

Specification for

Rubber bonded compressed asbestos fibre jointing

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Foreword

This British Standard, one of a number for rubber bonded materials, of a quality suitable for aircraft applications, to be transferred from the Procurement Executive, Ministry of Defence DTD series, supersedes DTD 378A and DTD 416. During the transfer, account has been taken of the knowledge and experience gained in the manufacture of jointing to the DTD specification, with the result that some tests have been modified and the number reduced.

Since the preparation of this standard was commenced there has been certain updating of requirements in connection with materials which come in contact with aviation fuels and synthetic engine lubricating oils. As a result a swell test, originally called for in the DTD series specifications, has been reinstated for those materials in these applications. These are subjected to this additional test according to application.

The attention of the designer is drawn to BS F 130 “Specification for rubber bonded compressed aramid fibre jointing material for aerospace purposes”, to provide a non-asbestos jointing material. However, BS F 130 should not be considered a direct replacement for this standard, and attention is specifically drawn to the foreword of BS F 130.

As will be observed this standard has been metricated and the use of SI units introduced.

NOTE Information on SI units is given in BS 3763, “The International System of units (SI)”, and in BS 350, “Conversion factors and tables”.

The following British Standards are referred to in this standard:

BS 870, *External micrometers*.

BS 903, *Methods of testing vulcanized rubber — Part A16: The resistance of vulcanized rubber to liquids*.

BS 907, *Dial gauges for linear measurement*.

BS 970, *Wrought steels in the form of blooms, billets, bars and forgings — Part 1: Carbon and carbon manganese steels, including free cutting steels*.

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.

Amendments issued since publication

Amd. No.	Date of issue	Comments
2275	May 1977	
5816	January 1989	Indicated by a sideline in the margin

This British Standard, having been approved by the Aerospace Industry Standards Committee, was published under the authority of the Executive Board on 19 November 1973

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The following BSI references relate to the work on this standard:
Committee reference ACE/25
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Contents

	Page
Foreword	Inside front cover
1 Scope	1
2 Classification of material	1
3 Material	1
4 Quality and finish	1
5 Thickness	1
6 Creep test	1
7 Flexibility	2
8 Resistance to aviation fuel	2
9 Resistance to engine lubricants	2
10 Swell test (Type 2 materials only)	2
11 Swell test (Type 3 materials only)	2
12 Test and inspection requirements	2
13 Identification	2
Appendix A Method of carrying out creep test	3
Appendix B Method of test for flexibility	8
Appendix C Method of test for resistance to aviation fuel	8
Appendix D Method of test for resistance to engine lubricants	8
Appendix E Method of carrying out swell test for Type 2 materials	8
Appendix F Method of carrying out swell test for Type 3 materials	9
Figure 1 — Typical arrangement of creep test apparatus	4
Figure 2 — Details of creep test apparatus	5
Table 1 — Sheet thickness and tolerances	1

1 Scope

This British Standard specifies, for aerospace purposes, the requirements for the construction and testing of rubber bonded compressed asbestos fibre jointing material, with or without wire mesh reinforcement and, when required by the purchaser, having graphite treated surfaces.

NOTE The treatment of the surfaces of the material with graphite is now permitted when specifically requested by the purchaser. It is recognized that in certain environments such treated material can give rise to corrosion. It is therefore the responsibility of the user to ensure that no corrosion hazard exists when graphite treated material is specified. In practice corrosion has not been experienced with non-graphite treated jointing and a specific corrosion test has therefore been excluded. However, manufacturers of aerospace equipment are required to notify the Inspecting Authority in the event of any intended change in materials.

2 Classification of material

The jointing material is classified according to its application. The three types referred to in this standard are as follows.

Type 1. For general application where normal bolt loading can be employed in the design.

Type 2. Materials of 0.25 mm and 0.5 mm thickness for use in contact with aviation fuels where control of swell characteristics is required.

Type 3. Materials of 0.25 mm and 0.5 mm thickness for use in contact with synthetic engine lubricating oils of the di-ester type where control of swell characteristics is required.

3 Material

3.1 The material shall consist of well opened chrysotile asbestos fibres, bonded with a suitable rubber or blend of rubbers, and shall be supplied in the form of sheets. The asbestos fibres shall be finely divided and uniformly dispersed throughout the jointing.

3.2 Where a wire mesh reinforcement is specified in the contract or order, this shall normally be steel wire gauze, of aperture size 0.25 mm to 0.95 mm, with wire diameter 0.12 mm to 0.32 mm, and approximately central in the thickness of the sheet. Alternative wire mesh sizes may be supplied by agreement between the purchaser and the supplier.

4 Quality and finish

The sheets of jointing shall be solid run (single ply) of uniform texture, smooth on both sides and free from local irregularities. The surfaces of the sheet shall not be treated with graphite unless specifically requested by the purchaser.

5 Thickness

5.1 The nominal thickness of the material shall be as specified in the contract or order. The preferred thicknesses are 0.25, 0.5, 0.75, 1, 1.5, 2 and 3 mm.

5.2 The maximum permissible variation of any sheet from the nominal thickness and the maximum permissible variation in thickness between any points not more than 250 mm apart shall be in accordance with Table 1.

5.3 The thickness shall be measured with a ratchet micrometer which complies with the provisions of BS 870 and has an anvil of 6 mm to 16 mm diameter. The reading shall be taken after three clicks of the ratchet.

6 Creep test

Three test pieces shall be submitted to test in accordance with Appendix A. When thus described the median creep value shall be not more than 10 % for all thicknesses of jointing.

NOTE 1 For the purpose of this standard the term "creep value" is that reduction in thickness of the test piece expressed as a percentage of its original thickness when tested in accordance with Appendix A.

NOTE 2 Material less than 0.5 mm in thickness may not be tested due to difficulties in taking satisfactory measurements.

Table 1 — Sheet thickness and tolerances

Nominal thickness of sheet	Maximum permissible variation from nominal thickness	Maximum permissible variation between points not more than 250 mm apart
mm	mm	mm
Up to and including 0.5	± 0.05	0.05
Over 0.5 up to and including 1.0	± 0.10	0.10
Over 1.0 up to and including 2.0	± 0.15	0.10
Over 2.0	± 0.20	0.15