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Fibre optic interconnecting devices and passive components – Part 06: Mechanical design proving nutation test results for reinforced fibre cable terminated with optical connectors for high density patching applications

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IEC TR 62627-06, which is a technical report, has been prepared by subcommittee SC86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

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

Enquiry draft	Report on voting
86B/3714/DTR	86B/3751/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 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- withdrawn,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.

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INTRODUCTION

Optical connectors are widely used in a variety of optical communication systems. These connectors are sometimes used in high density equipment. When an optical fibre cable assembly is connected to a receptacle port, the optical fibre cable assembly connected to an adjacent port may be pulled to one side. During this operation, the pulling force has the potential to act on the optical fibre cable in an oblique direction. When an optical fibre cable assembly is pulled to one side, the tensile force acts on the optical connector in various directions. The optical connector has to possess mechanical durability to withstand the tensile force imposed on it, and an allowable tensile force should be defined to ensure that the system can continue to operate. Therefore test methods are used to evaluate the mechanical durability when an optical fibre cable assembly is pulled laterally. One of these tests methods is nutation.

The IEC Japan National Committee (JPNC) undertook research on a nutation test for optical connectors terminated with reinforced fibre cable.

FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS –

Part 06: Mechanical design proving nutation test results for reinforced fibre cable terminated with optical connectors for high density patching applications

1 Scope

This part of IEC 62627, which is a technical report, describes the results of mechanical design proving tests for a high density systems application, carried out using the nutation test according to IEC 61300-2-35, performed on reinforced fibre cable terminated with optical connectors. A tensile load is suggested for the design proving requirements to be used to ensure that connectors meet the mechanical design requirements of connectors for specific application.

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 60794-2-50, *Optical fibre cables – Part 2-50: Indoor cables – Family specification for simplex and duplex cables for use in terminated cable assemblies*

IEC 61300-2-35, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-35: Tests – Cable nutation*

IEC 61300-2-51, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 2-51: Tests – Fibre optic connector test for transmission with applied tensile load – Singlemode and multimode*