Procedure to assess the circuit integrity of optical fibres in a cable under resistance to fire testing

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 50582:2016 sisaldab Euroopa standardi EN 50582:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 50582:2016 consists of the English text of the European standard EN 50582:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.08.2016.	Date of Availability of the European standard is 05.08.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.220.40, 33.180.10

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50582

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English Version

Procedure to assess the circuit integrity of optical fibres in a cable under resistance to fire testing

Procédure d'évaluation de l'intégrité des circuits à fibres optiques dans un câble soumis à un essai de résistance au feu

Prüfung des Übertragungsverhaltens im Brandfall von Lichtwellenleiterkabeln für die Verwendung in Notstromkreisen bei ungeschützter Verlegung (Durchmesser kleiner oder gleich 20 mm)

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

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European foreword

This document (EN 50582:2016) has been prepared by CLC/TC 86A “Optical fibres and optical fibre cables”.

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)	2017-06-27
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2019-06-27

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1 Scope

This European standard specifies the details for the point of failure, continuity checking arrangement, test sample, test procedure and test report relevant to optical fibre cables tested as described either in EN 50200 or in EN 50577.

The test determines the survival time for circuit integrity of the optical fibre cables when exposed to fire under the conditions either given in EN 50200 or given in EN 50577.

EN 50200 is limited to cables with an overall diameter not exceeding 20 mm.

This standard includes (Annex A) the field of direct application and rules for extended application of test results (EXAP). Details regarding P classification using data from the EN 50577 test and PH classification using data from the EN 50200 test are given in EN 13501-3. Information regarding classification is given in Annex B.

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 13501-3, *Fire classification of construction products and building elements — Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers*

EN 50200, *Method of test for resistance to fire of unprotected small cables for use in emergency circuits*

EN 50577, *Electric cables — Fire resistance test for unprotected electric cables (P classification)*

EN 60793-1-46, *Optical fibres — Part 1-46: Measurement methods and test procedures — Monitoring of changes in optical transmittance (IEC 60793-1-46)*

EN 60793-2*, Optical fibres — Part 2: Product specifications — General (IEC 60793-2)*

3 Circuit integrity (Continuity of signal supply)

The criteria that are used for defining fire resistant optical fibre cables are deemed to demonstrate the ability of the cable to maintain a reliable signal transmission when subjected to fire.

Circuit integrity is based upon continuity of optical signal supply.

This clause specifies characteristics that shall be used to define the continuity of signal supply / maintenance of circuit integrity (continuity) under fire conditions for optical fibre cables.

The circuit integrity i.e. continuity of optical signal supply is deemed to be maintained if the maximum increase in attenuation does not exceed the value given in Table 1 during the test duration.

Continuity of optical signal supply (see 4.4) can generally be performed by two methods:

(A) Monitor individual fibres for attenuation change;

(B) Loop-back measurements: this method splices the fibres under test to each other so that they are concatenated in a continuous length. The attenuation change is determined by dividing the attenuation change across all loop-back fibres under test by the number of loop-backed fibres.