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**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 single-mode B1 or B6 fibre for Category C according to EN 61753-1

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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 B1 ou B6 de l'EN 60793-2-50 pour la catégorie C conformément à l'EN 61753-1

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

**ICS:**

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices
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**DRAFT**  
**prEN 50377-14-1**

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ICS

Will supersede EN 50377-14-1:2018

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

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l'EN 60793-2-50 pour la catégorie C conformément à l'EN  
61753 1

To be completed

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This draft European Standard is submitted to CENELEC members for enquiry.  
Deadline for CENELEC: 2019-08-30.

It has been drawn up by CLC/TC 86BXA. <https://standards.iteh.ai/catalog/standards/sist/0f8b742a-88d7-4d26-87a3-56377d14-2019>

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.

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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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## 35 **European foreword**

36 This document (prEN 50377-14-1:2019) has been prepared by CLC/TC 86BXA “*Fibre optic interconnect,*  
37 *passive and connectorised components*”.

38 This document is currently submitted to the Enquiry.

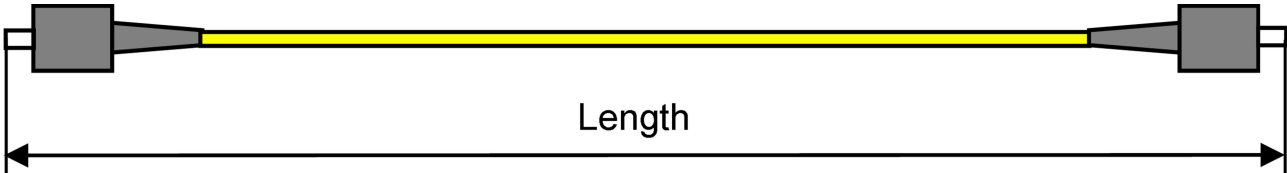
39 The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

40 This document will supersede 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 B1 or B6 fibre for Category C according to EN 61753-1	
Description	Performance
<b>Fibre category:</b> EN 60793-2-50 Types B1 and B6	<b>Application:</b> For use indoors (EN Category C: controlled environment)
<b>Cable type:</b> EN 60794-2-50 EN 60794-2-51	<b>Attenuation grades: (random mate)</b> B: $\leq 0,12$ dB mean $\leq 0,25$ dB for $\geq 97$ % of measurements C: $\leq 0,25$ dB mean $\leq 0,50$ dB for $\geq 97$ % of measurements  <b>Return loss grade: (random mate)</b> 1: $\geq 60$ dB 2: $\geq 45$ dB
<b>Related documents:</b>	
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)
<b>Outline and maximum dimensions:</b>	
	

## 41 1 Scope

### 42 1.1 Product definition

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

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

### 48 1.2 Intermateability of the plugs

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

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

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

56 **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

### 57 1.3 Operating environment

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

### 60 1.4 Reliability

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

### 64 1.5 Quality assurance

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

## 67 2 Normative references

68 The following documents are referred to in the text in such a way that some or all of their content constitutes  
69 requirements of this document. For dated references, only the edition cited applies. For undated references,  
70 the latest edition of the referenced document (including any amendments) applies.

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

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

## prEN 50377-14-1:2019 (E)

- 75 EN 60794-2-51, *Optical fibre cables - Part 2-51: Indoor cables - Detail specification for simplex and duplex*  
76 *cables for use in cords for controlled environment (IEC 60794-2-51)*
- 77 EN 61300-2-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
78 *procedures - Part 2-4: Tests - Fibre/cable retention (IEC 61300-2-4)*
- 79 EN 61300-2-5, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
80 *procedures - Part 2-5: Tests – Torsion (IEC 61300-2-5)*
- 81 EN 61300-2-22, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
82 *procedures - Part 2-22: Tests - Change of temperature (IEC 61300-2-22)*
- 83 EN 61300-2-42, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
84 *procedures - Part 2-42: Tests - Static side load for strain relief (IEC 61300-2-42)*
- 85 EN 61300-2-44, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
86 *procedures - Part 2-44: Tests - Flexing of the strain relief of fibre optic devices (IEC 61300-2-44)*
- 87 EN 61300-3-3, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
88 *procedures - Part 3-3: Examinations and measurements - Active monitoring of changes in attenuation and*  
89 *return loss (IEC 61300-3-3)*
- 90 EN 61300-3-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
91 *procedures - Part 3-4: Examinations and measurements – Attenuation (IEC 61300-3-4)*
- 92 EN 61300-3-6, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
93 *procedures - Part 3-6: Examinations and measurements - Return loss (IEC 61300-3-6)*
- 94 EN 61300-3-22, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
95 *procedures - Part 3-22: Examinations and measurements - Ferrule compression force (IEC 61300-3-22)*
- 96 EN 61300-3-34, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
97 *procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors*  
98 *(IEC 61300-3-34)*
- 99 EN 61300-3-35, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
100 *procedures - Part 3-35: Examinations and measurements - Visual inspection of fibre optic connectors and*  
101 *fibre-stub transceivers (IEC 61300-3-35)*
- 102 EN 61300-3-47, *Fibre optic interconnecting devices and passive components - Basic test and measurement*  
103 *procedures - Part 3-47: Examinations and measurements - End face geometry of PC/APC spherically*  
104 *polished ferrules using interferometry (IEC 61300-3-47)*

105 **3 Terms and definitions**

106 No terms and definitions are listed in this document.

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

- 108 • IEC Electropedia: available at <http://www.electropedia.org/>
- 109 • ISO Online browsing platform: available at <http://www.iso.org/obp>



## 110 4 Description

### 111 4.1 General

112 This document applies to both cords and work area cords.

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

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

### 119 4.2 Plug

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

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

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

### 125 4.3 Cable

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

### 127 4.4 Materials

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

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

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

### 132 4.5 Marking

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

134 a) identification of the cable assembly manufacturer;

135 b) manufacturing date code: year/week;

136 c) manufacturer's unique part number;

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

139 **5 Variants**

140 Tables 2 to 7 provide the different variants.

141 **EN 50377-14-1 – XXX<sub>1</sub>X<sub>2</sub>X<sub>3</sub> – XXX<sub>4</sub>X<sub>5</sub>X<sub>6</sub> – XXX<sub>7</sub> – X<sub>8</sub>XX<sub>9</sub>**142 **Table 2 — XXX<sub>1</sub> and XXX<sub>4</sub> variants**

Examples for Variant No. XXX <sub>1</sub> and XXX <sub>4</sub> <sup>a</sup>	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
088	LSH-APC	50377-8-8
101	MU	50377-10-1
132	LX.5	50377-13-2

<sup>a</sup> 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.

143 **Table 3 — X<sub>2</sub> and X<sub>5</sub> variants**

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

144 **Table 4 — X<sub>3</sub> and X<sub>6</sub> variants**

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

145 **Table 5 — XXX<sub>7</sub> variants**

Variant No. XXX <sub>7</sub>	Cable length (in metre)	Remark
001 - 999	Length measured from tip to tip of connectors	Tolerances on length ± 50 mm <sup>a</sup>

<sup>a</sup> For lengths longer than 10 m, the tolerance shall be ± 5 %.