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# Fibre organisers and closures to be used in optical fibre communication systems - Product specifications - Part 2-10: Sealed fibre splice closures type 2, category G, for FTTH optical distribution networks

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 50411-2-10

January 2015

ICS 33.180.20

English Version

# Fibre organisers and closures to be used in optical fibre communication systems - Product specifications - Part 2-10: Sealed fibre splice closures type 2, category G, for FTTH optical distribution networks

Organiseurs et boîtiers de fibres à utiliser dans les systèmes de communication par fibres optiques - Spécifications de produits - Partie 2-10: Boîtiers à épissure de fibres scellés Type 2, catégorie G, pour réseaux de distribution optiques FttH

LWL-Spleißkassetten und -Muffen für die Anwendung in LWL-Kommunikationssystemen - Produktnormen - Teil 2-10: Abgedichtete LWL-Muffen Typ 2 für die Kategorie G für optische FTTH-Verteilnetze

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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 50411-2-10:2015) 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) | 2015-11-11 |
| • latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | 2017-11-11 |

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

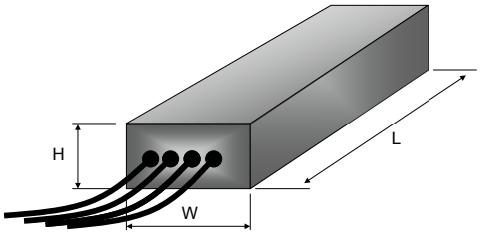
**Part 2-10: Sealed fibre splice closures type 2, category G, for FTTH optical distribution networks**

| **Description** | | **Performance** | |
|---|---|---|---|
| **Construction:** | Sealed closures IP67 | **Applications**: | |
| **Fibre management:** | Single Circuit, Single Element, Multiple Element and/or Single/Multiple Ribbon | Optical fibre cable networks for ground level | EN 61753-1, category G |

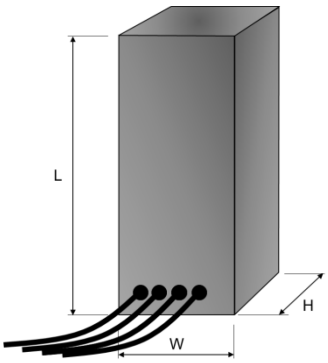
**Related documents:**

| | |
|---|---|
| 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 60794-3 | Optical fibre cables – Part 3: Sectional specification – Outdoor cables (IEC 60794-3) |
| 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) |

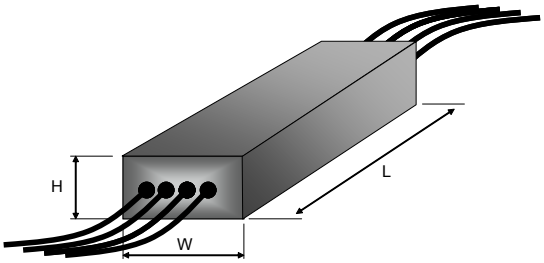
**Construction and splice capacity:**




Dome type




Pan type




In-line type

**Closure size and minimum total splice capacity**

| | **Fibre management system separation level** | | | | |
|---|---|---|---|---|---|
| **Closure size** | **Single Circuit (SC)** | **Single Element (SE)** | **Single Ribbon (SR)** | **Multiple Element (ME)** | **Multiple Ribbon (MR)** |
| **R** | 4 | 12 | - | - | - |
| **A** | 8 | 12 | - | 24 | - |
| **B** | 16 | 24 | 12 | 48 | 24 |
| **C** | 32 | 48 | 24 | 96 | 48 |
| **D** | 48 | 72 | 48 | 144 | 96 |
| **E** | 96 | 144 | 96 | 288 | 192 |
| **F** | 144 | 216 | 144 | 432 | 288 |
| **G** | 192 | 288 | 192 | 576 | 384 |
| **H** | 288 | 432 | 288 | 864 | 576 |

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# 1 Scope

## 1.1 Product definition

This specification contains the dimensional, optical, mechanical and environmental performance requirements of a fully installed splice closure for use in optical distribution networks at ground level (category G) in order for it to be categorised as an EN standard product. This type of sealed closure is intended for easy and/or frequent opening and closing in FTTH distribution and drop cable networks.

NOTE The sealing performance requirements and test severities of these closures are selected to obtain an IP 67 intrusion protection performance as defined in EN 60529.

## 1.2 Operating environment

The tests selected combined with the severity and duration are representative of an outside plant for ground level environment defined by EN 61753-1, category G: ground level. This corresponds with:

- operating temperature range: -40 °C to +65 °C;
- direct exposure to non weather protected outside plant conditions;
- deployment at ground level up to 3 metres above ground level;
- additionally to the category G environment, a deployment till 1 metre below ground level is added. Direct buried applications are allowed, however additional protection will be required when the locations are intended for passage of cars or other heavy vehicles.

## 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 and cable types

Although the performance tests are carried out on test samples containing dispersion unshifted single mode fibre (see Annex A), the closure, once tested according to this product specification, will be also suited for other fibre types like dispersion shifted, non-zero dispersion shifted and multimode fibres.

This closure standard allows both single mode and multimode fibre to be used and covers IEC standard optical fibre cables with their various fibre capacities, types and designs. This includes, but is not limited to, optical fibre cable standards EN 60794-2 (indoor), EN 60794-3 (outdoor).

# 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 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 Series | Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 Series) |
| EN 61300-2-1 | Part 2-1: Tests – Vibration (sinusoidal) (IEC 61300-2-1) |
| EN 61300-2-4 | Part 2-4: Tests – Fibre/cable retention (IEC 61300-2-4) |
| EN 61300-2-5 | Part 2-5: Tests – Torsion (IEC 61300-2-5) |

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