

Sleeves and moulded components for aircraft electric cables and equipment wires —

Part 2: Specification for slip-on sleeves for identification purposes

ICS 49.060

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Committees responsible for this British Standard

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- British Airways
- British Cable Makers' Confederation
- British Rubber Manufacturers' Association
- Civil Aviation Authority (Airworthiness Division)
- Federation of the Electronics Industry
- Ministry of Defence
- Society of British Aerospace Companies

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Foreword

This Part of BS G 198 has been prepared by Technical Committee ACE/6 and specifies requirements for slip-on sleeves for the identification of aircraft electric cables and insulated equipment wires. BS G 198 is published in the following separate Parts.

- *Part 1: Specification for elastomeric sleeves for binding and identification;*
- *Part 2: Specification for slip-on sleeves for identification purposes;*
- *Part 3: Specification for heat-shrinkable sleeving for binding, insulation and identification;*
- *Part 4: Specification for fluoropolymer heat-shrinkable sleeving for binding and insulation;*
- *Part 5: Specification for heat-shrinkable moulded shapes¹⁾.*

It is envisaged that there will be a further Part on heat-shrinkable dual wall sleeves.

This Part is a revision of BS 2G 198-2:1982. It incorporates all amendments since the publication of BS 2G 198-2:1982, which is superseded and withdrawn. It refers to slip-on sleeves in a range of colours, diameters, and lengths suitable for identification of electric cables and insulated equipment wires in aircraft. The sleeves may also be used for other identification purposes, e.g. marking of pipe lines, but they are not suitable for binding.

The sleeve type numbers used in British Standard 2G 198-2:1982 are retained in this revision.

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 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. It is strongly recommended that users of this standard refer to BFGP Publication No. 284/1 [1].

WARNING NOTE 2. When heated above 260 °C, PTFE will begin to degrade and the rate of degradation will increase with increasing temperature. The gases produced during degradation will vary according to the temperature and other conditions but will invariably contain toxic components and good ventilation is therefore essential.

WARNING NOTE 3. It is strongly recommended that users of this standard refer to BFGP Publication No. 254/1 [2].

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 12, 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.

¹⁾ In preparation.

1 Scope

This Part of BS G 198 specifies the design, performance, quality assurance requirements and methods of test for the following type of polytetrafluoroethylene (PTFE) slip-on sleeves suitable for identification of electric cables and insulated equipment wires in aircraft. The design of the sleeves is such that they do not expand in diameter.

Type 7. These are sleeves which, when fitted, are for use in the following temperature ranges:

- a) – 65 °C to 250 °C for at least 20 000 h²⁾;
- b) up to 300 °C for at least 168 h³⁾;
- c) up to 350 °C for at least 4 h⁴⁾.

These sleeves are resistant to fuels, lubricants and hydraulic fluids, including ester-based lubricants and ester-based hydraulic fluids.

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

Recommendations for the storage of finished sleeves are given in Annex A.

2 References

2.1 Normative references

This Part of BS G 198 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on page 12. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this Part of BS G 198 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative reference

This Part of BS G 198 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on page 12, but reference should be made to the latest editions.

3 Information and requirements to be agreed and documented

The following information to be supplied by the purchaser shall be fully documented. Both the definitive requirements specified throughout the standard and the following documented items shall be satisfied before a claim of compliance with the standard can be made and verified.

- a) the number of this British Standard (i.e. BS 3G 198-2:1997);
- b) the total quantity required;
- c) cut length, if required, (see 8.2) and tolerance on cut length, if the tolerance required is different from Table 3;
- d) whether the sleeves are to be tested in any further fluids in addition to those given in Table 7;
- e) codified identification (see 12.1 note 1);
- f) packaging requirements (see 12.2);
- g) cleaning fluid (see Table 7);
- h) the dimensional requirements, if non-standard (see 8.2).

4 Materials

4.1 Sleeves shall be made from PTFE. No reprocessed polymer shall be used.

4.2 Overlays may be used to provide added protection for the sleeve or marking, provided the finished sleeves conform to the requirements of 11. For the purposes of this standard the overlay shall be regarded as part of the sleeve.

5 Colour

5.1 The colour of type 7 sleeves shall be translucent or recognizable as specified in BS 6746C:1993.

5.2 The colour of sleeves shall be uniform and evenly dispersed throughout.

6 Finish

The sleeves shall be smooth and free from bubbles, pinholes, creases and other defects that may affect performance.

²⁾ The procedures described in BS 5691-2:1995 for evaluation of thermal endurance are not readily applicable to PTFE. However, experience of product performance indicates that PTFE sleeving may be suitable for inclusion in systems for operation at temperatures up to 260 °C.

³⁾ When assessed in accordance with 11.12.

⁴⁾ When assessed in accordance with 11.5.

7 Printing

7.1 When required, sleeves shall be indelibly printed with a character or legend to the specific requirements of the purchaser and such printing shall not be affected by normal handling.

7.2 The printing shall be blue-black except on sleeves that would not provide adequate contrast. The characters shall be clearly printed, of uniform density and shall be legible with normal reading vision.

The characters shall be underlined or have a dot following the legend when it is capable of being misinterpreted e.g. M. M W. W 6. 6 9. 9

The printing shall be longitudinal on the sleeve. (See Figure 1).

7.3 When sleeves are marked more than once, the printing shall be equally spaced around the sleeve. The characters shall be of a height such that the total number of upper case characters shall cover at least 25 % of the circumference. Lower case characters shall be the same point size as the upper case characters.

NOTE 1 The preferred sizes and repetition of characters are given in Table 1.

NOTE 2 See clause 3 for ordering procedure.

7.4 The production routine test for sleeves shall be 25 strokes of tissue paper impregnated with isopropyl alcohol (IPA) after which the printing shall be legible with normal reading vision.

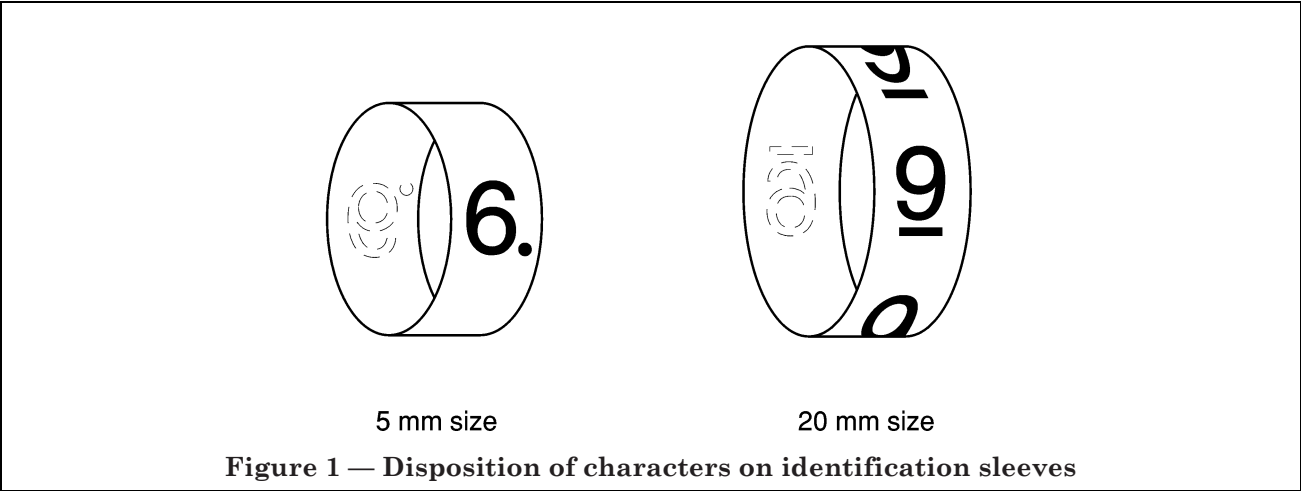


Table 1 — Size of printed characters

Nominal internal diameter of sleeve	Nominal height of character	Preferred number of times printed around periphery of sleeve
mm	mm	
0.5 to 1.6	2.0 (1.6 min)	1
1.61 to 4.0	2.5	2
4.1 to 10.0	4.5	2
10.1 to 25.0	6.0	4