

SLOVENSKI STANDARD

SIST EN 50377-14-1:2021

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Nadomešča:

SIST EN 50377-14-1:2018

Konektorski sestavi in povezovalne komponente za uporabo v optičnih komunikacijskih sistemih - Specifikacije izdelka - 14-1. del: Simpleksne in dupleksne vrvice, izvedene iz simpleksnih vtičev z valjastimi tulkami z uporabo EN 60793-2-50 za enorodovno vlakno B-652 ali B-657 za kategorijo C v skladu z EN 61753-1

Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications Part 14-1: Simplex and duplex cords made from simplex plugs with cylindrical ferrules, using EN 60793-2-50 single-mode B-652 ou B-657 fibre for Category C according to EN 61753-1

[SIST EN 50377-14-1:2021](#)

Steckverbindersätze und Verbindungsbaulemente für Lichtwellenleiter-Datenübertragungssysteme - Produktnormen - Teil 14-1: Simplex- und Duplex-Kabel mit Simplex-Steckverbindern mit zylindrischen Ferrulen mit Einmodenfasern der Kategorie B1 oder B6 nach EN 60793-2-50 für Kategorie C nach EN 61753-1

Jeux de connecteurs et composants d'interconnexion à utiliser dans les systèmes de communication par fibres optiques - Spécifications de produit - Partie 14-1: Cordons simplex et duplex constitués de fiches simplex avec férules cylindriques, utilisant les fibres unimodales B-652 ou B-657 de l'EN 60793-2-50 pour la catégorie C conformément à l'EN 61753-1

Ta slovenski standard je istoveten z: EN 50377-14-1:2021

ICS:

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices
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EUROPEAN STANDARD

EN 50377-14-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

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amendments and corrigenda (if any)

English Version

Connector sets and interconnect components to be used in
optical fibre communication systems - Product specifications
Part 14-1: Simplex and duplex cords made from simplex plugs
with cylindrical ferrules, using EN 60793-2-50 single-mode B-652
ou B-657 fibre for Category C according to EN 61753-1

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Steckverbindersätze und Verbindungsbaulemente für
Lichtwellenleiter-Datenübertragungssysteme -
Produktnormen - Teil 14-1: Simplex- und Duplex-Kabel mit
Simplex-Steckverbindern mit zylindrischen Ferrulen mit
Einmodenfasern der Kategorie B1 oder B6 nach EN 60793-
2-50 für Kategorie C nach EN 61753-1

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 50377-14-1:2021) has been prepared by CLC/TC 86BXA “*Fibre optic interconnect, passive and connectorised components*”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-08-09
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-08-09

This document supersedes EN 50377-14-1:2018.

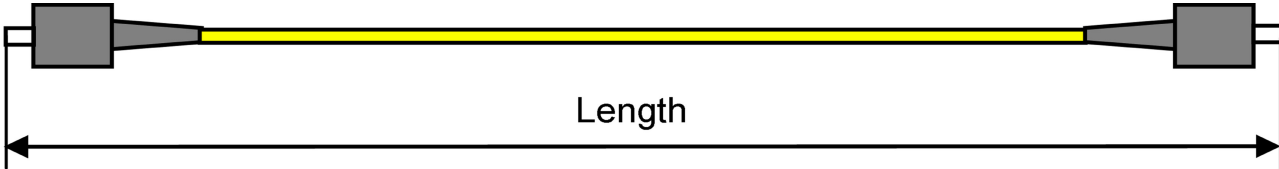
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Connector sets and interconnect components to be used in optical fibre communication systems – product specifications			
Part 14–1: Simplex and duplex cords made from simplex plugs with cylindrical ferrules, using EN 60793-2-50 single-mode B-652 or B-657 fibre for Category C according to EN IEC 61753-1			
Description		Performance	
Fibre category:	EN 60793-2-50 Types B-652 and B-657	Application:	For use indoors (EN Category C: controlled environment)
Cable type:	EN 60794-2-50 EN 60794-2-51	Attenuation grades: (random mate)	B: $\leq 0,12$ dB mean $\leq 0,25$ dB for ≥ 97 % of measurements C: $\leq 0,25$ dB mean $\leq 0,50$ dB for ≥ 97 % of measurements
		Return loss grade: (random mate)	1: ≥ 60 dB 2: ≥ 45 dB
Related documents:			
EN 50377 series	Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications		
EN 60793-2-50	Optical fibres – Part 2–50: Product specifications – Sectional specification for category B single-mode fibres (IEC 60793-2-50)		
EN 60794-2-50	Optical fibre cables – Part 2–50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies (IEC 60794-2-50)		
EN 60794-2-51	Optical fibre cables – Part 2–51: Indoor cables - Detail specification for simplex and duplex cables for use in cords for controlled environment		
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 series)		
EN IEC 61753-1	Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards (IEC 61753-1)		
Outline and maximum dimensions:			
 <p style="text-align: center;">Length</p>			

1 Scope

1.1 Product definition

This document contains the initial, start of life, dimensional, optical, mechanical and environmental performance requirements that an assembled single mode cord with cylindrical ferruled connectors will meet in order for it to be categorized as an EN standard product.

Since different variants and grades of performance are permitted, product marking details are given in 4.5 and Clause 5.

1.2 Intermateability of the plugs

Where the products conforming to the requirements of this document are intermateable, the resulting level of random attenuation performance will be in accordance with Table 1. The intention is that this will be true irrespective of the manufacturing source(s) of the product.

When intermating plug variants having different attenuation grades (as specified in EN 61755-1) the resulting level of attenuation cannot be any better than the worst attenuation grade of the individual plugs.

Intermating a grade C plug with a grade B plug will result in a grade C level of random attenuation performance.

Table 1 — Attenuation grade matrix

Plug 1 grade	Plug 2 grade	Ensured attenuation grade
B	B	B
C	C	C
B	C	C
C	B	C

1.3 Operating environment

The tests selected, combined with the severities and durations, are representative of an EN IEC 61753-1 Category C environment.

1.4 Reliability

Whilst the anticipated service life expectancy of the product in this environment is 20 years, compliance with this standard does not guarantee the reliability of the product. This is predicted using a recognized reliability assessment program.

1.5 Quality assurance

Compliance with this standard does not guarantee the manufacturing consistency of the product. This is expected to be maintained using a recognized quality assurance program.

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.

EN 50377 (series), *Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications*

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

EN 60794-2-50, *Optical fibre cables - Part 2-50: Indoor cables - Family specification for simplex and duplex cables for use in terminated cable assemblies (IEC 60794-2-50)*

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EN 60794-2-51, *Optical fibre cables - Part 2-51: Indoor cables - Detail specification for simplex and duplex cables for use in cords for controlled environment (IEC 60794-2-51)*

EN IEC 61300-2-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-4: Tests - Fibre or cable retention (IEC 61300-2-4)*

EN 61300-2-5, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-5: Tests – Torsion (IEC 61300-2-5)*

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

EN 61300-2-42, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-42: Tests - Static side load for strain relief (IEC 61300-2-42)*

EN 61300-2-44, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-44: Tests - Flexing of the strain relief of fibre optic devices (IEC 61300-2-44)*

EN 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 (IEC 61300-3-3)*

EN 61300-3-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-4: Examinations and measurements – Attenuation (IEC 61300-3-4)*

EN 61300-3-6, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-6: Examinations and measurements - Return loss (IEC 61300-3-6)*

EN 61300-3-22, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-22: Examinations and measurements - Ferrule compression force (IEC 61300-3-22)*

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

EN 61300-3-34, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors (IEC 61300-3-34)*

EN 61300-3-47, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 3-47: Examinations and measurements - End face geometry of PC/APC spherically polished ferrules using interferometry (IEC 61300-3-47)*

EN IEC 61753-1, *Fibre optic interconnecting devices and passive components - Performance standard - Part 1: General and guidance (IEC 61753-1)*

EN 61755-1, *Fibre optic connector optical interfaces - Part 1: Optical interfaces for single mode non-dispersion shifted fibres - General and guidance (IEC 61755-1)*

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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Description

4.1 General

This document applies to both cords and work area cords.

A cord is defined as a length of cable with connector plugs assembled at both cable ends. Typical length is (but not limited to) 2 m to 10 m, measured from tip to tip at the extremes. Cords are installed in mechanically protected locations (inside cabinets, distribution frames and enclosures) according to EN IEC 61753-1, Category C (controlled environment). Work area cords are typically more ruggedized and used in mechanically less protected locations.

For the purpose of this document, the maximum length a cord may have is 999 m.

4.2 Plug

The plug features a cylindrical ferrule. It may have a single male key that is used to limit, and may be used to orientate, the relative rotation between mated connectors.

A cover (dust cap) to protect the ferrule end faces when the connectors are in the unmated condition shall be provided.

The plug shall meet the relevant product specification of the EN 50377 series

4.3 Fibre

The fibre shall meet the requirements of EN 60793-2-50

4.4 Cable

The cable shall meet the requirements of EN 60794-2-50 and EN 60794-2-51.

4.5 Materials

Materials which are not specified or which are not specifically described are left to the discretion of the manufacturer.

The plug materials shall meet the relevant requirements of the product specifications listed in Table 2.

The cable materials shall meet the requirements of EN 60794-2-50.

4.6 Marking

Marking of the product shall be in the following order of precedence:

- a) identification of the cable assembly manufacturer;
- b) manufacturing date code: year/week;
- c) manufacturer's unique part number.

Provision should be made to avoid confusion between the original cable marking and the cord product information.

5 Variants

Tables 2 to 7 provide the different variants.

EN 50377-14-1 – XXX₁X₂X₃ – XXX₄X₅X₆ – XXX₇ – X₈XX₉

Table 2 — XXX₁ and XXX₄ variants

Examples for variant No. XXX ₁ and XXX ₄ ^a	Connector type	EN
021	FC-PC	50377-2-1
044	SC	50377-4-4
042	SC-APC	50377-4-2
073	LC-APC	50377-7-3
074	LC-PC	50377-7-4
087	LSH-PC	50377-8-7
088	LSH-APC	50377-8-8
101	MU	50377-10-1
132	LX.5	50377-13-2
133	LX.5-APC	50377-13-3

^a Variant no. is valid for all simplex and duplex connector types within EN 50377 series. The above table only gives examples, other variants of EN 50377 series are possible.

Table 3 — X₂ and X₅ variants

Variant No. X ₂ and X ₅	Attenuation grade (EN 61755-1)
B	B (≤0,25 dB)
C	C (≤0,5 dB)

Table 4 — X₃ and X₆ variants

Variant No. X ₃ and X ₆	Return loss grade (EN 61755-1)
1	1 (≥60 dB mated)
2	2 (≥45 dB mated)

Table 5 — XXX₇ variants

Variant No. XXX ₇	Cable length (in metre)	Remark
001 - 999	Length measured from tip to tip of connectors	Tolerances on length 1m ≤ XXX ₇ ≤ 2m. + 50, - 0 mm XXX ₇ > 2m +4 %, -1 %

Table 6 — X₈ variants

Variant No. X ₈	Cable type
1	Buffered Fibre
2	Simplex
3	Duplex Zip cord