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Irish Standard  
I.S. EN 50411-3-2:2011

# Fibre organisers and closures to be used in optical fibre communication systems - Product specifications -- Part 3-2: Singlemode mechanical fibre splice

## I.S. EN 50411-3-2:2011

*Incorporating amendments/corrigenda issued since publication:*

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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**Fibre organisers and closures to be used in optical fibre communication systems -  
Product specifications -  
Part 3-2: Singlemode mechanical fibre splice**

Organiseurs et boîtiers de fibres destinés à être utilisés dans les systèmes de communication par fibres optiques -  
Spécifications de produit -  
Partie 3-2: Epissures mécaniques de fibres unimodales

LWL-Spleißkassetten und -Muffen für die Anwendung in LWL Kommunikationssystemen -  
Produktnorm -  
Teil 3-2: Mechanische Spleiße für Einmodenfasern

This European Standard was approved by CENELEC on 2011-01-02. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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**CENELEC**

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

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 86BXA, Fibre optic interconnect, passive and connectorised components.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50411-3-2 on 2011-01-02.

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

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2012-01-02
  - latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2014-01-02
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**Fibre organisers and closures to be used in optical fibre communication systems –  
Product specifications**

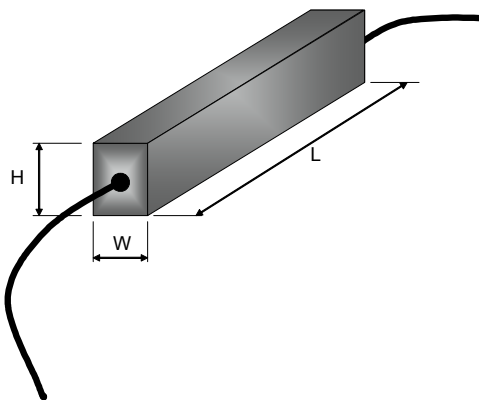
**Part 3-2: Singlemode mechanical fibre splice**

Description		Performance	
Type:	Fibre splice	Application:	EN 61753-1:2007, Category U with extension of lower temperature to - 40 °C
Style:	Mechanical	Attenuation grades	Grade B: ≤ 0,25 dB maximum (97 %) Grade C: ≤ 0,50 dB maximum (97 %)
Operating wavelength:	1 260 nm to 1 625 nm	Return loss grades	Grade 1: ≥ 60 dB Grade 2: ≥ 45 dB Grade 3: ≥ 35 dB
Fibre category	EN 60793-2-50 Types B1.1 and B1.3		

**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 60794-2-50	Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies (IEC 60794-2-50)
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 series)
EN 61753-1:2007	Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards (IEC 61753-1:2007)

**Outline and maximum dimensions:**



Variant	Dimension <i>W</i> mm	Dimension <i>H</i> mm	Dimension <i>L</i> mm
<b>Type M1</b>	3,8	6,4	38
<b>Type M2</b>	4,0	4,0	36
<b>Type M3</b>	3,2	3,2	45
<b>Type M4</b>	4,2	4,2	44
<b>Type M5</b>	4,0	4,0	40
<b>Type M6</b>	Ø 5,0		65

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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 singlemode mechanical splice shall meet in order for it to be categorised as an EN standard product.

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

Although in this document the product is qualified for EN 60793-2-50 types B1.1 and B1.3 singlemode fibres, it may also be suitable for other fibre types.

### **1.2 Interoperability**

The installed mechanical splice fits into a fibre management system with optical fibre splice cassettes or splice trays. This European Standard specifies the following two physical interface dimensions:

- a) cross sectional profile with width, height or diameter (in millimetres);
- b) length (in millimetres).

### **1.3 Expected performance**

In this document, the performance of a mechanical splice is given with identical fibres only. Losses associated with fibre cladding diameter and mode field mismatch are not taken into account. The measured attenuation is a function of the core concentricity, cladding non-circularity and alignment capability. The optical return loss performance is a function of the index matching gel and the fibre end face preparation.

### **1.4 Operating environment**

The tests selected combined with the severities and durations are representative of an outdoor enclosed environment defined as category U in EN 61753-1. To ensure that the product can be used in closures, boxes or street cabinet for categories A, G and S (as defined EN 61753-1) the specified lower temperature is extended to - 40 °C and requirements for temporary flooding have been added.

### **1.5 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.

### **1.6 Quality assurance**

Compliance with this specification does not guarantee the manufacturing consistency of the product. This standard does not cover quality insurance.

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