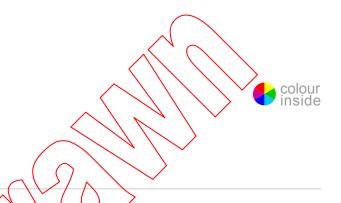


IEC TR 62627-01

Edition 2.0 2016-01

TECHNICAL REPORT



Fibre optic interconnecting devices and passive components – Part 01: Fibre optic connector cleaning methods



INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 33.180.20 ISBN 978-2-8322-3125-8

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

CONTENTS

F (DREWO	RD	4
1	Scop	e	6
2	Norm	native references	6
3	Term	s and definitions	6
	3.1	Cleaners	
	3.2	Optical connector parts	
4		cation of optical connectors	
	4.1	General	8
	4.2	Influence of contamination of optical connector end-faces	o
5		in handling optical connectors	8
	5.1	General	8
	5.2	Storage of optical connectors	8
	5.3	Connection of optical connector plugs to ports or optical network equipment	
	5.4	Disconnection of optical connector plugs to ports	
6		caps	
7		ning tools and machines	9
•	7.1	General	
	7.2	Reel type cleaner	
	7.3	Stick type cleaner	
	7.4	Pen type cleaner	
	7.5	Adhesive backed stick type cleaner	10
	7.6	Gas and vacuum cleaning machine	. 11
	7.7	Air duster	
	7.8	Tissue and solvent, wet cleaning	
8	Optic	al connectors and their applicable cleaning tools and machines	
9		edures	
-	9.1	General	
	9.2	Basic procedure of cleaning	
	9.3 /	Procedure to clean exposed plug end-faces with a reel type cleaner	
	9.4	Procedure for port cleaning using a stick type or a pen type cleaner	
	9.5	Procedure for port cleaning using an adhesive backed stick type cleaner	
	9.6	Cleaning procedure using a gas and vacuum type cleaning machine	
Ar	nnex A (informative) Precautions for the cleaning process	
	A.1	Material to be cleaned	
	A.1.1		
	A.1.2	· ·	
	A.1.3	•	
	A.1.4	Timing of the cleaning	.16
	A.2	Additional information	. 16
Ar	nnex B (informative) General information on contamination	.18
	B.1	Impact of contamination	. 18
	B.1.1	·	
	B.1.2		
	B.1.3	• .	
	B.2	Source of contamination	. 18

IEC TR 62627-01:2016 © IEC 2016 - 3 -

B.2.1 Mishandling	18
B.2.2 Environmental sources	19
B.2.3 Contamination travels	19
B.2.4 Contamination migration	19
B.3 Problems due to end-face contamination	20
B.3.1 Signal degradation	20
B.3.2 Permanent damage	21
Annex C (informative) Example of inspection equipment	22
Bibliography	23
Figure 1 –Example of a reel type cleaner	9
Figure 2 –Example of stick type cleaners	10
Figure 3 –Example of a pen type cleaner	10
Figure 4 – Example of an adhesive backed stick type cleaner	11
Figure 5 – Example of a gas and vacuum cleaning machine	.\11
Figure 6 – Example of an air duster	11
Figure 7 – Cleaning with a reel type cleaner	13
Figure 8 – Cleaning ports using a stick type cleaner	14
Figure 9 – Cleaning ports using a pen type cleaner	14
Figure B.1 – Typical examples of contamination	19
	19
Figure B.3 – Contamination migration	20
Figure B.4 – Signal degradation due to contamination	20
Figure B.5 – Permanent damage due to contamination	21
Figure C.1 – Paten-cord inspection and port inspection	22
Table 1 – Applicable cleaning tools and machines for typical optical connec	tor parts12

IEC TR 62627-01:2016 © IEC 2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –

Part 01: Fibre optic connector cleaning methods

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 TR 62627-01, which is a Technical Report, has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

IEC TR 62627-01:2016 © IEC 2016

- 5 -

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

- a) restructure of clauses;
- b) addition of some terms and definitions;
- c) addition of information on cleaning tools and machines;
- d) addition of information on dust caps;
- e) addition of applicable cleaning tools and machines for optical connectors.

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

Enquiry draft	Report on voting
86B/3926/DTR	86B/3943A/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.

A list of all parts in the IEC 62627 series, published under the general title Fibre optic interconnecting devices and passive components, can be found on the IEC website.

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.

IEC TR 62627-01:2016 © IEC 2016

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –

Part 01: Fibre optic connector cleaning methods

1 Scope

This part of IEC 62627, which is a Technical Report, details cleaning methods for fibre optic connectors. It includes typical cleaning tools and machines, and cleaning procedures. Other cleaning methods may exist. The impact of contamination and the reasons for connector visual inspection and cleaning are described in Annex B. This Technical Report does not address the visual inspection criteria, which are covered in IEC 61300-3-35: 2015.

Optical fibre patch cords are handled by the operators and maintenance staff of optical network systems. This Technical Report may be used as a guideline to prepare instruction manuals for those involved in optical system maintenance and operation.

This Technical Report covers fibre optic connector plugs, optical adaptors, optical receptacles (excluding optical transceivers) and dust caps. Guidelines for optical connector end-face cleaning methods for receptacle style optical transceivers are covered in IEC TR 62572-4.

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.

There are no normative references in this document.