



**SLOVENSKI STANDARD**  
**oSIST prEN 50551-2:2010**  
**01-april-2010**

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**Simpleksni in dupleksni kabli za vrvice - 2. del: Podrobna specifikacija in najmanjše zahteve za simpleksne robustne enorodne optične kable za povezovalne vrvice/vrvice kategorije U**

Simplex and duplex cables to be used for cords - Part 2: Detailed Specification and minimum requirements for simplex ruggedized single mode cables to be used for patchcord/cords Category U

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[SIST EN 50551-2:2014](https://standards.iteh.ai/catalog/standards/sist/1225683c-96a7-4907-a58a-241832d5e02a/sist-en-50551-2-2014)

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**ICS:**

33.180.10      (Optična) vlakna in kabli      Fibres and cables

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EUROPEAN STANDARD  
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ICS 33.180.10

English version

**Simplex and duplex cables to be used for cords -  
Part 2: Detailed Specification and minimum requirements  
for simplex ruggedized single mode cables  
to be used for patchcord/cords Category U**

To be completed

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This draft European Standard is submitted to CENELEC members for CENELEC enquiry.  
Deadline for CENELEC: 2010-07-23.

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

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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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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

1

## Foreword

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This draft European Standard was jointly prepared by the Technical Committee CENELEC TC 86A, Optical fibres and optical fibre cables, and the Technical Committee CENELEC TC 86BXA, Fibre optic interconnect, passive and connectorised components. It is submitted to the CENELEC enquiry.

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**Contents**

6		
7		
8	<b>1</b>	<b>Scope ..... 4</b>
9	<b>2</b>	<b>Cable description ..... 5</b>
10	<b>3</b>	<b>Optical fibres ..... 7</b>
11	3.1	Category A1a through A1b multimode optical fibres ..... 7
12	3.2	Single mode optical fibre ..... 8
13	<b>4</b>	<b>Buffer ..... 8</b>
14	<b>5</b>	<b>Cable construction ..... 9</b>
15	5.1	General ..... 9
16	5.2	Mechanical and environmental tests ..... 10
17		

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18 **1 Scope**

19 This detailed specification describes parameters that can be considered for terminating the simplex ruggedized  
20 single mode cables with connectors in different communication applications of category *U* (uncontrolled).

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21 **2 Cable description**

(1) Prepared by	CLC/TC 86BXA	(2) Document No : Issue : Date :
(3) Available from :	(4) Generic Specification : Sectional Specification : Family Specification : Product Specification :	IEC 60794-1 IEC 60794-2 IEC 60794-2-50 IEC 60794-2-51 (in progress)
(5) Additional references :		
(6) Cable description : Simplex ruggedized single mode cables to be used for patchcords/cords Category <i>U</i>		
(7) Cable construction :		
<u>Optical fibres</u>		B1.1, B1.3
<u>Fibre count</u>		1
<u>Construction</u> - Tight or semi-tight secondary coating - Strength Elements – non metallic - Strength Elements - metallic <u>Lay-up</u> Buffer - Material - Nominal outer diameter Sheath - Material - Maximum diameter - Nominal thickness - Thickness tolerances - Colour Additional armouring (if required) - Non-metallic armouring - Metallic armouring <u>Marking identification</u> - Customer requirement		Tight secondary coating Strength Elements – aramid yarns  900 um LSOH 3,0 mm ± 0,2 mm Yellow None

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(8) Application information	
Application (work area cord, equipment cord, patchcord, etc.)	Work area cord, equipment cord, patchcord
Maximum tensile load	min 150 N Max fibre strain 0,45 % at max < Load short term load (installation)
Number of repeated bending	500 cycles
Minimum bending radius for operation	30 mm
Minimum bending radius for installation	60 mm because of bending and tension at the same time (dynamic)
Temperature range :	
- Transport and storage	-45 °C to +70 °C
- Installation	-5 °C to +40 °C
- Operation	-25 °C to +70 °C
Delivery cable length	2 000 m
- Length tolerance	1 %
Fire performance	IEC 60332-3-24 IEC 61034-1/2 and IEC 60754-1/2

25

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Draft for comment



26 **3 Optical fibres**27 **3.1 Category A1a through A1b multimode optical fibres**

(9a) Characteristics	(10) Family specification	(11) Requirements	(12) Test methods	(13) Remarks
Uncabled optical fibre	EN 60793-2-10, A1a.1, A1a.2, A1b	N/A		
Attenuation coefficient (cabled fibres) at 850 nm at 1 300 nm		N/A N/A N/A	EN 60793-1-40	
Minimal Modal Bandwidth (uncabled fibres) at 850 nm at 1 300 nm		N/A N/A N/A	EN 60793-1-41	
Numerical aperture		N/A	EN 60793-1-43	
Macro bending loss		N/A	EN 60793-1-47	
Core/cladding concentricity		N/A	EN 60793-1-20	
Core non-circularity		N/A	EN 60793-1-20	
Cladding non-circularity		N/A	EN 60793-1-20	
Core diameter		N/A	EN 60793-1-20	
Core diameter tolerance		N/A	EN 60793-1-20	
Cladding diameter		N/A	EN 60793-1-20	
Cladding diameter tolerance		N/A	EN 60793-1-20	

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29 **3.2 Single mode optical fibre**

(9b) Characteristics	Family specification (10)	Requirements (11)	Test methods (12)	Remarks (13)
Uncabled optical fibre	EN 60793-2-50, B1.1, B1.3, B6a, B6b	EN 60793-2-50, B1.1, B1.3		
Attenuation coefficient (cabled fibres) at 1 310 nm at 1 383 nm (B1.3, B6a) at 1 550 nm and at 1 625 nm, etc. Attenuation Discontinuities at 1 310 nm and 1 550 nm		0,4 dB/km 0,4 dB/km 0,3 dB/km 0,4 dB/km None	EN 60793-1-40  EN 60793-1-40	
Cabled fibre cut-off wavelength, $\lambda_{cc}$		1250 nm	EN 60793-1-44	
Mode field nominal diameter and tolerance - 1 310 nm		8,9 $\mu\text{m}$ to 9,5 $\mu\text{m}$ (total range)	EN 60793-1-45	
Core/cladding concentricity		< 0,6 $\mu\text{m}$	EN 60793-1-20	
Cladding non-circularity		< 1 %	EN 60793-1-20	
Cladding diameter		125 $\mu\text{m}$	EN 60793-1-20	
Cladding diameter tolerance		$\pm 1 \mu\text{m}$	EN 60793-1-20	
Primary coating nominal diameter		245 $\mu\text{m}$	EN 60793-1-21	
Primary coating nominal diameter tolerance		$\pm 10 \mu\text{m}$	EN 60793-1-21	

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31 **4 Buffer**

(10) Characteristics	IEC 60794-2, Clause	Family requirements	Test methods	Remarks
<u>Construction:</u> - tight - semi-tight		-Tight		
<u>Filler</u>		None		
<u>Strippability:</u> - <u>tight</u> - <u>semi-tight</u>		Tight tube 50 mm – one pass with a force of up to 15 N	IEC 60794-2-50 E21	
<u>Shrinkage:</u> - <u>tight</u> - <u>semi-tight</u>		N/A		