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Responsible committee: ACE/6 Aerospace avionic electrical and fibre optic technology

Interested committees:

Title: Draft BS EN 4641-001 Aerospace series - Cables, optical. Part 001: Technical specification.

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## Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

## UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

## Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

## Template for comments and secretariat observations

|                  |                        |
|------------------|------------------------|
| Date: xx/xx/20xx | Document: ISO/DIS xxxx |
|------------------|------------------------|

| 1  | 2                                          | (3)                          | 4               | 5                                                                                                                                  | (6)                                                                      | 7                                                  |
|----|--------------------------------------------|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------|
| MB | Clause No./ Subclause No./Annex (e.g. 3.1) | Paragraph/ Figure/Table/Note | Type of comment | Comment (justification for change) by the MB                                                                                       | Proposed change by the MB                                                | Secretariat observations on each comment submitted |
|    | 3.1                                        | Definition 1                 | ed              | Definition is ambiguous and needs clarifying.                                                                                      | Amend to read '...so that the mains connector to which no connection...' |                                                    |
|    | 6.4                                        | Paragraph 2                  | te              | The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK. | Delete reference to UV photometer.                                       |                                                    |

English Version

## Aerospace series - Cables, optical - Part 001: Technical specification

Série aérospatiale - Câbles, optiques - Partie 001 :  
Spécification technique

Luft- und Raumfahrt - Kabel, optisch - Teil 001:  
Technische Spezifikation

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning :** This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (prEN 4641-001:2023) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (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 is currently submitted to the CEN Enquiry.

This document will supersede EN 4641-001:2018.

## 1 Scope

This document specifies the general characteristics, conditions for qualification, acceptance and quality assurance, as well as the test methods and groups for fibre optic cables with a cladding of 125 µm outside diameter.

## 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 3745-100,<sup>1</sup> *Aerospace series — Fibres and cables, optical, aircraft use — Test methods — Part 100: General*

EN 3838, *Aerospace series - Requirements and tests on user-applied markings on aircraft electrical cables*

EN 60793-1-30, *Optical fibres - Part 1-30: Measurement methods and test procedures - Fibre proof test (IEC 60793-1-30)*

EN 60793-1-41, *Optical fibres - Part 1-41: Measurement methods and test procedures – Bandwidth (IEC 60793-1-41)*

EN 60793-1-42, *Optical fibres - Part 1-42: Measurement methods and test procedures - Chromatic dispersion (IEC 60793-1-42)*

ISO 2574, *Aircraft — Electrical cables — Identification marking*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3745-100 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **tight simplex cable**

structure that allows no movement between the secondary buffer (or buffer) and the outer layers

### 3.2

#### **semi-loose simplex cable**

structure that allows a limited movement of the secondary buffer (or buffer) compared to the outer layers

### 3.3

#### **loose simplex cable**

structure that allows an unlimited movement of the secondary buffer compared to the outer layers

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<sup>1</sup> And all parts quoted in this document.

**3.4****tight multifibre cable**

structure that allows no movement between the fibres and the outer layers

**3.5****semi loose multifibre cable**

structure that allows a limited movement of the secondary buffers (or buffers or inner sheaths) compared to the outer layers

**3.6****loose multifibre cable**

structure that allows an unlimited movement of the fibres compared to the outer layers

**3.7****tight buffer**

structure that allows no movement between fibre and secondary buffer (or buffer)

**3.8****loose buffer**

structure that allows an unlimited movement of the fibre compared to the secondary buffer (or buffer)

**4 Required characteristics****4.1 Description**

The characteristics of the cables, tested according to the methods described hereafter shall comply with the values defined in the product standard.

**4.2 Materials and construction of cables**

The configuration, dimensions and mass of the cable shall meet the values specified in the product standard as well as the requirements hereafter.

Materials and colour shall meet the product standard:

- configuration (see Clause 3, no. of fibre, brais, jackets);
- dimensions;
- mass;
- colours;
- materials.

**4.3 Fibre construction**

The fibre shall consist of a single all silica core and a silica cladding protected by a primary coating in accordance with the product standards.

See Figure 1.