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TECHNICAL REPORT

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Selection of optical fibre cable specifications relative to mechanical, ingress, climatic or electromagnetic characteristics – Guidance

INTERNATIONAL
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COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SELECTION OF OPTICAL FIBRE CABLE SPECIFICATIONS RELATIVE TO MECHANICAL, INGRESS, CLIMATIC OR ELECTROMAGNETIC CHARACTERISTICS – GUIDANCE

FOREWORD

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC 62362 which is a Technical Report, 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 2010. It constitutes a technical revision.

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

a) replacement of references and information from ISO/IEC 24702 and ISO/IEC 11801 with ISO/IEC 11801-1;
b) update of the MICE table;
c) update of the current optical fibre designations of IEC 60793-2-10 and IEC 60793-2-50.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
86A/1987/DTR	86A/2029/RVDTR

Full information on the voting for the approval of this technical report 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.

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- withdrawn,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

Optical fibre cable specification standards are defined in IEC 60794 (all parts), which are listed in Annex B. They are organized in a hierarchy similar to the IECQ system. They differ from the IECQ system in that they are all performance standards. ~~Optical fibre cable standards mainly cover the attributes and tests that protect the fibre from the environment, including installation, and the fibre attributes that may be affected by cabling.~~ Optical fibre cable standards specify the attributes and tests on cables intended to verify adequate protection of fibres against external influences during the cabling process, cable installation handling and from environmental effects during storage and operation. The attributes of the fibres within the cable are defined by reference to optical fibre specification standards of the IEC 60793 series, which are listed in Annex C. A complete and up-to-date listing of standards in the IEC 60793 and IEC 60794 series is available on the IEC website: http://www.iec.ch.

The different levels of hierarchy are: ~~general~~ generic, sectional, family and product. The primary distinction between these is the level of detail. Typically, more options or wider ranges are present at the higher level. At a given level, the distinctions are with respect to application or cable construction. ~~The references section~~ Clause 2 of this document gives a more complete mapping. Parts of the family specification include blank detail specifications for various attributes that do not have normative requirements.

~~At the sectional specification level, two main categories are indoor and outdoor cables. Typically the outdoor cables have tougher tests than the indoor cables. At the product specification level, there are series of standards intended to support ISO/IEC 11801 for premises cabling, using both indoor and outdoor varieties.~~

~~This guidance will not attempt to reproduce the requirements of all the different specifications. For each of the MICE attributes, it will discuss the situation and mention the key options.~~

At the sectional specification level, the main categories are indoor cables, outdoor cables, cables along overhead lines, microduct cabling and indoor/outdoor cables. Typically, the outdoor cables have tougher tests than the indoor cables. At the product specification level, there is a series of standards intended to support ISO/IEC 11801 (all parts) for premises cabling, using both indoor and outdoor varieties.

It is not the intention of this document to reproduce the requirements of all relevant specifications, but rather to discuss typical application situations and mention key options for tests, while seeking to guarantee the performance of cables in operation.

SELECTION OF OPTICAL FIBRE CABLE SPECIFICATIONS RELATIVE TO MECHANICAL, INGRESS, CLIMATIC OR ELECTROMAGNETIC CHARACTERISTICS – GUIDANCE

1 Scope

The purpose of this document is to provide information on the specification of optical fibre cables with respect to the mechanical, ingress, climatic and chemical or electromagnetic characteristics (MICE) as classified in ~~ISO/IEC 24702~~ ISO/IEC 11801-1.

In this classification system, each letter of the four initials of the acronym are subscripted with a value from one to three to indicate different severities. The current attributes and severities are found in Annex A.

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 60794-1-22, *Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures – Environmental test methods*

IEC 60794-2 (all parts), *Optical fibre cables – Part 2: Indoor ~~optical fibre~~ cables*

IEC 60794-3 (all parts), *Optical fibre cables – Part 3: Outdoor cables*

~~ISO/IEC 24702, *Information technology – Generic cabling – Industrial premises*~~

IEC 61753 (all parts), *Fibre optic interconnecting devices and passive components – Performance standard*

ISO/IEC 11801 (all parts), *Information technology – Generic cabling for customer premises*

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