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BSI Standards Publication

Optical fibre cables — Guidelines to the installation of optical fibre cables

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National foreword

This Published Document is the UK implementation of IEC/TR 62691:2016. It supersedes PD IEC/TR 62691:2011 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/1, Optical fibres and cables.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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TECHNICAL REPORT

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Optical fibre cables –
Guidelines to the installation of optical fibre cables

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC TR 62691, 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 2011. It constitutes a technical revision.

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

a) more details have been added on cables for lashed applications (transferred from IEC 60794-3-10);
b) more details have been added on cables for storm and sanitary sewer applications (transferred from IEC 60794-3-40);
c) more details have been added on cables for high pressure gas pipe applications (transferred from IEC 60794-3-50);

d) more details have been added on cables for drinking water pipe applications (transferred from IEC 60794-3-60);

e) a reference to IEC TR 62263 has been included, concerning optical cables installation on high voltage power lines;

f) a revision, and an update when applicable, has been done on the referred documents.

The text of this Technical Report is based on the following documents:

Enquiry draft	Report on voting
86A/1721/DTR	86A/1730/RVC

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

A bilingual version of this publication may be issued at a later date.

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 cabling provides a high performance communications pathway whose characteristics can be degraded by inadequate installation. This Technical Report provides guidance to assist the user and installer with regard to the general aspects of the installation of optical fibre cables covered by the IEC 60794 series, and the particular aspects of the "blowing" technique.

Optical fibre cables are designed so that normal installation practices and equipment can be used wherever possible. They do, however, generally have a strain limit rather lower than metallic conductor cables and, in some circumstances, special care and arrangements can be needed to ensure successful installation.

It is important to pay particular attention to the cable manufacturer's recommendations and stated physical limitations and not exceed the given cable tensile load rating for a particular cable. Damage caused by overloading during installation may not be immediately apparent but can lead to failure later in its service life.

This document does not supersede the additional relevant standards and requirements applicable to certain hazardous environments, for example electricity supply and railways.

OPTICAL FIBRE CABLES –

Guidelines to the installation of optical fibre cables

1 Scope

IEC TR 62691, which is a Technical Report, gives recommendations for handling and installing optical fibre cables on metropolitan communication networks. Installation methods covered by this document include underground ducts, trenchless technique, blowing in microducts, aerial installation on poles, lashed aerial in metropolitan networks, direct buried and use of trenches.

Special installation situations such as tunnelling and lead-in installations, on-bridges, underwater, use of sanitary sewers, high pressure gas pipes and drinking water pipes are commented and detailed.

Installation and maintenance of optical fibre cables on overhead power lines including the following are not covered by this document and are referred to in IEC TR 62263:

- optical ground wire (OPGW) fibre cable;
- optical phase conductor (OPPC) fibre cable;
- optical attached fibre cable (OPAC);
- all dielectric self-supporting (ADSS) optical fibre cable.

IEC TR 62263 includes an extensive coverage on recommendations to ensure the safety of personnel and equipment when installing or maintaining these types of optical fibre cables on overhead power lines.

2 Normative references

There are no normative references in this document.

3 Installation planning

3.1 Installation specification

The successful installation of an optical fibre cable can be influenced significantly by careful planning and assisted by the preparation of an installation specification by the user. The installation specification should address the cabling infrastructure, cable routes, potential hazards and installation environment and provide a bill of materials and technical requirements for cables, connectors and closures.

The installation specification should also detail any civil works, route preparation (including drawpits, ductwork, traywork and trunking) and surveying that are necessary, together with a clear indication of responsibilities and contractual interfaces, especially if there are any site or access limitations.

Post-installation requirements for reinstatement, spares, ancillary services and regulatory issues should also be addressed.