Fastställd	Utgåva	Sida	Ansvarig kommitté
2018-03-14	2	1 (1+42)	SEK TK 86

Optofibrer –
Del 1-33: Mätning och provning –
Spänningskorrosion (mekanisk påkänning)

Optical fibres –
Part 1-33: Measurement methods and test procedures –
Stress corrosion susceptibility

Som svensk standard gäller europastandarden EN 60793-1-33:2017. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60793-1-33:2017.

Nationellt förord

Europastandarden EN 60793-1-33:2017

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60793-1-33, Second edition, 2017 - Optical fibres - Part 1-33: Measurement methods and test procedures - Stress corrosion susceptibility**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60793-1-33, utgåva 1, 2004, gäller ej fr o m 2020-09-20.

ICS 33.180.10

Denna standard är fastställd av SEK Svensk Elstandard,
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Optical fibres - Part 1-33: Measurement methods and test procedures - Stress corrosion susceptibility (IEC 60793-1-33:2017)

Fibres optiques - Partie 1-33: Méthodes de mesure et procédures d'essai - Résistance à la corrosion sous contrainte (IEC 60793-1-33:2017)

Lichtwellenleiter - Teil 1-33: Messmethoden und Prüfverfahren - Spannungskorrosionsempfindlichkeit (IEC 60793-1-33:2017)

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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

Ref. No. EN 60793-1-33:2017 E

European foreword

The text of document 86A/1803/FDIS, future edition 1 of IEC 60793-1-33:2017, prepared by IEC/SC 86A "Fibres and cables", of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60793-1-33:2017.

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)	2018-06-20
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-09-20

This document supersedes EN 60793-1-33:2002.

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

Endorsement notice

The text of the International Standard IEC 60793-1-33:2017 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OPTICAL FIBRES –

Part 1-33: Measurement methods and test procedures – Stress corrosion susceptibility

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60793-1-33 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 2001. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) removal of RTM;
b) changes to scope.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
86A/1803/FDIS	86A/1824/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 60793 series, published under the general title *Optical fibres*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Annexes A, B, C, D, and E form an integral part of this document.

Annexes F, G, and H are for information only.

OPTICAL FIBRES –

Part 1-33: Measurement methods and test procedures – Stress corrosion susceptibility

1 Scope

This part of IEC 60793 contains descriptions of the five main test methods for the determination of stress corrosion susceptibility parameters.

The object of this document is to establish uniform requirements for the mechanical characteristic of stress corrosion susceptibility for silica-based fibres. Dynamic fatigue and static fatigue tests are used to determine the (dynamic) n_d value and (static) n_s value of stress corrosion susceptibility parameters. Currently, only the n_d-value is assessed against specification. Measured values greater than 18 per this procedure reflect the n_d-value of silica, which is approximately 20. Higher values will not translate to demonstrable enhanced fatigue resistance.

Silica fibre mechanical tests determine the fracture stress and fatigue properties under conditions that model the practical applications as closely as possible. The following test methods are used for determining stress corrosion susceptibility:

– A: Dynamic n_d value by axial tension;
– B: Dynamic n_d value by two-point bending;
– C: Static n_s value by axial tension;
– D: Static n_s value by two-point bending;
– E: Static n_s value by uniform bending.

These methods are appropriate for category A1, A2 and A3 multimode, class B single-mode fibres and class C intraconnecting single-mode fibres.

These tests provide values of the stress corrosion parameter, n, that can be used for reliability calculations according to IEC TR 62048 [18][1].

Information common to all methods is contained in Clauses 1 to 10, and information pertaining to each individual test method appears in Annexes A, B, C, D, and E.

Annexes F and G offer considerations for dynamic and static stress corrosion susceptibility parameter calculations, respectively; Annex H offers considerations on the different stress corrosion susceptibility parameter test methods.

2 Normative references

There are no normative references in this document.

1 Numbers in square brackets refer to the Bibliography.