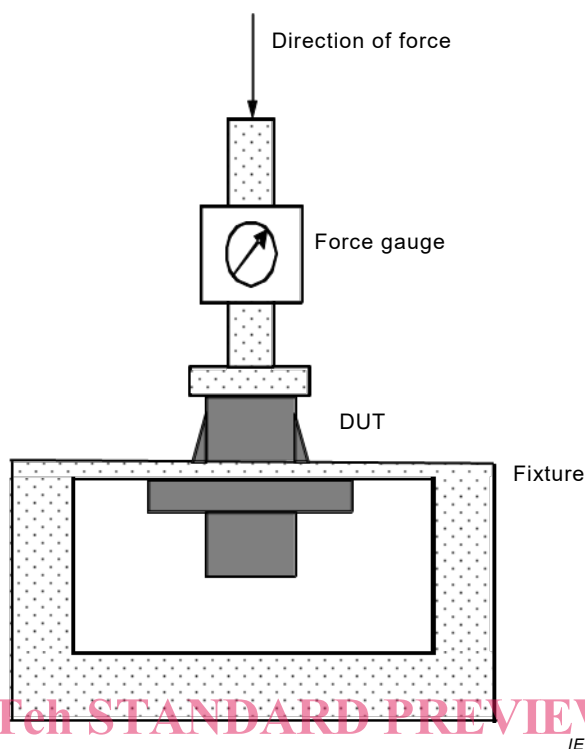


Figure 2 – Example of test apparatus for method B

[IEC 61300-2-55:2017](https://standards.iteh.ai/catalog/standards/sist/70b7a25c-f723-4163-9012-d353827cc344/iec-61300-2-55-2017)

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.