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COMMENTED VERSION

Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -
Part 2-33: Tests - Assembly and disassembly of fibre optic mechanical splices, fibre management systems, protective housings and hardened connectors

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CONTENTS

FOREWORD 2
1 Scope 4
2 Normative references 4
3 Terms and definitions 5
4 General description 5
5 Procedure 6
5.1 Preparation of the ~~specimen~~ DUT 6
5.2 Procedure A: Re-installation of an optical mechanical splice after disassembly 6
5.3 Procedure B: Optical stability during ~~product~~ reconfiguration of fibre management systems and protective housings 6
5.4 Procedure C: Sealing performance after frequent opening and closing of the ~~enclosures~~ protective housing 7
5.5 Procedure D: Verification of the sealing performance after frequent mating and demating of a hardened connector 7
5.6 Ageing procedure 7
6 Severity 9
7 Details to be specified and reported 9
Annex A (informative) Installation and intervention procedure for ~~closure~~ protective housing – Optical stability 11
~~Bibliography~~ .....
List of comments 13

Table 1 – Ageing procedure between two cycles of assembly and disassembly of fibre optic mechanical splices ~~and closures~~, protective housings and hardened connectors 8
Table 2 – Number of assembly-disassembly cycles for different operating environments 9

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Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-33: Tests - Assembly and disassembly of fibre optic mechanical splices, fibre management systems ~~and closures~~, protective housings and hardened connectors

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This commented version (CMV) of the official standard IEC 61300-2-33:2026 edition 4.0 allows the user to identify the changes made to the previous IEC 61300-2-33:2012 edition 3.0. Furthermore, comments from IEC TC SC 86B experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 61300-2-33 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) update of the terms and definitions according to IEC 61753-1:2018 and IEC 61756-1:2019;
b) update of the test severities according to the new edition of IEC 61753-1:2018;
c) addition of procedure D to verify the sealing performance after frequent mating and demating of a hardened connector.

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

Draft	Report on voting
86B/5175/FDIS	86B/5201/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

The list of all parts of 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.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.

1 Scope

This part of IEC 61300, evaluates the ~~assembly and reassembly~~ behaviour of a fibre optic mechanical splice, a fibre management system, ~~or a closure for~~ a protective housing **1** or a hardened connector **2** after being subjected to a specified number of ~~times~~ assembly and disassembly operations.

The test procedures described in this document simulate ~~the following~~ conditions ~~which may be encountered during the component's service lifetime~~ that the component can encounter during its service lifetime to check the following performance characteristics:

– ~~the ability~~capability of an optical mechanical splice to be reinstalled after being disassembled;

– ~~the ability~~capability to ~~re-enter~~ reintroduce fibre management systems and ~~closures~~ protective housings, accessing fibres and optical components and making reconfigurations without disturbing transmission in adjacent fibre circuits;

~~– verification of the sealing performance after frequent opening and closing of enclosures.~~

– sealing performance of the protective housing after frequent opening and closing operations;

– sealing performance of the hardened connector after frequent mating and demating operations. **3**

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 61300-2-22, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-22: Tests - Change of temperature*

IEC 61300-3-28, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-28: Examinations and measurements - Transient loss*

IEC 61753 (all parts), *Fibre optic interconnecting devices and passive components - Performance standard*

IEC 61753-1, *Fibre optic interconnecting devices and passive components - Performance standard - Part 1: General and guidance ~~for performance standards~~*

IEC 61753-131 (all parts), *Fibre optic interconnecting devices and passive components - Performance standard: Single-mode mechanical fibre splice*

IEC 62005 (all parts), *Reliability of fibre optic interconnecting devices and passive components*

3 Terms and definitions

For the purposes of this document, the ~~following~~ terms and definitions found in IEC 61753-1 and IEC 61756-1 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/

– ISO Online browsing platform: available at https://www.iso.org/obp

~~**3.1**~~
~~**closure**~~
~~all external housings except outdoor cabinets~~

~~**3.2**~~
~~**fibre management system**~~
~~system to control fibre routing from the incoming to the outgoing fibres~~

~~**3.3**~~
~~**re-entry**~~
~~access to the fibre management system after initial installation~~

~~**3.4**~~
~~**mechanical splice**~~
~~a fibre splice accomplished by fixtures or materials, rather than by thermal fusion~~

~~Note 1 to entry: Index matching material may be applied between the two fibre ends.~~

4 General description

~~Three~~Four test procedures are described. Procedure A tests the capability of an optical mechanical splice to be reinstalled after being disassembled. Procedure B tests the capability to reintroduce fibre management systems and ~~closures~~ protective housings, accessing fibres and optical components and making reconfigurations without disturbing transmission in adjacent fibre circuits. Procedure C verifies the sealing performance of the protective housing after frequent opening and closing ~~of enclosures~~ operations. Procedure D verifies the sealing performance of a hardened connector after frequent mating and demating operations. **4**

The mechanical splice, fibre management system, protective housing or ~~(en)closure~~ hardened connector shall be assembled and reassembled following the manufacturer's instructions a specified number of times, including any specified cleaning or recovery procedure.

The test shall be performed according to ~~requirements referenced in IEC 61753-1~~ the relevant IEC 61753 series performance standards or IEC 62005 series reliability documents. Assembly and disassembly of the mechanical splice, fibre management system ~~or closure shall be carried out at room temperature, unless otherwise specified~~, protective housing or hardened connector shall be carried out at standard atmospheric conditions according to IEC 61300-1.