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Fibre optic interconnecting devices and passive components

Part 01: Fibre optic connector cleaning methods

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National foreword

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The UK participation in its preparation was entrusted by Technical Committee GEL/86, Fibre optics, to Subcommittee GEL/86/2, Fibre optic interconnecting devices and passive components.

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

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TECHNICAL REPORT

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

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –

Part 01: Fibre optic connector cleaning methods

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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.

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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.

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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.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Cleaners

3.1.1
adhesive backed stick type cleaner
cleaning tool for optical connector end-faces, receptacles and optical connector adaptors using a soft adhesive backing at the end of a stick

3.1.2
air duster
canned air
cleaning tool where compressed air is blown from a nozzle of a can

3.1.3
gas and vacuum type cleaning machine
optical connector end-face cleaning machine in which volatile liquid solvent (gas) is injected and extracted from a nozzle

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3.1.4
pen type cleaner
probe type cleaner
cleaning tool for optical connector end-faces, receptacles and optical connector adaptors where a tape cleaning cloth at the top of the tool moves and cleans

3.1.5
reel type cleaner
cassette type cleaner
optical connector plug end-face cleaning tool, in which a cleaning cloth roll is packed in a cassette box, with a small window for cleaning

3.1.6
stick type cleaner
swab type cleaner
optical connector receptacle and optical connector adaptor end-face cleaning tool in which a cleaning cloth is attached to the top of a stick

3.2 Optical connector parts

3.2.1
bulkhead adaptor
component in which two or more plugs may be mated

Note 1 to entry: A bulkhead adaptor has one or more alignment sleeves in which two or more ferrules are aligned.

3.2.2
dust cap
cover or cap which is attached to an optical connector plug, an optical connector adaptor or an optical receptacle when the optical connector is not connected to protect it from contamination

3.2.3
exposed plug end-face
EPE
fibre optic plug without any fixed optical end-face protection, that may be held in the hand

EXAMPLE *End of a patch cord.*

Note 1 to entry: The ferrule is exposed to the air and is not confined within an alignment sleeve of a bulkhead adaptor or device port. The end-face of the plug is easy to access and may be brought into contact with cleaning material.

3.2.4
port
open fibre optic alignment sleeve which contains a fibre optic plug end-face to which a fibre optic plug may be mated

Note 1 to entry: In the case of a bulkhead adaptor, it is the open side of the adaptor after a fibre optic plug has been inserted into one side. In the case of an optical device, it is the opening into which a user of the device will plug a patch cord. The mating side of a port can only be accessed through the alignment sleeve. Therefore the cleaning material shall be brought to the end-face through the alignment sleeve.

3.2.5
power blocking shuttered adaptor
optical adaptor that has a shutter to block optical power emitted from an optical connector plug

Note 1 to entry: An optical adaptor with shutter should have a structure that, when two optical connector plugs are interfaced and the optical connector plug is removed at the shuttered side, the shutter automatically moves to block emitted optical power. There are two types of optical adaptors with shutter that have already been commercialized: one focuses on blocking the optical power and the other focuses on dust-proofness. Generally, power blocking shuttered adaptors that focus on blocking power often have a metal shutter within the optical adaptor.

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