

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Optical fibres –
Part 1-30: Measurement methods and test procedures – Fibre proof test**

**Fibres optiques –
Partie 1-30: Méthodes de mesure et procédures d'essai – Essais de sélection**





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRES –

**Part 1-30: Measurement methods and test procedures –
Fibre proof test**

FOREWORD

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International Standard IEC 60793-1-30 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

This bilingual version (2017-12) corresponds to the monolingual English version, published in 2010-05.

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

The main change with respect to the previous edition is an improved description of the procedure.

The text of this standard is based on the following documents:

CDV	Report on voting
86A/1288/CDV	86A/1313/RVC

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

The French version of this standard has not been voted upon.

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

A list of all parts of the IEC 60793-1-3x series, published under the general title *Optical fibres – measurement methods and test procedures*, can be found on the IEC website.

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

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- withdrawn,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

INTRODUCTION

Publications in the IEC 60793-1 series concern measurement methods and test procedures as they apply to optical fibres.

Within the same series, several different areas are grouped, but all numbers possibly not used, as follows:

- parts 1-10 to 1-19: General
- parts 1-20 to 1-29: Measurement methods and test procedures for dimensions
- parts 1-30 to 1-39: Measurement methods and test procedures for mechanical characteristics
- parts 1-40 to 1-49: Measurement methods and test procedures for transmission and optical characteristics
- parts 1-50 to 1-59: Measurement methods and test procedures for environmental characteristics

OPTICAL FIBRES –

Part 1-30: Measurement methods and test procedures – Fibre proof test

1 Scope

This part of IEC 60793 describes procedures for briefly applying a specified tensile load as a proof test to continuous lengths of optical fibre. The tensile load is applied for as short a time as possible, yet sufficiently long to ensure the glass experiences the proof stress, typically much less than one second.

This method is applicable to types A1, A2, A3 and B optical fibres.

The object of this standard is to establish uniform requirements for the mechanical characteristic fibre proof test.

2 Normative references

None.

3 Apparatus

3.1 General

There are several possible machine designs, all of which perform the basic functions required for measuring fibre proof with the indicated general operating requirements. Care should be used in the design so as to prevent coating damage.

Two machine types are used:

- braked capstan type;
- dead weight type.

Either machine may be used during the fibre-drawing process (on-line for coated fibre only), or as a separate process step (off-line).

NOTE There are dynamics with on-line screening (different from off-line screening) which should be taken into account.

3.2 Fibre pay out

Isolate the tensile load variations from the proof test region so as not to cause variations in the proof load. Do not permit the applied proof stress to fluctuate below the value specified in the detail specification.

3.3 Proof test region

With the exception of additional bend stress of up to 10 % of the proof stress, apply the proof stress uniformly through the cross-sectional area of the test sample. Ensure that the load-bearing members in this region are rigid (e. g. made of steel or aluminium). During testing, the tension-producing mechanism(s) shall not allow the proof stress to fluctuate below the value specified in the detail specification.