

Braided linen (flax) lacing cord for aerospace purposes

ICS 49.025.60

Confirmed
December 2009

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee ACE/22, Cords, ropes and threads for aerospace purposes, upon which the following bodies were represented:

Linen Sewing Threads Manufacturers' Association
Ministry of Defence — UK Defence Standardization
Society of British Aerospace Companies Ltd.

This British Standard, having been prepared under the direction of the Engineering Sector Policy and Strategy Committee, was published under the authority of the Sector Policy and Strategy Committee on 17 October 2002

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First published BS F 35:1919
Second edition BS 2F 35:1924
Third edition BS 3F 35:1930
Fourth edition BS 4F 35:1938
Fifth edition BS 5F 35:1960
Sixth edition BS 6F 35:1975
Seventh edition BS 7F 35:1985
Eighth edition BS 8F 35:2002

The following BSI references relate to the work on this standard:

Draft for comment 00/707929 DC
Committee reference ACE/22

ISBN 0 580 37033 X

Amendments issued since publication

Amd. No.	Date	Comments

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Foreword

This British Standard, prepared under the direction of Technical Committee ACE/22, is one of a series for textiles of a quality suitable for aerospace purposes. It supersedes BS 7F 35:1985 which is withdrawn.

NOTE The previous edition, BS 7F 35:1985, differed from the earlier edition in that it required all cord be supplied rotproofed.

This new edition incorporates all earlier amendments, updates references and improves nomenclature in line with other standards in the same series.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

WARNING NOTES

This standard calls for the use of substances and/or test procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and in no way absolves either the supplier or the user from statutory obligations relating to health and safety at any stage of manufacture or use.

This standard specifies pentachlorophenyl laurate (PCPL) as the only approved rotproofing treatment for aerospace textiles. Alternative treatments are under development, and this standard will be updated to delete PCPL as soon as an approved alternative treatment for aerospace textiles is available.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii pages 1 to 3 and a back cover.

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1 Scope

This British Standard specifies requirements for a braided linen (flax) lacing cord for aerospace purposes.

NOTE The latest revision of an Aerospace Series standard is indicated by a prefix number.

2 Normative references

The following referenced documents are indispensable for the application 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.

BS F 100, *Procedure for inspection and testing of textiles*.

BS 2087-1, *Preservative treatments for textiles — Specification for treatments*.

BS EN ISO 2060:1995, *Textiles — Yarn from packages — Determination of linear density (mass per unit length) by the skein method*

3 General

In addition to the requirements specified in Clause 4, Clause 5, Clause 6 and Clause 7 of this standard the requirements and tests given in the latest edition of BS F 100 as specified in Table 1, shall apply.

Table 1 — General requirements (given in BS F 100)

Section of BS F 100	Section title	Requirements and tests
1	General	All requirements
2	Quality requirements	Requirements for manufacture of cordage only Requirements for dyed textiles except those related to fabric intended for coating Requirements for dimensions and tolerances of length of cordage except those relating to laid ropes Requirements for freedom from corrosive impurities (see BS F 100, Section 4) Requirements for freedom from faults of braided cordage only
3	Physical tests	Tests for breaking strength and extension under force Tests for plaits per unit length in braided cordage
4	Chemical tests	Test for residual alkali solubility If required by BS F 100, Section 2: — test for conductivity of aqueous extract; — test for pH value of aqueous extract; — test for water soluble chloride; — test for water soluble sulfate.

4 Yarn

4.1 The cord shall be manufactured from flax fibre (*Linum usitatissimum*).

4.2 The mass of the yarn shall have been reduced by not less than 10 % by boiling.

NOTE The degree of boiling of the yarn should be determined from the manufacturer's records, if available. Otherwise, the residual alkali solubility of the cord should be determined and should not exceed 10 %.

5 Finish

5.1 Condition of material

The cord shall be supplied in one of the following conditions:

- a) undyed and rotproofed;
- b) undyed, rotproofed and wax finished;
- c) dyed and rotproofed;
- d) dyed, rotproofed and wax finished.

5.2 Dyeing

Where dyeing is required, the colour shall be specified either by reference to a British Standard, e.g. BS 381C, or otherwise by pattern.

5.3 Rotproofing

The cord shall be treated with pentachlorophenyl laurate (PCPL) from aqueous emulsion, in accordance with BS 2087-1, normal process.

5.4 Wax finishing

Where wax finishing is required, beeswax substitute microcrystalline hydrocarbon wax shall be used and the added mass due to the wax shall be $(30^{+5}_{-10})\%$. Prior to waxing, the cord shall have been rotproofed in accordance with 5.3.

5.5 Surface finish

Cord supplied in accordance with item 5.1a) or 5.1c) shall have a soft, smooth finish, but substances which may promote microbiological growth (e.g. starch or modified starch) shall not be applied.

6 Construction and properties

The cord shall conform to the requirements given in Table 2 and the braid interlacing shall be one under two over two.

Table 2 — Construction and properties

Nominal resultant linear density tex	Number of carriers	Number of yarns per carrier	Plaits per metre	Length per unit mass ^a m/kg	Minimum breaking strength	
					unwaxed N	waxed N
910	16	1	355 ± 40	1 100 ± 100	220	180

^a The length per unit mass shall be determined in accordance with BS EN ISO 2060:1995, Option 1. The values stated for length per unit mass exclude the mass of added dye and/or finishes.

7 Identification

The cord shall be identified for ordering purposes by the number of this British Standard, i.e. BS 8F 35, together with the finish and, if required dyed, the colour.

NOTE This identification may be codified. For example, cord required dyed black and wax finished may be identified as “BS 8F 35/black/wax finished”.

Bibliography

Standards publications

BS 381C:1996, *Specification for colours for identification, coding and special purposes.*

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