

OBSOLESCENT
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Specification for

Cartridge fuses for aircraft —

Part 1: General Requirements

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Foreword

It is intended that this British Standard, when completed, shall cover the whole range of fuses for aircraft applications, in a series of separate parts. Unless otherwise stated, the requirements of Part 1 will be applicable to the items detailed in subsequent Parts of the standard.

Although fuse-units and fuse-links are listed separately, and are usually made by different manufacturers, the standard does not cover either of these items individually. Except for tag type fuse-links designed for use as complete fuses, fuse-links and fuse-units are required to be tested as part of a complete fuse.

This Part of the standard requires reference to the following:

- BS E 21, *Pren type electric cables for aircraft.*
- BS 2G 100, *General requirements for electrical equipment and indicating instruments for aircraft.*
- BS 88, *Electric fuses for circuits of voltage-ratings up to 600 volts.*
- BS 89, *Electrical indicating instruments.*
- BS G 177, *Nyvin type electrical cables for aircraft.*
- BS G 178, *Crimped joints (non-insulated) for general purpose electrical cables for aircraft.*

NOTE 1 Where metric equivalents are stated the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, “*Conversion factors and tables*”.

Tables for the conversion of inches to millimetres are given in Appendix C.

NOTE 2 The reference to BS 88, “*Electric fuses for circuits of voltage-ratings up to 600 volts*”, is to the 1952 edition and not to that of 1967.

A further revision of BS 88 is now in hand to align it with IEC Publication 269, “*Low-voltage fuses with high breaking capacity for industrial and similar purposes*”. When this is completed BS G 176 will be reviewed and revised taking into account the relevant portions of the revised BS 88.

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 10 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.

Amendments issued since publication

Amd. No.	Date of issue	Comments
4674	September 1962	
1038	December 1972	
4104	November 1982	Indicated by a sideline in the margin

This British Standard, having been approved by the Aircraft Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council of the Institution on 6 May 1960

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The following BSI references relate to the work on this standard:
Committee reference ACE/43
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Obsolescent (by Amendment No. 3)

The need for the equipment covered by this British Standard has been reviewed and it has been decided that, in the interests of rationalization, it should be regarded as obsolescent and not therefore used for new designs. The standard will be withdrawn in due course.

1 Scope

This part of BS G 176, specifies the requirements for the construction, performance and testing of cartridge fuses for aircraft.

2 Definitions

The definitions of the terms used in this British Standard are those laid down in BS 88, with the following addition:

fuse-unit

a fuse (i.e., a complete device as defined in BS 88) but not including the fuse-link

3 General construction

The fuses shall comply with the relevant requirements of BS 2G 100, except when stated otherwise by this specification.

Section 1. Particular requirements**4 Dimensions**

The dimensions of the fuses shall be in accordance with those shown in the relevant Part of this British Standard.

5 Temperature and altitude ratings

The fuses shall be suitable for use at all ambient temperatures from -65°C to $+85^{\circ}\text{C}$ and at all altitudes up to 60 000 ft (18 300 m).

6 Voltage, current ratings and category of duty

The voltage, current ratings and category of duty of the fuses shall be in accordance with the relevant part of this British Standard.

The categories of duty referred to in this British Standard are those listed in BS 88.

7 Vibration, crash landing, climatic proofing and acceleration

The fuses shall comply with the requirements of BS 2G 100-2 in respect of:

- a) vibration, Grade B;

- b) acceleration, Class 1A, Grade C, and crash conditions Category E, except that the value of acceleration shall be 25 g;
- c) climatic Class 1 equipment.

8 Temperature rise

When the fuse is carrying nominal rated current the temperature rise in the attached cable shall be not more than 40 deg. C for ferrule-type fuse-links, or 55 deg. C for tag-type fuse-links.

9 Time/current characteristics (fuse-links)

The time/current characteristics of fuse-links shall comply with the requirements of the relevant Part of this British Standard.

10 Endurance

The fuse shall be capable of complying with the requirements of the test specified in Clause 28.

11 External connections

Except where the fuse is mounted inside equipment which is fitted with anti-vibration mountings, when soldered connections may be used, external connections shall be of the screwed and/or locked type designed to take a cable, with cable termination if fitted, appropriate to the maximum current rating of the fuse. The terminals shall be so designed that, when fitted, the cable connection cannot work loose under any conditions of use.

A fuse-unit made in compliance with this British Standard shall have its fuse-carrier, fuse-link, fuse-contacts and fixed contacts so shielded as to protect persons from accidental contact with live metal while the fuse-carrier is being withdrawn. Fuse-carriers shall be of such form as to protect persons from shock or burns.

12 Marking

- a) Every fuse-link shall be clearly and indelibly marked with its nominal current rating. The manufacturer's name or identification and the number of this British Standard, with the relevant fuse type letter, e.g., "BS G 176/A", shall be marked either on the fuse-link or on the package.
- b) Every fuse-unit shall be clearly and indelibly marked with the following information:
 - i) the number of this British Standard and the fuse type letter, e.g., "BS G 176/A".
 - ii) maximum current and voltage ratings, a.c. and d.c.;
 - iii) manufacturer's name or identification.