

Specification for

Rubber bonded compressed aramid fibre jointing material for aerospace purposes

UDC 629.7.063:62-762.4:677.143.3:678.4.029.5

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Aerospace Standards Committee (ACE/-) to Technical Committee ACE/25 upon which the following bodies were represented:

- British Compressed Gases Association
- British Narrow Fabrics Association
- British Rubber Manufacturers' Association
- Ministry of Defence
- Society of British Aerospace Companies Limited
- Coopted members

This British Standard, having been prepared under the direction of the Aerospace Standards Committee, was published under the authority of the Board of BSI and comes into effect on 30 January 1987

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The following BSI references relate to the work on this standard:
Committee reference ACE/25
Draft for comment 85/75710 DC

ISBN 0 580 15343 6

Amendments issued since publication

Amd. No.	Date of issue	Comments

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Foreword

This British Standard, prepared under the direction of the Aerospace Standards Committee, may in certain applications be an alternative to BS F 125. The attention of the designer is particularly drawn to limitations in use at high temperatures and/or certain fluid environments.

This British Standard deals only with asbestos-free jointing materials.

WARNING. This British Standard calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to the technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Attention is drawn particularly to the Health and Safety at Work etc. Act 1974 in respect of the control of respirable dusts.

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, 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 Scope

This British Standard specifies requirements for the manufacture and testing of rubber bonded compressed aramid (aromatic polyamide) fibre jointing material for aerospace purposes, with or without wire mesh reinforcement and with or without graphite treated surfaces.

NOTE 1 The titles of the publications referred to in this standard are listed on the inside back cover.

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

2 Definition

For the purposes of this British Standard the following definition applies.

batch of material

a single mix of ingredients that is uniquely identified and traceable

3 Material designation

The material shall be designated by one of the following:

- type A aramid fibre;
- type W aramid fibre with wire mesh reinforcement;
- type AG aramid fibre with graphite treated surfaces;
- type WG aramid fibre with wire mesh reinforcement and graphite treated surfaces.

4 Material

4.1 The material shall consist of aramid fibres and inorganic fillers bonded with a suitable rubber or blend of rubbers, and shall be manufactured in the form of sheets. The major reinforcing fibre shall be aramid. The fibres shall be finely divided and uniformly dispersed throughout the jointing.

Asbestos fibres shall not be used.

NOTE **Health warning.** During manufacture and subsequent cutting and handling of jointing materials containing aramid fibre, dust will be released into the workroom atmosphere. Some of this dust will be in the respirable size range. Health and safety legislation requires this dust to be controlled, preferably at source, so as to minimize the risk of inhalation so far as is reasonably practicable.

4.2 Where a wire mesh reinforcement (type W or WG) is specified, this shall be of aperture size 0.25 mm to 1.00 mm with wire diameter 0.12 mm to 0.32 mm in both the warp and weft directions. The diameter of the wire shall be not greater than 40 % and not less than 7.5 % of the sheet thickness and shall be central in the thickness of the sheet.

The wire mesh reinforcement shall be a single-ply of mild steel. Alternative wire material, mesh sizes and wire diameter shall be subject to contract or order.

4.3 The surface of the sheets of types AG and WG shall be treated with graphite.

NOTE It is recognized that in certain environments graphite treated material may cause corrosion. It is therefore the responsibility of the user to ensure that no corrosion hazard exists within a particular application when graphite treated material is specified (see clause 11).

5 Quality and finish

5.1 All types

The sheets of all types of jointing shall be solid run (not laminated), of uniform texture, smooth on both sides and free from irregularities such as blisters, tears and lumps.

NOTE It is recommended that the standard of finish is agreed between the purchaser and the manufacturer at the time of the contract or order.

5.2 Additional requirements for types AG, W and WG

5.2.1 *Type AG.* The surface coating of graphite shall be continuous on both sides of the sheet and free from inclusions, runs and holes.

5.2.2 *Type W.* There shall be no exposed wire on either surface of the sheet.

NOTE Slight pattern marking is acceptable.

5.2.3 *Type WG.* Type WG shall comply with 5.2.2 and additionally the surface coating shall be continuous on both faces of the sheet and free from inclusions, runs and holes.

6 Thickness

6.1 Nominal thicknesses of sheets shall be 0.4, 0.5, 0.75, 1.0, 1.5, 2 and 3 mm.

6.2 The maximum permissible variation of any sheet, when tested using the apparatus described in Appendix A, shall be in accordance with Table 1.

Table 1 — Thickness and tolerance

Nominal thickness of sheet	Maximum permissible variation from nominal thickness	Maximum permissible variation between points not more than 250 mm apart
mm	mm	mm
0.4 and 0.5	± 0.05	± 0.05
0.75 and 1.0	± 0.10	± 0.10
1.5 and 2.0	± 0.15	± 0.10
3.0	± 0.20	± 0.15