



SLOVENSKI STANDARD
oSIST prEN 50411-3-8:2014
01-julij-2014

**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

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33.180.20	Povezovalne naprave za optična vlakna	Fibre optic interconnecting devices
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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

To be completed

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

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2014-10-10.

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.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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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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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

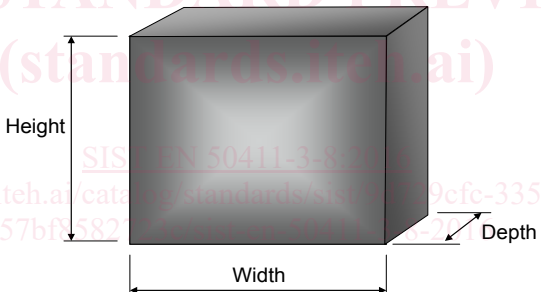
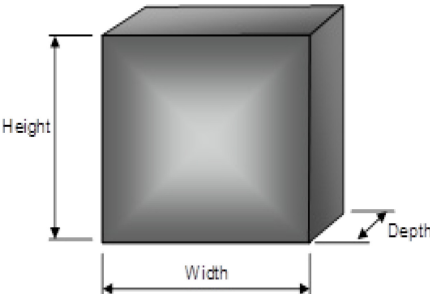
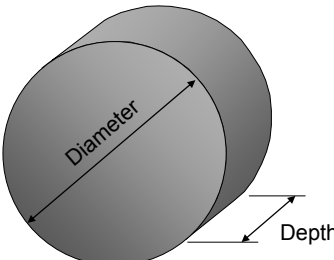
60 This document [prEN 50411-3-8:2014] has been prepared by CLC/TC 86BXA, Fibre optic interconnect,
61 passive and connectorised components.

62 This document is currently submitted to the Enquiry.

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Fibre organisers 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 Cable Fixing: Mechanical Connectors: EN 50377 series EN 60603-7 Series Fibre types: EN 60793-2-50 B1 and B6 Fibre management: Integrated in box	Applications: Optical Fibre Terminal Equipment Box including the ONT/CPE for indoor controlled environments EN 61753-1 Category C Sealing performance: IP40	
Related documents:		
EN 60529	Degrees of protection provided by enclosures (IP code)	
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

65 **1 Scope**

66 **1.1 Product definition**

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

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

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

76 **1.2 Operating environment**

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

79 IEC 61753-1 Category C Controlled environment

80 **1.3 Reliability**

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

84 **1.4 Quality assurance**

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

87 **1.5 Allowed fibre and cable types**

88 All EN 60793-2-50 fibres can be stored in the Terminal Equipment Box with a minimum storage radius of
89 20 mm (up to a length of maximum 2 m).

90 Smaller storage radii down to 15 mm are possible with the EN 60793-2-50 B6A fibre types, but in this case
91 the reduction in mechanical reliability should be taken into account (see Annex A).

92 **2 Normative references**

93 The following documents, in whole or in part, are normatively referenced in this document and are
94 indispensable for its application. For dated references, only the edition cited applies. For undated references,
95 the latest edition of the referenced document (including any amendments) applies.

96	prEN 50700	Information technology – Premises distribution access network (PDAN) cabling to support
97		deployment of optical broadband networks
98	EN 60529	<i>Degrees of protection provided by enclosures (IP code)</i>
99	EN 60695-11-10	<i>Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test</i>
100		<i>methods</i>
101	EN 60754-1	<i>Test on gases evolved during combustion of materials from cables - Part 1:</i>
102		<i>Determination of the amount of halogen acid gas</i>
103	EN 60793-2-50	<i>Optical fibres – Part 2-50: Product specifications – Sectional specification for class B</i>
104		<i>single-mode fibres.</i>
105	EN 60825-2	<i>Safety of laser products - Part 2: Safety of optical fibre communication systems (OFCS)</i>

106	EN 61034-2	<i>Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements</i>
107		
108	EN 61300 series	<i>Fibre optic interconnecting devices and passive components – Basic test and measurement procedures</i>
109		
110	EN 61300-2-1	<i>Part 2-1: Tests – Vibration (sinusoidal)</i>
111	EN 61300-2-4	<i>Part 2-4: Tests – Fibre/cable retention</i>
112	EN 61300-2-12	<i>Part 2-12: Tests – Impact</i>
113	EN 61300-2-9	<i>Part 2-0: Tests - Shock</i>
114	EN 61300-2-22	<i>Part 2-22: Tests – Change of temperature</i>
115	EN 61300-2-33	<i>Part 2-33: Tests – Assembly and disassembly of closures</i>
116	EN 61300-3-1	<i>Part 3-1: Examinations and measurements – Visual examination</i>
117	EN 61300-3-3	<i>Part 3-3: Examinations and measurements – Active monitoring of changes in attenuation and return loss</i>
118		
119	EN 61300-3-28	<i>Part 3-28: Examinations and measurements – Transient loss</i>
120	EN 61753-1	<i>Fibre optic interconnecting devices and passive components – Part 1: General and guidance for performance standard (IEC 61753-1)</i>
121		

122 **3 Terms, definitions and abbreviations**

123 **3.1 Terms and definitions**

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

125 **3.1.1**

126 **fibre management system**

127 system to control fibre routing from the incoming to the outgoing fibres, containing one or more splice
 128 cassettes and additional functional elements, that provides a means for routing, storing and protecting of
 129 fibre splices, connectors or other passive optical devices in a predetermined order, from one cable sheath
 130 opening to another

131 **3.1.2**

132 **external network test interface**

133 **ENTI**

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

136 **3.1.3**

137 **microduct system**

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

141 **3.2 Abbreviations**

142 For the purposes of this document, the following abbreviations apply.

143 **FMS** Fibre Management System

144 **CPE** Customer Premises Equipment

145 **ONT** Optical Network Terminal

146 **ENTI** External Network Test Interface

147 4 Description

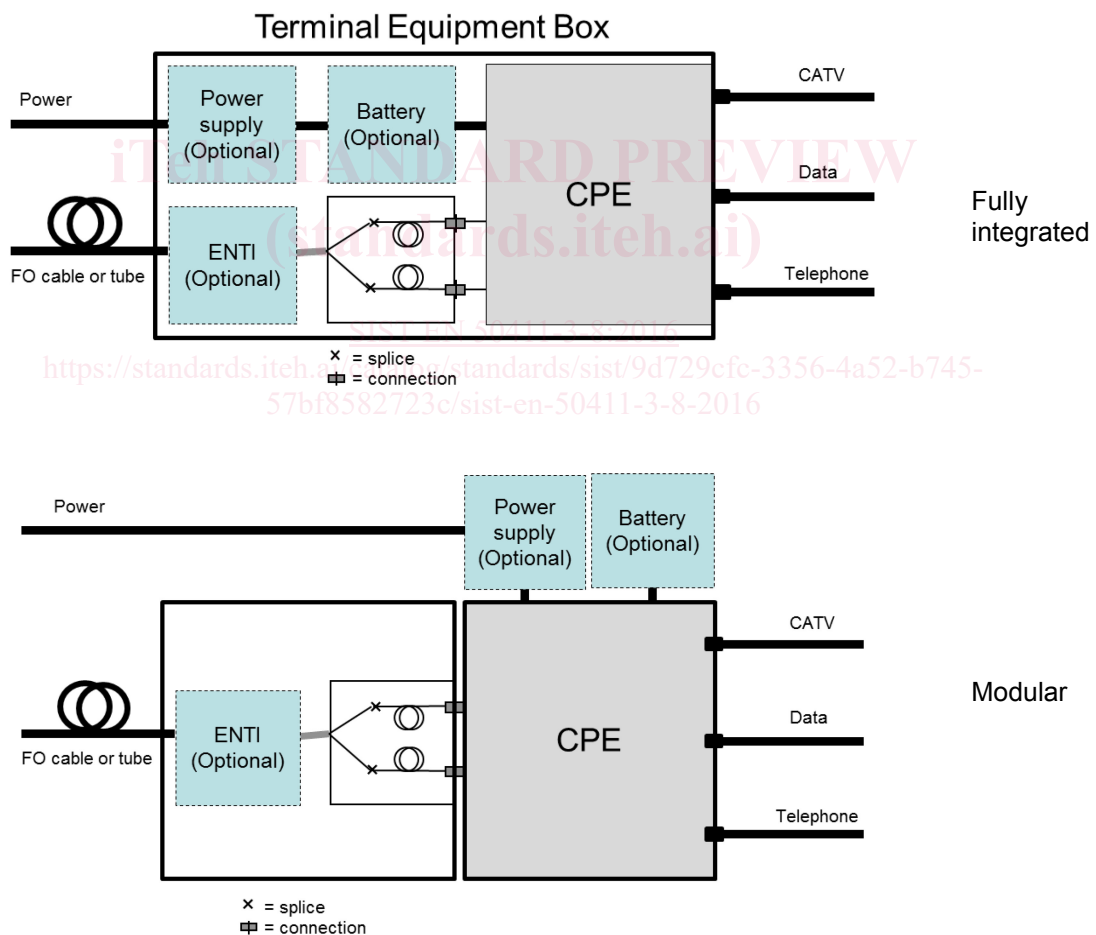
148 4.1 Optical fibre terminal equipment box housing

149 The terminal equipment box provides:

- 150 – facilities for mounting and protection of stored fibres, connectors, network test interface ENTI (optional),
151 electronics (ONT/CPE), power supply (optional) and batteries (optional),
- 152 – access by user to the electrical data, CATV and telephone outputs.
- 153 – a protected fibre management system for storing fibres, connectors and splices,
- 154 – sealing of input and output optical and electrical cables.

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

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



159 **Figure 1 – Examples of terminal equipment applications**

160 4.2 Cable fixing

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

163 **4.3 FMS system**

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

166 **4.4 Materials**

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

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

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

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

175 **4.5 Laser safety**

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

177 **4.6 Marking and identification**

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

- 180 a) identification of supplier;
181 b) manufacturing date code: year / month.

182 **5 Variants**

183 **Table 1 – Optical fibre terminal equipment box Type 1, for category C - variants**

184 **EN 50411-3-8– C- X₁ – X₂–X X₃– X₄ – X₅– X₆– X₇– X₈– X₉– X₆– X₇**

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.