



BSI Standards Publication

Aerospace series — Cables, optical 125 μm diameter cladding

Part 401: Tight structure bend insensitive 50 μm /125 μm GI fibre nominal, 1,8 mm outside diameter — Product standard

National foreword

This British Standard is the UK implementation of EN 4641-401:2024.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

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

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Date	Text affected

English Version

Aerospace series - Cables, optical 125 μm diameter
cladding - Part 401: Tight structure bend insensitive 50
 μm /125 μm GI fibre nominal, 1,8 mm outside diameter -
Product standard

Série Aérospatiale - Câbles, optiques, diamètre
extérieur de la gaine optique 125 μm - Partie 401 :
Câble à structure serrée, fibre à gradient d'indice 50
 μm /125 μm insensible à la courbure, diamètre
extérieur 1,8 mm - Norme de produit

Luft- und Raumfahrt - Lichtwellenleiterkabel,
Mantelaußendurchmesser 125 μm - Teil 401:
Festaderaufbau 50 μm /125 μm GI-Faser,
Kabelaußendurchmesser 1,8 mm - Produktnorm

This European Standard was approved by CEN on 17 June 2024.

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European foreword

This document (EN 4641-401:2024) has been prepared by ASD-STAN.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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1 Scope

This document specifies the general characteristics, conditions for qualification, acceptance and quality assurance for a fibre optic cable with a bend-insensitive, 50 µm/125 µm Graded Index fibre core, 1,8 mm outside diameter for non pull-proof contact designs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2424, *Aerospace series — Marking of aerospace products*

EN 2812, *Aerospace series — Stripping of electric cables*

EN 3475-601, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 601: Smoke density*

EN 3745-201, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 201: Visual examination*

EN 3745-202, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 202: Fibre dimensions*

EN 3745-203, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 203: Cable dimensions*

EN 3745-205, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 205: Cable longitudinal dimensional stability*

EN 3745-301, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 301: Attenuation*

EN 3745-302, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 302: Numerical aperture*

EN 3745-303, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 303: Bandwidth*

EN 3745-305, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 305: Immunity to ambient light coupling*

EN 3745-306,¹ *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 306: Variation of attenuation during temperature cycling*

EN 3745-401, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 401: Accelerated ageing*

¹ Published as ASD-STAN prEN at the date of publication of this document, available at: <https://www.asd-stan.org/>.

EN 3745-404, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 404: Thermal shock*

EN 3745-405, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 405: Low/High temperature bend test*

EN 3745-407, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 407: Flammability*

EN 3745-410, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 410: Thermal life*

EN 3745-411, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 411: Resistance to fluids*

EN 3745-412, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 412: Humidity resistance*

EN 3745-501, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 501: Optical fibre proof test*

EN 3745-503, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 503: Scrape abrasion*

EN 3745-504, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 504: Micro bending test*

EN 3745-505, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 505: Cable tensile strength*

EN 3745-506, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 506: Impact resistance*

EN 3745-507, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 507: Cut-through*

EN 3745-508, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 508: Torsion*

EN 3745-509, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 509: Kink test*

EN 3745-510, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 510: Bending test*

EN 3745-511, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 511: Cable to cable abrasion*

EN 3745-512, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 512: Flexure endurance*

EN 3745-513, *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 513: Crush resistance*