SLOVENSKI STANDARD
SIST EN 50411-3-8:2016

01-marec-2016

Optični delilniki in kabelske spojnice za optične komunikacijske sisteme - Specifikacije izdelka - 3-8. del: Konzola za upravljanje optičnih sistemov, omarica terminalske opreme tipa 1 za kategorijo C

Fibre organizers and closures to be used in optical fibre communication systems - Product specifications - Part 3-8: Fibre management system, terminal equipment box type 1 for category C

LWL-Spleißkassetten und -Muffen für die Anwendung in LWL-Kommunikationssystemen - Produktspezifikationen - Teil 3-8: Faser Management System, Kasten für Endeinrichtungen Typ 1 für Kategorie C

Organiseurs et boîtiers de fibres destinés à être utilisés dans les systèmes de communication par fibres optiques - Spécifications de produits - Partie 3-8: Système de gestion des fibres, boîtier d'équipement terminal de type 1 pour la catégorie C

Ta slovenski standard je istoveten z: **EN 50411-3-8:2016**

ICS:

33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices

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English Version

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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 (EN 50411-3-8:2016) 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)	2016-10-12
latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2018-10-12

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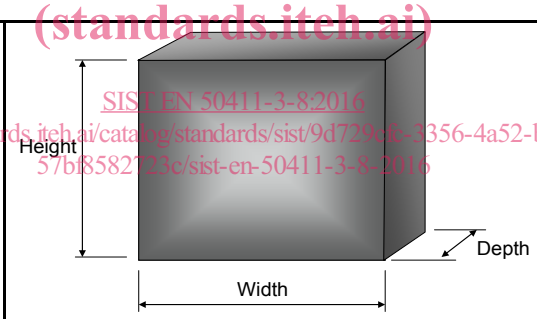
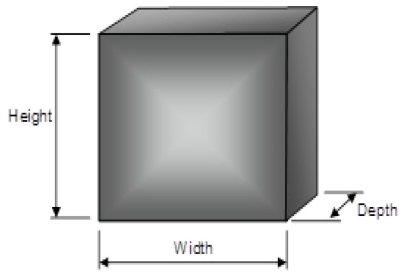
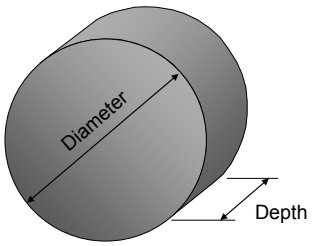
Fibre organizers and closures to be used in optical fibre communication systems – Product specifications

Part 3-8: Fibre management system, terminal equipment box type 1 for category C

Description		Performance	
Construction:	Wall mounted box	**Applications**:	
Cable Fixing:	Mechanical	Optical Fibre Terminal Equipment Box including the ONT/CPE for indoor controlled environments EN 61753-1 Category C	
Connectors:	EN 50377 series EN 60603-7 Series		
Fibre types:	EN 60793-2-50 B1 and B6	**Sealing performance:**	IP 40
Fibre management:	Integrated in box		

Related documents:

EN 60529	Degrees of protection provided by enclosures (IP Code) (IEC 60529)
EN 60793-2-50	Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres (IEC 60793-2-50)
EN 61753-1	Fibre optic interconnecting devices and passive components – Part 1: General and guidance for performance standard (IEC 61753-1)
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 series)

Shape	Maximum outline dimensions
Rectangular shape 	Width: 300 mm Height: 150 mm Depth: 100 mm
Square shape 	Width: 210 mm Height: 210 mm Depth: 50 mm
Circular 	Diameter: 250 mm Depth: 100 mm

1 Scope

1.1 Product definition

This European Standard specifies the dimensional, optical, mechanical and environmental performance requirements of a Terminal Equipment Boxes for the FTTX networks. The Terminal Equipment Box will house the ONT/CPE (electronics) and it protects the optical fibres, splices and connectors from direct contact with the user. Optionally it can contain the network test interface, the power supply and the batteries.

The performance of the electronics, power supply or batteries are not part of this document. These are covered by another EN document, EN 50700.

This specification contains the initial, start of life optical, mechanical and environmental performance requirements of the optical fibre termination in a Terminal Equipment Box, in order for it to be categorized as an EN standard product.

1.2 Operating environment

The tests selected combined with the severity and duration is representative of indoor and outside plant for above ground environments defined by:

EN 61753-1 Category C Controlled environment

1.3 Reliability

Whilst the anticipated service life expectancy of the product in this environment is 20 years, compliance with this specification does not guarantee the reliability of the product. This should be predicted using a recognised reliability assessment programme.

1.4 Quality assurance

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

1.5 Allowed fibre types

All EN 60793-2-50 fibres can be stored in the Terminal Equipment Box with a minimum storage radius of 20 mm (up to a length of maximum 2 m).

Smaller storage radii down to 15 mm are possible with the EN 60793-2-50 B6_a fibre types, but in this case the reduction in mechanical reliability should be taken into account (see Annex A).

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 50700, *Information technology — Premises distribution access network (PDAN) cabling to support deployment of optical broadband networks*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 60695-11-10, *Fire hazard testing — Part 11-10: Test flames — 50 W horizontal and vertical flame test methods (IEC 60695-11-10)*

EN 60754-1, *Test on gases evolved during combustion of materials from cables — Part 1: Determination of the halogen acid gas content (IEC 60754-1)*

EN 60793-2-50, *Optical fibres — Part 2-50: Product specifications — Sectional specification for class B single-mode fibres (IEC 60793-2-50)*

EN 60825-2, *Safety of laser products — Part 2: Safety of optical fibre communication systems (OFCS) (IEC 60825-2)*

EN 61034-2, *Measurement of smoke density of cables burning under defined conditions — Part 2: Test procedure and requirements (IEC 61034-2)*

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 61300-2-4, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-4: Tests — Fibre/cable retention (IEC 61300-2-4)*

EN 61300-2-9, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-9: Tests — Shock (IEC 61300-2-9)*

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 61300-2-22, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-22: Tests — Change of temperature (IEC 61300-2-22)*

EN 61300-2-33, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-33: Tests — Assembly and disassembly of fibre optic mechanical splices, fibre management systems and closures (IEC 61300-2-33)*

EN 61300-3-1, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-1: Examinations and measurements — Visual examination (IEC 61300-3-1)*

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 61300-3-28, *Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-28: Examinations and measurements — Transient loss (IEC 61300-3-28)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
fibre management system
system to control fibre routing from the incoming to the out-going fibres, containing one or more splice cassettes and additional functional elements, and which provides a means for routing, storing and protecting of fibre splices, connectors or other passive optical devices in a predetermined order, from one cable sheath opening to another

3.1.2
external network test interface
ENTI
test point which defines the service maintenance boundary of an access network at which external service provision may be assessed and which can be associated with protection devices

3.1.3
microduct system
system that provides for routing air blown fibres or microduct fibre units, between hollow conduits (microducts), and interconnects the microducts by use of pneumatic connectors, tube welding, crimp connectors or push on connectors

3.2 Abbreviations

FMS Fibre Management System
CPE Customer Premises Equipment
ONT Optical Network Terminal
ENTI External Network Test Interface
CATV Cable Television

4 Description

4.1 Optical fibre terminal equipment box housing

The terminal equipment box provides:

— facilities for mounting and protection of stored fibres, connectors, network test interface ENTI (optional), electronics (ONT/CPE), power supply (optional) and batteries (optional),

— access by user to the electrical data, CATV and telephone outputs,

— a protected fibre management system for storing fibres, connectors and splices,

— sealing of input and output optical and electrical cables.

This also includes terminal equipment boxes used for microduct cable or fibre. The design of the terminal equipment housing shall allow the jointing or termination of minimum one incoming cable to the specified number of optical connectors.

Examples of typical terminal equipment applications are given in Figure 1.

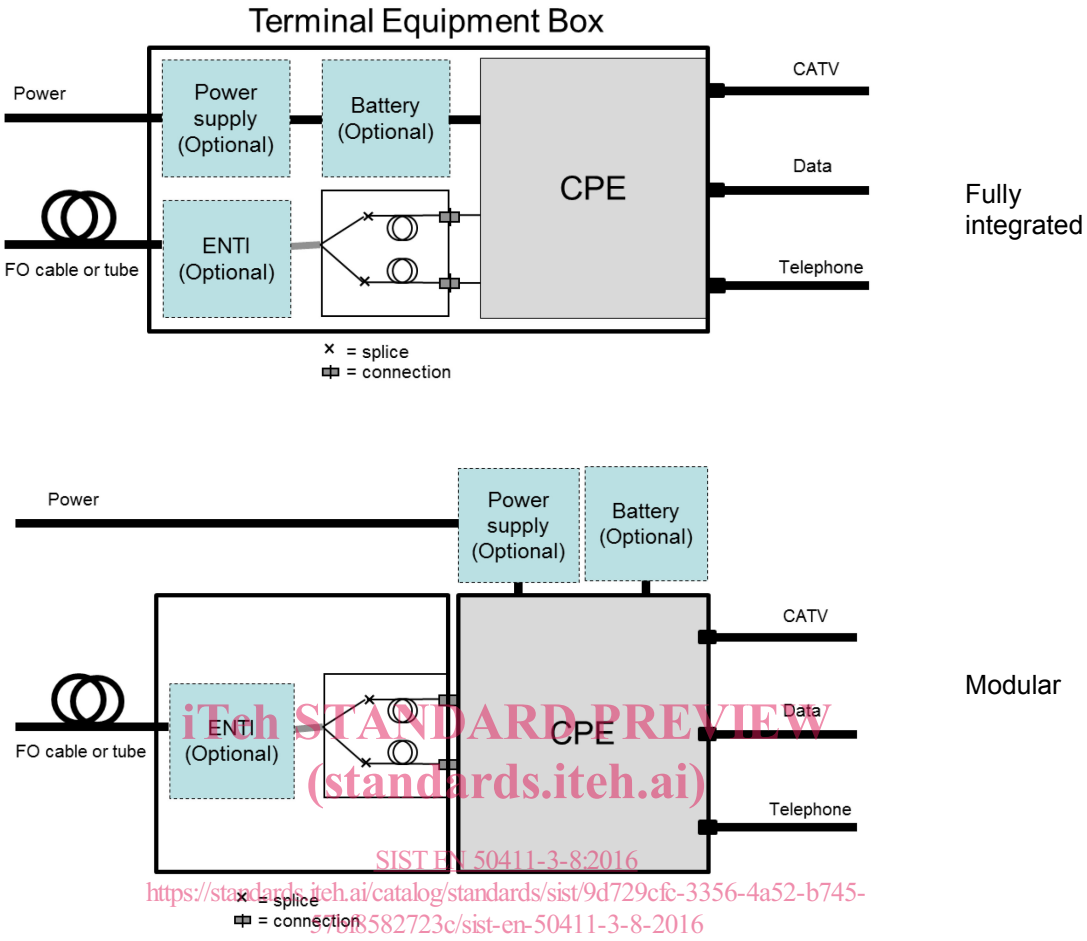


Figure 1 — Examples of terminal equipment applications

4.2 Cable fixing

Cable or microduct fixing will be secured by means of mechanical attachment. Axial movement of the fibre with respect to the microduct shall be taken into account.

4.3 FMS system

The fibre management system provides means for routing, storing and protecting optical fibre and/or fibre splices, connectors or other passive optical devices.

4.4 Materials

All materials that are likely to come in contact with personnel shall meet appropriate health and safety regulations.

The Terminal Equipment Box materials shall be compatible with each other and with the materials of the cables and/or microducts.

All components of the wall outlet shall be resistant to solvents and degreasing agents that are typically used to clean and degrease fibres and cables.

Metallic parts shall be resistant to the corrosive influences they may encounter during the lifetime of the product.

4.5 Laser safety

Laser safety shall be in accordance with EN 60825-2.

4.6 Marking and identification

Marking/identification of the 'variant number' (see Clause 5) to be on the packaging label along with the following:

a) identification of supplier;

b) manufacturing date code: year / month.

5 Variants

Table 1 — Optical fibre terminal equipment box Type 1, for category C - variants

EN 50411-3-8– C- X_1 – X_2 –X X_3 – X_4 – X_5 – XX_6– X_7– X_8– X_9

Variant No. X_1	Mounting location
O	On wall
T	On surface trunking
F	Flush (in wall)
M	Multi purpose

Variant No. X_2	Cable entry ports
S	Side entries more than one
B	Back entries more than one
D	Dual - back and side entries more than one

Variant No. XX_3	Minimum fibre storage radius
15	15 mm storage radius for B6 fibre only
20	20 mm storage radius for all fibre types B1.1, B1.3 and B6 or for use in EN 50700 premises distribution access network (PDAN) cabling.

Variant No. X_4	Colour of terminal equipment box outer housing
1	White
2	Grey
3	Brown
4	User defined