ICS 33.180.20 SLOVENSKÁ TECHNICKÁ NORMA Júl 2014

STN	**Súbory konektorov a spájacie prvky pre optovláknové komunikačné systémy. Špecifikácia výrobku. Časť 17-1: Typ FPFT (leštený vo výrobe a ukončovaný v teréne) simplex konektor vo výrobe ukončený vláknom kategórie B1.3 podľa EN 60793-2-50 a v teréne montovaný na jednovidové vlákna kategórie B1.3 alebo B6a_1 alebo B6a_2, podľa IEC 60793-2-50, kategória C.**	**STN EN 50377-17-1** 35 9242

Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 17-1: Type FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto IEC 60793-2-50 category B1.3 or B6a_1 or B6a_2 singlemode fibre, category C

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Obsahuje: EN 50377-17-1:2013

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50377-17-1

November 2013

ICS 33.180.20

English version

Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 17-1: Type FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto IEC 60793-2-50 category B1.3 or B6a_1 or B6a_2 singlemode fibre, category C

Jeux de connecteurs et composants d'interconnexion à utiliser dans les systèmes de communication par fibres optiques - Spécifications de produits - Partie 17-1: Connecteur simplex de type FPFT (poli en usine et monté sur le terrain) raccordé en usine à une fibre de la catégorie B1.3 selon l'EN 60793 2 50 et monté sur le terrain sur une fibre unimodale de catégorie B1.3 ou B6_a1 ou B6_a2 selon la CEI 60793 2 50, Catégorie C

Steckverbindersätze und Verbindungselemente für Lichtwellenleiter-Datenübertragungssysteme - Produktnormen - Teil 17-1: Bauart FPFT- (vorpolierter und feldkonfigurierbarer) Simplex-Steckverbinder mit einer Faser der Kategorie B1.3 nach IEC 60793-2-50 vorkonfektioniert und feldmontierbar an Einmodenfasern der Kategorien B1.3 oder B6a_1 oder B6a_2 nach IEC 60793-2-50 für Kategorie C

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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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Foreword

This document (EN 50377-17-1:2013) 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)	2014-08-26
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2016-08-26

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

EN 50377 is composed of the following parts:

— EN 50377-2 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-3-1, *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications — Part 3-1: Type SG terminated on IEC 60793-2-10 category A1a, A1b or equivalent multimode fibre for category C*;

— EN 50377-4 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-5-1, *Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications — Part 5-1: Type EC terminated on IEC 60793-2 category B1.1 singlemode fibre*;

— EN 50377-6 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-7 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-8 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-9 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-10 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications*;

— EN 50377-11-1, *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications — Part 11-1: Type MF terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre for category C*;

— EN 50377-13 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*;

— EN 50377-14-1, *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications — Part 14-1: Cords with IEC 60793-2-50 singlemode category B1.1 and B1.3 fibre for category C*;

— EN 50377-15-1, *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications — Part 15-1: Type MPO with 12-fibre PPS ferrules terminated on IEC 60793-2 category A1a multimode fibre for 50/125 micron multimode fibre*;

— EN 50377-16-1, *Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications — Part 16-1: Type LF3 APC simplex terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre with titanium composite ferrule for category C*;

— EN 50377-17-1, *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications — Part 17-1: Type FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto IEC 60793-2-50 category B1.3 or B6a_1 or B6a_2 singlemode fibre, category C* [the present document];

— prEN 50377-17-2[1)], *Connector sets and Interconnect components to be used in optical fibre communication systems — Product specifications — Part 17-2: Type FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto tight jacket cable containing IEC 60793-2-50 category B1.3 or B6a1 or B6a 2 single mode fibre (with restricted MFD), Category C*.

1) Currently under development.

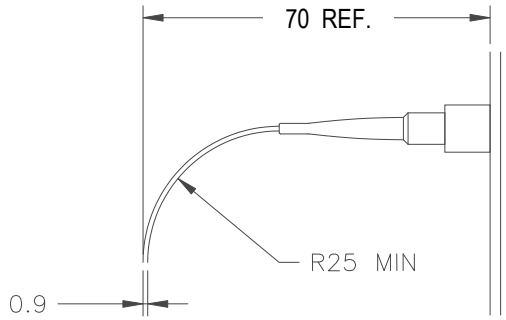
Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications	
Part 17-1: Type FPFT (factory polished field terminated) simplex connector factory terminated with EN 60793-2-50 category B1.3 fibre and field mounted onto IEC 60793-2-50 category B1.3 or B6a_1 or B6a_2 singlemode fibre, category C	
	Performance
Configuration: 1) FPFT Plug/adaptor/plug and/or 2) FPFT Plug/adaptor/ FPFT plug	Application: For use in IEC Category C Attenuation grades: (random mate) Configuration 1 FPFT/50377 B_fB: ≤ 0,20 dB mean ≤ 0,40 dB for ≥ 97 % of measurements C_fC: ≤ 0,35 dB mean ≤ 0,70 dB for ≥ 97 % of measurements
Fibre category: EN 60793-2-50 Types B1.3, B6a_1 or B6a_2 (with restricted MFD)	Configuration 2 FPFT/FPFT B_fB_f: ≤ 0,35 dB mean ≤ 0,55 dB for ≥ 97 % of measurements C_fC_f: ≤ 0,40 dB mean ≤ 0,75 dB for ≥ 97 % of measurements
Cable type: Primary or secondary coated fibre 250 µm or up to 900 µm See Table 2	Return loss grade: 1: ≥ 60 dB mated and ≥ 55 dB unmated 2: ≥ 45 dB 3: ≥ 35 dB

Related documents:	
prEN 50411-3-5 [2)]	*Fibre organisers and closures to be used in optical fibre communication systems — Product specifications — Part 3-5: Wall outlet*
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	*Optical fibre cables — Part 2: Indoor cables — Sectional specification (IEC 60794-2)*
EN 61300 (all parts)	*Fibre optic interconnecting devices and passive components — Basic test and measurement procedures (IEC 61300, all parts)*
EN 61753-1	*Fibre optic interconnecting devices and passive components performance standards — Part 1: General and guidance for performance standards (IEC 61753-1)*

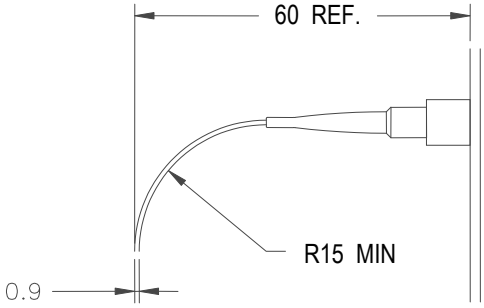
2) At draft stage.

Outline and maximum dimensions (mm):

For B1.3 fibres



For B6_a1 and B6_a2 fibres



1 Scope

1.1 Product definition

This European Standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements that a **F**actory **P**olished **F**ield **T**erminated (FPFT) single mode simplex connector set (plug adaptor plug), adaptor will meet in order for it to be categorised as an EN standard product.

The FPFT is designed for either fusion or mechanical splice methods. The performance is specified for the mated combination between a FPFT plug and an EN standardised plug from the EN 50377 series (configuration 1) or between two FTFP plugs (configuration 2). The fibre specified inside the FPFT plug in this European Standard is standard single mode fibre with low water peak as specified as B1.3, which is field, mated to B1.3 fibre or bend insensitive single mode fibre specified as B6_a1 or B6_a2 in EN 60793-2-50. Mixing standard and bend insensitive fibres in a connection causes a considerable intrinsic attenuation due to mode field diameter mismatch.

These connectors are intended to be installed inside wall outlets or other fibre organisers, and are therefore considered as being in a “protected environment” and are terminated onto either 250 µm primary coated or up to 900 µm buffered fibres.

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

1.2 Intermateability

1.2.1 Mechanical intermateability

In order to meet mechanical performance requirements, the FPFT plug will meet the optical, environmental and mechanical requirements as stated in this European Standard and the mated plug will meet the all requirements of the relevant EN 50377 series for category C. Intermateability between the FPFT plug and its standard EN 50377 counterpart can only be guaranteed when both plugs meet the same EN 50377 product specification mechanical connector interface dimensions and endface geometry requirements.

1.2.2 Optical intermateability

In EN 50377 product specifications, the random mated performance is calculated when the two connector plugs have been terminated with single-mode fibres using a worst case MFD. The specified MFD range in fibre standards (e.g. B1.3 fibres) is 8,0 µm to 10,1 µm at 1 310 nm, which causes 0,22 dB worst case intrinsic attenuation. However, in EN 50377 product specification series, the MFD is limited to 8,9 µm to 9,5 µm at 1 310 nm. In this European Standard, in order to achieve the random mate performance values, the total MFD range of bend insensitive fibres, e.g. B6a fibres, is limited to 8,5 µm to 9,5 µm at 1 310 nm. This causes a worst case intrinsic attenuation of 0,05 dB.

1.3 Operating environment

The tests selected, combined with the severities and durations, are representative of a category C environment as defined in EN 61753-1. The FPFT plugs are terminated on to 250 µm primary coated or up to 900 µm buffered fibres and are specified to be located in a protected environment.

1.4 Reliability

Whilst the anticipated service life expectancy of the product in this environment is 20 years, compliance with this European 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 European 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 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 (all parts), *Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications*

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, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-2: Tests — Mating durability (IEC 61300-2-2)*

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 61300-2-12, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-12: Tests — Impact (IEC 61300-2-12)*

EN 61300-2-17, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-17: Tests — Cold (IEC 61300-2-17)*

EN 61300-2-18, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-18: Tests — Dry heat — High temperature endurance (IEC 61300-2-18)*

EN 61300-2-19, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-19: Tests — Damp heat (steady state) (IEC 61300-2-19)*

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 61300-3-4, *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 61300-3-15, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-15: Examinations and measurements — Dome eccentricity of a convex polished ferrule endface (IEC 61300-3-15)*

EN 61300-3-16, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-16: Examinations and measurements — Endface radius of spherically polished ferrules (IEC 61300-3-16)*

EN 61300-3-23, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-23: Examinations and measurements — Fibre position relative to ferrule endface (IEC 61300-3-23)*

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)*