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Optofibrer – Del 1-34: Mätning och provning – Fibers bågformighet

*Optical fibres –
Part 1-34: Measurement and test procedures –
Fibre curl*

Som svensk standard gäller europastandarden EN IEC 60793-1-34:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60793-1-34:2021.

Nationellt förord

Europastandarden EN IEC 60793-1-34:2021

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- **IEC 60793-1-34, Third edition, 2021 - Optical fibres - Part 1-34: Measurement and test procedures - Fibre curl**

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Tidigare fastställd svensk standard SS-EN 60793-1-34, utgåva 2, 2006, gäller ej fr o m 2024-03-17.

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English Version

**Optical fibres - Part 1-34: Measurement methods and test
procedures - Fibre curl
(IEC 60793-1-34:2021)**

Fibres optiques - Partie 1-34: Méthodes de mesure et
procédures d'essai - Ondulation de la fibre
(IEC 60793-1-34:2021)

Lichtwellenleiter - Teil 1-34: Messmethoden und
Prüfverfahren - Faserringeln
(IEC 60793-1-34:2021)

This European Standard was approved by CENELEC on 2021-03-17. 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 CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 86A/1971/CDV, future edition 3 of IEC 60793-1-34, prepared by 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 IEC 60793-1-34:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-12-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-03-17

This document supersedes EN 60793-1-34:2006 and all of its amendments and corrigenda (if any).

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 60793-1-34:2021 was approved by CENELEC as a European Standard without any modification.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60793	series	Optical fibres - Part 1: Generic specification	EN IEC 60793	series

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

Part 1-34: Measurement methods and test procedures – Fibre curl

FOREWORD

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International Standard IEC 60793-1-34 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision.

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

- a) modification of several derivation equations for laser scattering;
- b) change of angular increment from 10° to 30° to 10° to 45°;
- c) change of Annex B from informative to normative.

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

CDV	Report on voting
86A/1971/CDV	86A/1994/RVC

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 in 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.

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OPTICAL FIBRES –

Part 1-34: Measurement methods and test procedures – Fibre curl

1 Scope

This part of IEC 60793 establishes uniform requirements for the mechanical characteristic: fibre curl or latent curvature in uncoated optical fibres, i.e. a specified length of the fibre has been stripped from coating. Fibre curl has been identified as an important parameter for minimizing the splice loss of optical fibres when using passive alignment fusion splicers or active alignment mass fusion splicers.

Two methods are recognized for the measurement of fibre curl, in uncoated optical fibres:

- method A: side view microscopy;
- method B: laser beam scattering.

Both methods measure the radius of curvature of an uncoated fibre by determining the amount of deflection that occurs as an unsupported fibre end is rotated about the fibre's axis. Method A uses visual or digital video methods to determine the deflection of the fibre while method B uses a line sensor to measure the maximum deflection of one laser beam relative to a reference laser beam.

By measuring the deflection behaviour of the fibre as it is rotated about its axis and understanding the geometry of the measuring device, the fibre's radius of curvature can be calculated from simple circular models, the derivation of which are given in Annex C.

Both methods are applicable to type B optical fibres as described in IEC 60793 (all parts).

Method A is the reference test method, used to resolve disputes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60793 (all parts), *Optical fibres*