

# TECHNICAL REPORT

**Guidance on the environmentally conscious design of fibre optics related products and subsystems**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

PRICE CODE



ICS 33.180.01

ISBN 978-2-83220-646-1

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope and objective .....	6
2 Normative references .....	6
3 Overview of relevant international standards .....	6
3.1 General.....	6
3.2 IEC 62430:2009: Environmentally conscious design for electrical and electronic products .....	7
3.3 IEC 62075:2012: Audio/video, information and communication technology equipment – Environmentally conscious design .....	7
3.4 ISO/TR 14062:2002: Environmental management – Integrating environmental aspects into product design and development.....	7
3.5 ISO 14006:2011: Environmental management systems – Guidelines for incorporating ecodesign .....	7
3.6 ITU-T L.1100: Procedure for recycling rare metals in information and communication technology goods .....	7
3.7 IEC/TR 62839-1, Environmental declaration: Part 1: Wires and cables and accessories products specific rules .....	7
4 Requirements of IEC 62430:2009 .....	7
5 Experiences and best practices of environmental consciousness.....	9
5.1 Designing fibre optic cables for recycling.....	9
5.2 Environmental protection.....	10
5.3 Recycling of used products.....	10
5.4 Recyclability of optical fibre cable.....	10
Bibliography.....	11
Table 1 – IEC 62430:2009 requirements .....	8

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GUIDANCE ON THE ENVIRONMENTALLY CONSCIOUS DESIGN  
OF FIBRE OPTICS RELATED PRODUCTS AND SUBSYSTEMS**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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 62785, which is a technical report, has been prepared by IEC technical committee 86: Fibre optics.

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

Enquiry draft	Report on voting
86/433/DTR	86/441/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 technical report should be read in conjunction with IEC 62430:2009.

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 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.

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

Withdrawn

## INTRODUCTION

Fibre optics related products and subsystems are high performance systems. Their characteristics can have a negative impact on our environment in one way or another through their entire life cycle (design, manufacturing, use, recycling, and disposal).

Among several international standards and guidelines relevant to environmental consciousness, IEC 62430:2009 is the most recently published normative standard of a horizontal nature. Although optical fibres, optical cables, fibre optic interconnecting devices and passive components can be understood as non-electrical or non-electronic, they are within the scope of IEC TC86 (Fibre optics). Thus, designing fibre optic products and subsystems would need to conform to IEC 62430.

This Technical Report therefore provides informative guidance to assist the designer with regard to the general aspects of environmentally conscious design covered by IEC 62430. After quickly grasping the substance of the IEC 62430 requirements through this technical report, it will be necessary to refer directly to the main text of IEC 62430 for details.

Withdrawn

# GUIDANCE ON THE ENVIRONMENTALLY CONSCIOUS DESIGN OF FIBRE OPTICS RELATED PRODUCTS AND SUBSYSTEMS

## 1 Scope and objective

This Technical Report, reiterates all the key normative “shall” texts included in IEC 62430 that specify requirements and procedures to integrate environmental aspects into the design and development processes of electrical and electronic products, including combinations of products, and the materials and components of which they are composed. This report also conveys information on the experiences and best practices of environmental consciousness of fibre optics related products and subsystems.

The objectives of this report are to

- help fibre optic industries reduce negative environmental impacts of the equipment and subsystems throughout the lifecycle (design, manufacturing, use, recycling, and disposal),
- raise awareness of IEC 62430 and other standards among fibre optic industries, particularly its mandatory requirements,
- share industry information to cooperatively increase the level of environmental consciousness of fibre optic industries.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62075:2012, *Audio/video, information and communication technology equipment – Environmentally conscious design*

IEC 62430:2009, *Environmentally conscious design for electrical and electronic products*

ISO/TR 14006:2011, *Environmental management systems – Guidelines for incorporating design*

ISO/TR 14062:2002, *Environmental management – Integrating environmental aspects into product design and development*

ITU-T-L.1100, *Procedure for recycling rare metals in information and communication technology goods*