



BSI Standards Publication

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

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 It supersedes PD IEC/TR 62691:2011 which is withdrawn.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.

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Published by BSI Standards Limited 2016

ISBN 978 0 580 92161 2

ICS 33.180.10

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 July 2016.

Amendments/corrigenda issued since publication

Date	Text affected
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TECHNICAL REPORT



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.180.10

ISBN 978-2-8322-3497-6

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CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references.....	8
3 Installation planning.....	8
3.1 Installation specification	8
3.2 Route considerations.....	9
3.3 Cable installation – Tension considerations	9
3.4 Duct installations – Cable tension predictions	10
3.5 Maximum tension or compression force exerted on cable	10
3.5.1 General	10
3.5.2 Total cable tension – pulling applications.....	10
3.5.3 Total cable tension – pushing, blowing, or pulling applications	12
3.6 Installation temperature.....	17
3.7 Information and training.....	17
4 Cable installation methods	18
4.1 General considerations.....	18
4.2 Safety in confined spaces.....	18
4.3 FTTX installation	18
4.4 Pre-installation procedures.....	19
4.5 Installation of optical cables in underground ducts	19
4.5.1 Application.....	19
4.5.2 Installation using trenchless technique	20
4.5.3 Cable overload protection methods.....	20
4.5.4 Cable bending and guiding systems.....	20
4.5.5 Winching equipment and ropes.....	20
4.5.6 Cable friction and lubrication	21
4.5.7 Cable handling methods to maximise installed lengths	22
4.5.8 Jointing length allowance	23
4.5.9 Blowing techniques for the installation of fiber optic cables into ducts.....	23
4.5.10 Optical fibre cable installation by floating technique	23
4.6 Installation of aerial optical cables	23
4.6.1 Application.....	23
4.6.2 Installation methods	26
4.6.3 Cable protection methods.....	26
4.6.4 Winching and guiding systems.....	27
4.6.5 Methods to maximise lengths	27
4.6.6 Jointing length allowance	27
4.6.7 In-service considerations.....	27
4.6.8 Lashed aerial applications	28
4.7 Installation of buried cable.....	31
4.7.1 Installation methods	31
4.7.2 Cables in trenches	31
4.7.3 Installing cables by ploughing.....	33
4.7.4 Methods to maximise lengths	33
4.7.5 Jointing length allowance	33

4.8	Installation in special situations	33
4.8.1	Tunnel and building lead-in	33
4.8.2	Bridges	33
4.8.3	Underwater	33
4.8.4	Storm and sanitary sewers	34
4.8.5	High pressure gas pipes (fiber-in-gas)	38
4.8.6	Drinking water pipes	39
4.8.7	Industrial environments	41
4.9	Installation of indoor cables	41
4.9.1	General considerations	41
4.9.2	Cable routing	41
4.9.3	Confined spaces	42
4.9.4	Installation of cables in the vertical riser area of buildings	42
4.10	Blown systems	42
4.10.1	General considerations	42
4.10.2	Tube installation	43
4.10.3	Fibre and cable installation	43
4.11	Cable location	44
5	Lightning protection	44
	Bibliography	45
	Figure 1 – Cable tension calculations (Equations (1) to (3))	11
	Figure 2 – Cable tension calculations (Equations (4) to (9))	14
	Figure 3 – Cable tension calculations	17
	Figure 4 – FTTX applications	19
	Figure 5 – Cable with fitted sock-type grip	21
	Figure 6 – The "figure-8" system	22
	Figure 7 – Optical fibre cabling in an underground duct	23
	Figure 8 – Aerial cable parameters	24
	Figure 9 – Analysis of forces acting on an aerial cable with ice formation	25
	Figure 10 – Example of calculated forces for an aerial operation cable design	26
	Figure 11 – Aerial cable joint point	27
	Figure 12 – Aerial cable applications	28
	Figure 13 – Drive-off (moving reel) method	28
	Figure 14 – Stationary reel method	29
	Figure 15 – Minimum bend radius for the optical cable at dead ends (single fixing) and at directional changes (double anchorage) situations	31
	Figure 16 – Conduit robotized installation	35
	Figure 17 – Spring loaded stainless-steel ring – Conduit fastening	35
	Figure 18 – Schematic drawing robotized installation – Drilling	36
	Figure 19 – Schematic drawing – Spanning of optical fibre cables within sewers	37
	Figure 20 – Schematic drawing – Laying on the ground of optical fibre cables within sewers	37
	Figure 21 – Picture of an the I/O-port	38
	Figure 22 – Schematic drawing of cable installation within gas pipe	39
	Figure 23 – I/O-port for optical fibre installation in water drinking pipes	40

Figure 24 – Schematic drawing of OF cable installation within drinking water lines	40
Figure 25 – Installation of I/O-ports on high pressure PE drinking water pipes	41
Figure 26 – Cable installation by cascade blowing	44
Table 1 – Calculation for total tension	12
Table 2 – Calculation for pulling force in Figure 2	14
Table 3 – Calculation for pushing force in Figure 2	15
Table 4 – Calculation for blowing force in Figure 2.....	16
Table 5 – Minimum installation depths.....	32

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

Guidelines to the installation of optical fibre cables

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.