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BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

मसौदा भारतीय मानक

प्रकाशित तंतु भाग -1 विधियाँ और परीक्षण प्रक्रियाएँ : अनुभाग 31 तनन सामर्थ्य

(पहला पुनरीक्षण)

Draft Indian Standard

Optical fibres: Part 1 measurement methods and test procedures: Sec 31 tensile strength

(First Revision)

ICS: 33.180.01

LITD 11 (Fibre Optics, Fibers, Cables and Devices Sectional Committee)	**Last date of Comments 28 October 2025**

NATIONAL FOREWORD

(Formal clauses will be added later)

This Draft Indian Standard (First Revision) which is identical with IEC 60793-1-31: 2019 'Optical fibres — Part 1-31: Measurement methods and test procedures— Tensile strength 'issued by the International Electrotechnical Commission (IEC) *will be* adopted by the Bureau of Indian Standards on the recommendation of Fibre Optics, Fibers, Cables and Devices Sectional Committee and approval of the Electronics and Information Technology Division Council.

This standard was originally published in 2013 and was identical with IEC 60793-1-31:2010 The first revision of this standard has been undertaken to align it with the latest version of International Standard IEC 60793-1-31:2019.

This edition includes the following significant technical changes with respect to the previous edition:
a) correction of Formulae (3b) and (4b) and renumbering of formulae.

The text of IEC Standard *may be* approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appears referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

The technical committee has reviewed the provisions of following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

International standards	**Corresponding Indian standards**	**Degree of Equivalence**
IEC 60793-1-20, Optical fibres – Part 1-20: Measurement methods and test procedures –Fibre geometry	IS/IEC 60793-1-20:2014 Optical fibres: Part 1 measurement methods and test procedures: Sec 20 fibre geometry (First Revision)	Identical with IEC 60793-1-20:2014

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values *(Second Revision)*'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

SCOPE OF IEC 60793-1-31:2019

This part of IEC 60793 provides values of the tensile strength under dynamic loading of optical fibre samples. The method tests individual lengths of uncabled and unbundled glass optical fibre. Sections of fibre are broken with controlled increasing stress or strain that is uniform over the entire fibre length and cross section. The stress or strain is increased at a nominally constant rate until breakage occurs.

The distribution of the tensile strength values of a given fibre strongly depends on the sample length, loading velocity and environmental conditions. The test can be used for inspection where statistical data on fibre strength is required. Results are reported by means of statistical quality control distribution. Normally, the test is carried out after temperature and humidity conditioning of the sample. However, in some cases, it can be sufficient to measure the values at ambient temperature and humidity conditions.

This method is applicable to categories A1, A2, and A3, and classes B and C optical fibres.

The object of this document is to establish uniform requirements for the mechanical characteristic: tensile strength. (for example, national) standards.
Note: - The Technical content of this document has not been enclosed as these are identical with the corresponding IEC Standard. For details, please refer to IEC 60793-1-31:2019 or kindly contact.

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