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BS EN 61753-1-3:2014



BSI Standards Publication

Fibre optic interconnecting devices and passive components — Performance standard

Part 1-3: General and guidance for single-mode fibre optic connector and cable assembly for industrial environment, Category I

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This British Standard is the UK implementation of EN 61753-1-3:2014. It is identical to IEC 61753-1-3:2014. It supersedes DD IEC/PAS 61753-1-3:2009 which is withdrawn.

BSI, as a member of CEN, is obliged to publish EN 61753-1-3:2014 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval as a European Standard as they considered that some of the values in the performance tests were not sufficiently different to standard connectors (described in BS EN 61753-1:2007) to warrant the description 'industrial' and the correlation with the $M_3I_3C_3E_3$ requirements unsatisfactory (described in PD ISO/IEC TR 29106:2007+A1:2012).

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 this committee 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.

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Amendments/corrigenda issued since publication

Date	Text affected
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July 2014

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English Version

Fibre optic interconnecting devices and passive components -
Performance standard - Part 1-3: General and guidance for
single-mode fibre optic connector and cable assembly for
industrial environment, Category I
(IEC 61753-1-3:2014)

Dispositifs d'interconnexion et composants passifs à fibres
optiques - Norme de performance - Partie 1-3 : Généralités
et lignes directrices relatives aux connecteurs à fibres
optiques unimodales et aux cordons en environnement
industriel, Catégorie I
(CEI 61753-1-3:2014)

Lichtwellenleiter - Verbindungselemente und passive
Bauteile - Betriebsverhalten - Teil 1-3: Allgemeines und
Leitfaden für Einmoden-Lichtwellenleiter-Steckverbinder
und konfektionierte LWL-Kabel in rauer industrieller
Umgebung der Kategorie I
(IEC 61753-1-3:2014)

This European Standard was approved by CENELEC on 2014-06-27. 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.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of document 86B/3752/FDIS, future edition 1 of IEC 61753-1-3, 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 approved by CENELEC as EN 61753-1-3:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-03-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-06-27

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61753-1-3:2014 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61300-2-35 NOTE Harmonised as EN 61300-2-35.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-60	-	Environmental testing -- Part 2-60: Tests - Test Ke: Flowing mixed gas corrosion test	EN 60068-2-60	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
IEC 60793-2-50	-	Optical fibres -- Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	-
IEC 61300 (series)	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures	EN 61300 (series)	-
IEC 61300-2-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-1: Tests - Vibration (sinusoidal)	EN 61300-2-1	-
IEC 61300-2-2	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-2: Tests - Mating durability	EN 61300-2-2	-
IEC 61300-2-4	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-4: Tests - Fibre/cable retention	EN 61300-2-4	-
IEC 61300-2-5	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-5: Tests - Torsion	EN 61300-2-5	-
IEC 61300-2-6	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-6: Tests - Tensile strength of coupling mechanism	EN 61300-2-6	-
IEC 61300-2-7	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-7: Tests - Bending moment	EN 61300-2-7	-
IEC 61300-2-9	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-9: Tests - Shock	EN 61300-2-9	-

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		passive components - Basic test and measurement procedures -- Part 2-10: Tests - Crush resistance		
IEC 61300-2-12	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-12: Tests - Impact	EN 61300-2-12	-
IEC 61300-2-22	-	Basic test and measurement procedures - Part 2-22: Tests - Change of temperature	-	-
IEC 61300-2-26	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-26: Tests - Salt mist	EN 61300-2-26	-
IEC 61300-2-34	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-34: Tests - Resistance to solvents and contaminating fluids of interconnecting components and closures	EN 61300-2-34	-
IEC 61300-2-46	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 2-46: Tests - Damp heat cyclic	EN 61300-2-46	-
IEC 61300-3-1	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-1: Examinations and measurements - Visual examination	EN 61300-3-1	-
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	EN 61300-3-3	-
IEC 61300-3-4	2012	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-4: Examinations and measurements - Attenuation	EN 61300-3-4	2013
IEC 61300-3-6	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-6: Examinations and measurements - Return loss	EN 61300-3-6	-
IEC 61300-3-11	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-11: Examinations and measurements - Engagement and separation forces	EN 61300-3-11	-
IEC 61300-3-28	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-28: Examinations and measurements - Transient loss	EN 61300-3-28	-

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IEC 61300-3-35	-	passive components - Basic test and measurement procedures -- Part 3-34: Examinations and measurements - Attenuation of random mated connectors	EN 61300-3-35	-
IEC 61753-1	2007	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and fibre-stub transceivers	EN 61753-1	2007
IEC (series)	61754-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces	EN 61754 (series)	-
IEC (series)	61755-	Fibre optic interconnecting devices and passive components -Fibre optic connector optical interfaces	EN 61755 (series)	-
IEC 61755-1	-	Fibre optic interconnecting devices and passive components -Fibre optic connector optical interfaces -- Part 1: Optical interfaces for single mode non-dispersion shifted fibres - General and guidance	EN 61755-1	-
ISO/IEC 24702	-	Information technology - Generic cabling - Industrial premises	-	-
ISO/IEC/TR 29106	-	Information technology - Generic cabling - Introduction to the MICE environmental classification	-	-

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – PERFORMANCE STANDARD –

Part 1-3: General and guidance for single-mode fibre optic connector and cable assembly for industrial environment, Category I

1 Scope

This part of IEC 61753 defines the minimum initial performance, test and measurement requirements and severities which a connector or cable assembly with single-mode fibres needs to satisfy in order to be categorized as meeting IEC Category I (industrial environment). Category I is an additional environmental category to C, U, O and E already described in IEC 61753-1. Category I is based on the MICE Table described in ISO/IEC 24702.

The performance tests evaluate the product for two basic acceptance criteria: mechanical integrity and optical transmission requirements, by simulating the effects of exposure to the environment in which it will be installed, simulating installation and intervention conditions, and evaluating specified features of the product.

The defined performance test procedures simulate the situation in a mated condition under use in an industrial environment. It is not the intention to simulate the situation:

- when being mated or demated;
- during the assembling of the connector;
- during transportation and storage of the connector.

Reliability tests for life time expectations are not covered by this standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-60, *Environmental testing – Part 2: Tests – Test Ke: Flowing mixed gas corrosion test*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60793-2-50, *Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres*

IEC 61300 (all parts), *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

IEC 61300-2-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal)*

IEC 61300-2-2, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-2: Tests – Mating durability*