SLOVENSKI STANDARD
oSIST prEN 50377-4-2:2009

01-januar-2009

Konektorski sestavi in povezovalne komponente za optiļ ne komunikacijske sisteme - Specifikacija izdelka - 4-2. del: Tip SC/APC simplex 8Ą zaključ en z enorodnim vlaknom po IEC 60793-2-50 kategorij B1.1 in B1.3 s tulko iz polnega cirkonija kategorije U

Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 4-2: Type SC/APC simplex 8° terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, with full zirconia ferrule Category U

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33.180.20	Povezovalne naprave za optiļ na vlakna	Fibre optic interconnecting devices

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Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 4-2: Type SC/APC simplex 8° terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, with full zirconia ferrule Category U

To be completed

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This draft European Standard is submitted to CENELEC members for CENELEC enquiry.
Deadline for CENELEC: 2009-03-27.

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.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

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

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

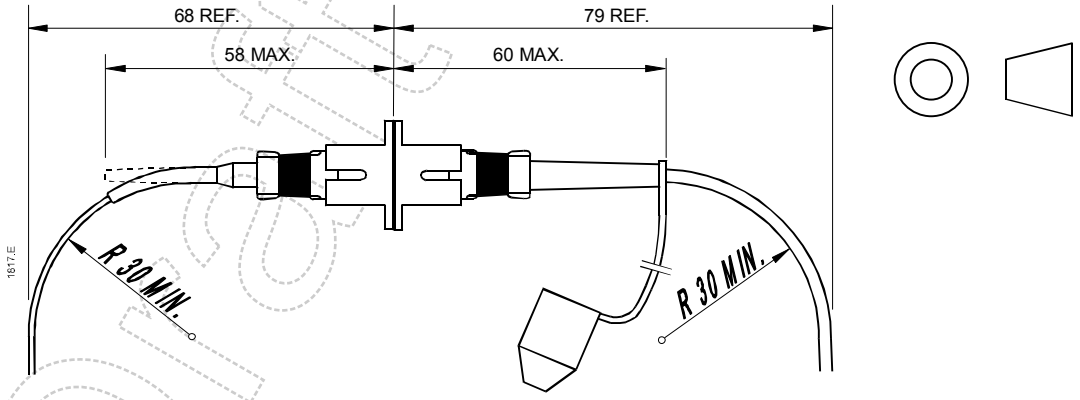
Part 4-2: Type SC/APC simplex 8° terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, with full zirconia ferrule Category U

Description		Performance	
Coupling mechanism:	Push-pull	Application:	For use in EN Category U (uncontrolled environment)
Configuration:	Plug/adaptor/plug	Attenuation grades: (random mate)	B: ≤ 0,12 dB mean ≤ 0,25 dB for > 97 % of measurements
Fibre category:	EN 60793-2-50 Types B1.1 and B1.3		C: ≤ 0,25 dB mean ≤ 0,50 dB for > 97 % of measurements
Cable type:	See Table 3	Return loss grade: (random mate)	1: ≥ 60 dB mated ≥ 55 dB unmated

Related documents:

EN 60794-2	Optical fibre cables – Part 2: Indoor cables – Sectional specification (IEC 60794-2)
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)
EN 61754-4	Fibre optic connector interfaces – Part 4: Type SC connector family (IEC 61754-4)
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)
EN 61755-3-2 [1)]	Fibre optic connector optical interfaces – Part 3-2: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrules for 8 degrees angled-PC single mode fibres (IEC 61755-3-2, mod.)
ETSI EN 300 019 series	Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment
ETSI TS 100 671	Transmission and Multiplexing (TM); Passive optical components; Optical fibre connectors for single mode optical fibre communication systems; Common requirements and conformance testing

Outline and maximum dimensions:



1) At draft stage.

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1 Scope

1.1 Product definition

This European Standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements which a connector terminated with cylindrical zirconia 8 degree angled PC ferrule and assembled singlemode resilient alignment sleeve SC-APC simplex connector set (plug/adaptor/plug), adaptor and patchcord must meet in order for it to be categorised as an EN standard product.

Since different variants and grades of performance are permitted, product marking details are given in 3.5.

1.2 Intermateability

Although all products conforming to the requirements of this standard will 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, the resulting level of attenuation cannot be assured to be any better than the worst attenuation grade.

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

Table 1 – Ensured level of random attenuation

Plug variant / Attenuation grade	C	B
C	C	C
B	C	B

1.3 Operating environment

The tests selected combined with the severities and durations are representative of a Category U environment described in EN 61753-1.

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 recognised 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 recognised quality assurance programme.

2 Normative references

The following referenced documents are indispensable for the application 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 60793-2-50	Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres (IEC 60793-2-50)
EN 61300-2-1	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-1: Tests – Vibration (sinusoidal) (IEC 61300-2-1)
EN 61300-2-2	Part 2-2: Tests – Mating durability (IEC 61300-2-2)
EN 61300-2-4	Part 2-4: Tests – Fibre/cable retention (IEC 61300-2-4)
EN 61300-2-5	Part 2-5: Tests – Torsion/twist (IEC 61300-2-5)
EN 61300-2-6	Part 2-6: Tests – Tensile strength of coupling mechanism (IEC 61300-2-6)
EN 61300-2-7	Part 2-7: Tests – Bending moment (IEC 61300-2-7)
EN 61300-2-12:2005	Part 2-12: Tests – Impact (IEC 61300-2-12:2005)
EN 61300-2-17	Part 2-17: Tests – Cold (IEC 61300-2-17)
EN 61300-2-18	Part 2-18: Tests – Dry heat – High temperature endurance (IEC 61300-2-18)
EN 61300-2-22	Part 2-22: Tests – Change of temperature (IEC 61300-2-22)
EN 61300-2-26	Part 2-26: Tests – Salt mist (IEC 61300-2-26)
EN 61300-2-27	Part 2-27: Tests – Dust – Laminar flow (IEC 61300-2-27)
EN 61300-2-42	Part 2-42: Tests – Static side load for connectors (IEC 61300-2-42)
EN 61300-2-44	Part 2-44: Tests – Flexing of the strain relief of fibre optic devices (IEC 61300-2-44)
EN 61300-2-46	Part 2-46: Tests – Damp heat cyclic (IEC 61300-2-46)
EN 61300-3-6:2003	Part 3-6: Examinations and measurements – Return loss (IEC 61300-3-6:2003)
EN 61300-3-10	Part 3-10: Examinations and measurements – Gauge retention force (IEC 61300-3-10)
EN 61300-3-15	Part 3-15: Examinations and measurements – Dome eccentricity of a convex polished ferrule endface (IEC 61300-3-15)
EN 61300-3-16	Part 3-16: Examinations and measurements – Endface radius of spherically polished ferrules (IEC 61300-3-16)
EN 61300-3-23	Part 3-23: Examination and measurements – Fibre position relative to ferrule endface (IEC 61300-3-23)
EN 61300-3-28	Part 3-28: Examinations and measurements – Transient loss (IEC 61300-3-28)
EN 61300-3-34	Part 3-34: Examinations and measurements – Attenuation of random mated connectors (IEC 61300-3-34)
EN 61300-3-42	Part 3-42: Examinations and measurements – Attenuation of single mode alignment sleeves and or adaptors with resilient alignment sleeves (IEC 61300-3-42)
EN 61753-1	Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards (IEC 61753-1)
ISO 8015	Technical drawings – Fundamental tolerancing principle

3 Description

The SC-APC connector is a single position plug connector set of plug/adaptor/plug configuration characterised by a cylindrical, spring loaded butting ferrule of 2,5 mm nominal diameter and a latched push-pull coupling mechanism. The optical alignment mechanism of the connectors is of a resilient sleeve style.

3.1 Plug

The plug features a cylindrical zirconia ceramic ferrule and a push-pull coupling mechanisms. The plug housing has a single male key, which is used to limit the relative rotation between mated plugs. A cover (dust cap) to protect the ferrule end face when the connector is in the unmated condition shall be provided.

3.2 Adaptor

The adaptor has a zirconia ceramic resilient alignment sleeve. The mounting style is a rectangular flange – simplex.

Covers (dust caps) are provided to protect each port of the adaptor.

3.3 Materials

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

3.4 Dimensions

Outline dimensions and other dimensions necessary to ensure intermateability or which affect performance are specified. All other dimensions are left to the discretion of the manufacturer. Where the mating face limit dimensions are not in agreement with an EN Interface Standard this is clearly stated.

3.5 Colour and marking

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

- identification of manufacturer;
- manufacturing date code: year/week;
- manufacturers part number;
- variant identification number.

The preferred colour scheme is given in Table 2.

Table 2 – Preferred colour scheme

Delatch housing SC-APC plug	Adaptor
Green, RAL 6018	Green, RAL 6018

131 # 4 Variants

132 ## 4.1 Terminated plug

133 The defined fibre/cable variants are given in Table 3.

134 **Table 3 – Plug variants**

E	N	5	0	3	7	7	-	4	-	2	-	*	*	-	*	1

Variant No.	Fibre/cable mm	Structure	Note
01	0,7 - 1,4	Buffered fibre	8 degrees
02	2,0 ± 0,2	Reinforced cable	8 degrees
03	2,5 ± 0,2	Reinforced cable	8 degrees
04	2,8 ± 0,2	Reinforced cable	8 degrees
05	3,0 ± 0,2	Reinforced cable	8 degrees
06	3,2 ± 0,2	Reinforced cable	8 degrees

Variant	Attenuation grade
B	B
C	C

Code	Return loss grade
1	1

135

136 ## 4.2 Adaptor

137 The defined adaptor variants are given in Table 4.

138 **Table 4 – Adaptor variants**

E	N	5	0	3	7	7	-	4	-	2	-	*	*	*

Variant number	Format
A01	Rectangular flange - simplex

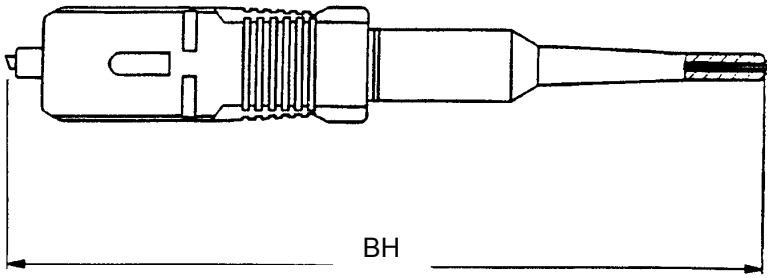
139

5 Dimensional requirements

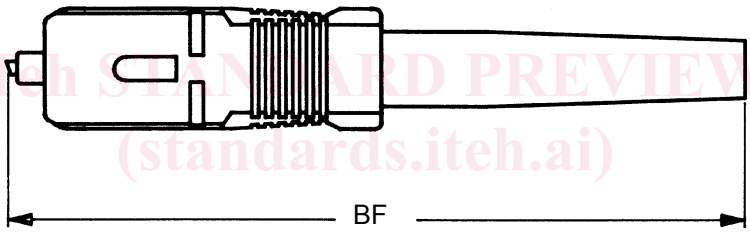
5.1 Outline dimensions

5.1.1 Plug

Variant No. 01



Variant No. 02 – 06



Ref.	Dimensions min.	mm max.	Note
BH		58	
BF		60	

Figure 1 – Outline dimensions – Plug