

Specification for

**140 g/m<sup>2</sup> linen (flax)  
fabric and serrated  
edge strip for aerospace  
purposes**

Confirmed  
February 2008

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Aerospace Standards Policy Committee (ACE/-) to Technical Committee ACE/54, upon which the following bodies were represented:

British Fabric Association  
British Rubber Manufacturers Association Ltd.  
British Textile Confederation  
Ministry of Defence  
Society of British Aerospace Companies Limited  
Society of Dyers and Colourists  
Textile Finishers' Association

This British Standard, having been prepared under the direction of the Aerospace Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 August 1992

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The following BSI references relate to the work on this standard:  
Committee reference ACE/54  
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## Amendments issued since publication

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# Foreword

This British Standard, prepared under the direction of the Aerospace Standards Policy Committee, is one of a series of a quality suitable for aerospace purposes. It is a revision of BS 8 F 1:1975 which is withdrawn. During its preparation changes have been made to the technical requirements: primarily, the maximum mass per unit area has been increased by  $10 \text{ g/m}^2$  for all fabric finishes. The quality requirements specified in BS F 100 have also been identified.

The quality assurance authority referred to in this standard is as stated in the contract or order, or the accredited representative of the authority stated as instructed by the prime contractors.

**WARNING NOTE 1.** 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 stability 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.

**WARNING NOTE 2.** This standard specifies pentachlorophenyl laurate (PCPL) as the only approved rotproofing treatment for aerospace fabrics. Alternative treatments are under development, and this standard will be updated to delete PCPL as soon as an approved alternative treatment for aerospace fabrics is available.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

## Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

# Section 1. General

## 1.1 Scope

This British Standard specifies a linen fabric and strips cut from it for use primarily on aircraft surfaces. Section 2 details the fabric and section 3 details the strip.

NOTE 1 The information to be supplied by the purchaser in the contract or order is listed in Annex A.

NOTE 2 The latest revision of an Aerospace Series standard is indicated by a prefix number.

## 1.2 References

### 1.2.1 Normative references

This British Standard incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by updating or revision.

### 1.2.2 Informative reference

This British Standard refers to a publication that provides information. The edition of this publication current at the time of issue of this standard is listed on the inside back cover, but reference should be made to the latest edition.

## 1.3 General requirements

In addition to requirements specified in sections 2 and 3 of this standard, the following sections and clauses of the latest edition of BS F 100 shall apply (see Table 1).

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

Section	Title	Requirements and tests
1	General	All requirements
2	Quality requirements	Requirements for the manufacture of wide fabrics Requirements for dimensions and tolerances (general and wide fabrics) Requirements for dyed textiles Requirements for freedom from faults: wide fabrics Requirements for freedom from corrosive impurities <sup>a</sup>
3	Physical tests	Tests for the determination of the number of threads per unit length in woven fabrics Test for mass: mass per unit area of wide fabrics Breaking strength and extension under force: wide fabrics Test for doping properties
4	Chemical tests	If required by section 2, further tests for freedom from corrosive impurities Test for alkali solubility

<sup>a</sup> Applicable to scoured and dyed fabrics only.

## Section 2. Linen (flax) fabric

### 2.1 Manufacture

**2.1.1** The fabric shall be manufactured from flax yarn.

NOTE Yarns of the following linear densities have been found suitable.

- a) before boiling in the yarn 23–24 tex  
b) when boiling in the rove before spinning applies 20–21 tex

**2.1.2** The mass of the yarn shall be reduced by either:

- a) not less than 12.5 % by boiling in the yarn; or  
b) not less than 14 % by boiling in the rove.

**2.1.3** The yarn shall have a maximum residual alkali solubility of 10.0 %.

**2.1.4** The weave shall be plain.

### 2.2 Finish

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

- a) loomstate and cropped; or  
b) loomstate, cropped and singed; or  
c) finished for doping; or  
d) scoured and dyed.

NOTE The finish required should be stated in the purchaser's contract or order (see A.1).

### 2.3 Finishing for doping

NOTE It will be necessary to obtain a standard sample from the quality assurance authority (see foreword) to carry out the required visual comparisons.

**2.3.1** The fabric shall be calendered to a smooth finish.

**2.3.2** The doping properties shall conform to BS F 100.

### 2.4 Dyeing

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

NOTE The requirement for dyeing and the colour should be stated in the purchaser's contract or order (see A.1).

### 2.5 Properties of the finished fabric

The finished fabric shall conform to the appropriate requirements of Table 2.

### 2.6 Make up

The fabric shall be delivered free from creases and either:

- a) lapped full width on drum boards having a width of 150 mm and a thickness of nominally 12.5 mm; or  
b) rolled full width on tubes with an outside diameter of nominally 45 mm.

NOTE The make up required should be stated in the purchaser's contract or order (see A.1).

### 2.7 Identification

The fabric shall be identified for ordering purposes by the number, date and section of this British Standard, i.e. BS 9F 1:1992, section 2, together with the finish and, if required dyed, the colour.

Table 2 — Properties of the finished fabric

Finish	Minimum no. threads/cm		Maximum mass per unit area g/m <sup>2</sup>	Minimum average breaking strength	
	Warp	Weft		Warp N/50 mm	Weft N/50 mm
Loomstate and cropped	29	31	160	680	725
Loomstate cropped and singed	29	31	155	680	715
Finished for doping	29	30	155	680	700
Scoured and dyed	30	28	165	620	590

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## Section 3. Serrated strip

### 3.1 Manufacture

**3.1.1** The serrated strip shall be cut lengthwise from fabric which conforms to section 2 of this standard and which has been finished for doping.

**3.1.2** Each edge of the strip shall have 4 to 8 serrations per 25 mm and the depth of each serration shall not exceed 3.5 mm.

### 3.2 Width

The width shall be measured between the peaks and the tolerance on the width shall not exceed  ${}^{+4}_{0}$  mm.

NOTE The width required should be stated in the purchaser's contract or order (see A.2).

### 3.3 Rotproofing

**3.3.1** If required, the fabric, prior to cutting, shall be rotproofed with pentachlorophenyl laurate (PCPL) in accordance with BS 2087-1:1992, normal process.

**3.3.2** No other rotproofing agent shall be used.

NOTE The requirement for rotproofing should be stated in the purchaser's contract or order (see A.2).

### 3.4 Identification

The serrated strip shall be identified for ordering purposes by the number, date and section of this British Standard, i.e. BS 9F 1:1992, section 3, the width and, if required, the rotproofing.

NOTE This identification may be codified, i.e. a 100 mm wide rotproofed strip may be identified as:  
BS 9F 1:1992, section 3/100 mm/PCPL.

## **Annex A (informative)** **Information to be supplied by the purchaser**

### **A.1 Linen (flax) fabric**

The following information should be stated by the purchaser in the contract or order for linen (flax) fabric:

- a) the number of this British Standard (i.e. BS 9F 1);
- b) the finish required (see **2.2**);
- c) the colour, if required dyed (see **2.4**);
- d) the make up (see **2.6**).

### **A.2 Serrated strip**

The following information should be stated by the purchaser in the contract or order for serrated strip:

- a) the number of this British Standard (i.e. BS 9F 1);
- b) the colour, if required dyed (see **2.4**);
- c) the width required (see **3.2**);
- d) rotproofing, if required (see **3.3**).



## List of references (see 1.2)

### Normative references

#### BSI standards publications

BRITISH STANDARDS INSTITUTION, London

BS 5F 100:1991, *Procedure for inspection and testing of textiles for aerospace purposes*<sup>1)</sup>.

BS 2087, *Preservative textile treatments*.

BS 2087-1:1992, *Specification for treatments*.

### Informative references

#### BSI standards publications

BRITISH STANDARDS INSTITUTION, London

BS 381C:1988, *Specification for colours for identification, coding and special purposes*.

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<sup>1)</sup> Edition current at time of publication (see 1.3).

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