SLOVENSKI STANDARD
oSIST prEN 50377-14-1:2017

01-april-2017

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 enorodno vlakno B1 ali B6 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 singlemode B1 or B6 fibre for Category C according to EN 61753-1

Steckverbindersätze und Verbindungsbauelemente für Lichtwellenleiter-Datenübertragungssysteme - Produktnormen - Teil 14-1: Simplex- und Duplex-Kabel mit Simplex-Steckverbindern mit zylindrischen Ferrulen mit Einmodenfasern vom Typ 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 comportant des fiches simplex munies de férules cylindriques, utilisant la fibre B1 ou B6 unimodale selon l'EN 60793-2-50

Ta slovenski standard je istoveten z: **prEN 50377-14-1:2017**

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33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices

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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 singlemode B1 or B6 fibre for Category C according to EN 61753-1

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This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2017-05-04.

It has been drawn up by CLC/TC 86BXA.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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CENELEC

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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European foreword

This document (prEN 50377-14-1:2017) has been prepared by CLC/TC/86BXA "*Fibre optic interconnect, passive and connectorised components*".

This document is currently submitted to the Enquiry.

This document will supersede EN 50377-14-1.

Connector sets and interconnect components to be used in optical fibre communication systems – product specifications

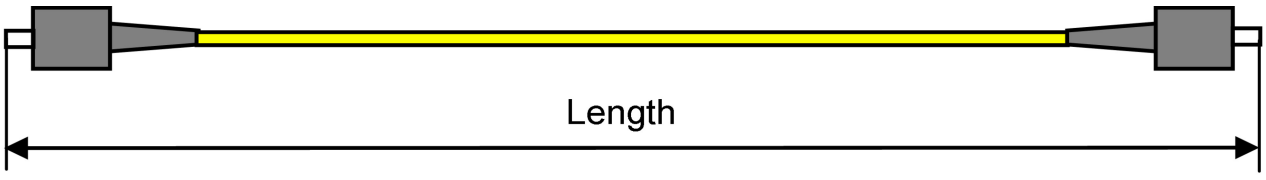
Part 14–1: Simplex and duplex cords made from simplex plugs with cylindrical ferrules, using EN 60793–2-50 **singlemode B1 or B6 fibre for Category C according to** EN 61753–1

Description		Performance	
Fibre category:	EN 60793–2-50 **Types B1 and B6**	**Application:**	**For use indoor (EN category C:controlled environment)**
Cable type:	EN 60794–2-50 EN 60794–2-51	**Attenuation grades: (random mate)**	**B: ≤ 0,12 dB mean ≤ 0,25 dB for ≥ 97 % of measurements** **C: ≤ 0,25 dB mean ≤ 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	Indoor optical fibre cables – Part 2–51: Detail specification for simplex and duplex cables for use in patchcords for controlled environment
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 series)
EN 61753–1	Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards (IEC 61753–1)
ETSI/TS 100 671	Transmission and Multiplexing; Passive optical components; Optical fibre connectors for single mode optical fibre communication systems; Common requirements and conformance testing

Outline and maximum dimensions:



1 Scope

1.1 Product definition

This standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements for an assembled singlemode cord with cylindrical ferruled connectors to 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 3.5 and Clause 4.

1.2 Intermateability of the plugs

Although all products conforming to the requirements of this standard are meant to intermate, the resulting level of random attenuation performance will only be ensured 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 ensured to be any better than the worst attenuation grade.

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

Table 1 — Ensured level of random attenuation

Plug variant / Attenuation grade		Plug 2	
		C	B
Plug 1	C	C	C
	B	C	B

1.3 Operating environment

The tests selected combined with the severities and durations are representative of an EN 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 should be predicted using a recognized reliability assessment programme.

1.5 Quality assurance

Compliance with this standard does not guarantee the manufacturing consistency of the product. This should be maintained using a recognized quality assurance programme.

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.

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

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 (IEC 60794-2-51)*

EN 61300-2-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-4: Tests - Fibre/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 61300-2-52, *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures - Part 2-52: Tests - Bending test for cords (IEC 61300-2-52)*

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 61300-3-28, *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 61300-3-35, *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 (IEC 61300-3-35)*

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

3 Description

3.1 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 (but not limited to) is 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 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 999m.

3.2 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-X-Y series

3.3 Cable

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

3.4 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.

3.5 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) manufacturers unique part number;

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

4 Variants

EN 50377 1-14 **– $XXX_1X_2X_3$** – X**$XX_4X_5X_6$ – XXX_7 – X_8XX_9**

Table 2 — XXX_1 and XXX_4 variants

Examples for Variant No. XXX_1 and XXX_4 [a]	Connector Type	EN
044	SC	50377–4-4
042	SC-APC	50377–4-2
021	FC-PC	50377–2-1
088	LSH-APC	50377–8-8
101	MU	50377–10–1
132	LX.5	50377–13–2
074	LC-PC	50377–7-4
073	LC-APC	50377–7-3
[a] Variant no. is valid for all simplex and duplex connector types within EN 50377 series. The above table only gives examples, other appropriate variants of 50377 are possible.		

162 **Table 3 — X_2 and X_5 variants**

Variant No. X_2 and X_5	**Attenuation grade (EN 61755–1)**
B	B (≤0,25 dB)
C	C (≤0,5 dB)

163 **Table 4 — X_3 and X_6 variants**

Variant No. X_3 and X_6	**Return loss grade (EN 61755–1)**
1	1 (≥60 dB mated)
2	2 (≥45 dB mated)

164 **Table 5 — XXX_7 variants**

Variant No. XXX_7	Cable length **(in metre)**	**Remark**
01 - 999	Length measured from tip to tip of connectors	Tolerances on length ± 50 mm [a]
[a] For lengths longer than 10 m, the tolerance shall be ± 5 %.		

165 **Table 6 — X_8 variants**

Variant No. X_8	**Cable Type**
1	Buffered Fibre
2	Simplex
3	Duplex Zipcord

166 **Table 7 — XX_9 variants**

Variant No. XX_9	**Maximum outside dimensions of the duplex configuration (mm)**	Nominal Cable Diameter of the single elements **(in mm)**	**Structure**
09	-	ø 0,9 ± 0,1	Buffered fibre
10	2,1 × 1,0	ø 0,9 ± 0,1	Reinforced cable
16	3,7 × 1,8	ø 1,6 ± 0,2	Reinforced cable
18	4,1 × 2,0	ø 1,8 ± 0,2	Reinforced cable
20	4,5 × 2,2	ø 2,0 ± 0,2	Reinforced cable
24	5,3 × 2,6	ø 2,4 ± 0,2	Reinforced cable
28	6,1 × 3,0	ø 2,8 ± 0,2	Reinforced cable
30	6,5 × 3,2	ø 3,0 ± 0,2	Reinforced cable