

Specification for

Compressed asbestos fibre jointing

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Piping Systems Components Standards Policy Committee (PSE/-) to Technical Committee PSE/2, upon which the following bodies were represented:

- Asbestos Information Centre Ltd.
- British Adhesives and Sealants Association
- British Gas plc
- British Pump Manufacturers' Association
- British Railways Board
- Energy Industries Council
- Institution of Gas Engineers
- Institution of Water and Environmental Management
- Liquefied Petroleum Gas Industry Technical Association (UK)
- Paintmakers' Association of Great Britain Ltd.
- Water Services Association of England and Wales

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Foreword

This British Standard has been prepared under the direction of the Piping Systems Components Standards Policy Committee. It supersedes BS 1832:1972 and BS 2815:1973 which are withdrawn as they have been combined into one standard. The standard has been revised to bring it into line with modern practice regarding testing requirements, these now align with the relevant parts of ASTM F36. The test for flexibility after accelerated ageing has been deleted.

The manufacture of all asbestos based products is covered by the requirements of the Control of Asbestos at Work Regulations 1987, introduced on 1 March 1988. These set out comprehensive provisions covering work activities involving exposure to asbestos. Advice on how to comply with these regulations can be obtained from the manufacturers of the material, from the Asbestos Information Centre, Derby Road, Widnes, Cheshire WH8 9ND, from the local area office of the Health and Safety Executive or from the Environmental Health Department of the local Authority.

Particular note has to be taken of the Asbestos Products (Safety) Regulations 1985, made under the Consumer Safety Act 1978 and of the Asbestos (Prohibitions) Regulations 1985¹⁾ made under the Health and Safety at Work etc. Act 1974, which sets out requirements for the labelling of all products containing asbestos.

All the above legislation implements European Directives.

WARNING. Breathing asbestos dust is dangerous to health and precautions have to be taken during the manufacture and use of these products.

This standard is one of a series of standards specifying the following materials and compounds which are being reviewed.

- Compressed asbestos fibre jointing
- Vulcanized fibre sheets
- Flexible vulcanized fibre sheets
- Composition cork jointing
- Paper and cork/paper jointing
- Rubber reinforced jointing
- Corrugated metal joint rings
- Jointing compounds for use with water, 1st and 2nd family gases
- Jointing compound for 3rd family gases
- Anaerobic jointing compounds for use in appliances using 1st, 2nd and 3rd family gases

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. In particular attention is drawn to the Control of Asbestos at Work Regulations 1987, and the Asbestos Products (Safety Regulations) 1985 and the Health and Safety at Work etc. Act 1974.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 14, 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⁾ Parallel regulations for Northern Ireland came into force on 6 March 1986.

1 Scope

This British Standard specifies requirements for the composition and manufacture, quality and finish, and thickness of three grades of compressed asbestos fibre jointing (designated 0, A and B).

Appendix A lists the information which is to be supplied by the purchaser. Methods of test for oil and water absorption, compressibility, residual stress, and maximum stress are given in Appendix B, Appendix C, Appendix D and Appendix E respectively. Appendix F gives the grade equivalents for jointing specified in BS 1832:1991 and those specified in BS 1832:1972 and BS 2815:1973.

NOTE 1 Jointing with a reinforcement of wire mesh is outside the scope of this standard because the effects of the wire on many of the properties of the material would nullify the results of the specified tests.

NOTE 2 The titles of the publications referred to in this standard are given on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1 jointing

a manufactured solid material supplied in sheets, from which required shapes can be cut, for the purpose of sealing mating faces of components from the ingress or egress of fluids

2.2 inert gas

a gas which under no circumstances will cause any chemical reaction with any part of the jointing or tend to cause any disintegration

2.3 inert liquid

a liquid which under no circumstances will cause any chemical reaction with any part of the jointing or tend to cause any disintegration

2.4 batch

jointing, all of one grade, produced in one manufacturing run, in units of a maximum of 5 t

3 Grades and composition

3.1 Grades of jointing (see note)

Jointing shall be one of the following grades.

- a) *Grade 0*. Suitable for use where resistance to oil and water is required.

- b) *Grade A*. Suitable for use with water, inert gases, inert liquids or steam up to a pressure of 64 bar²⁾ and a temperature of 510 °C.

NOTE It is recommended that when pressure and temperature are close to the upper limits specified for grade A, users should consult the manufacturer when ordering jointing because external factors become more important.

- c) *Grade B*. Suitable for use with water, inert gases, inert liquids or steam up to a pressure of 16 bar and a temperature of 230 °C.

3.2 Composition of jointing

The jointing shall be prepared from well opened chrysotile asbestos fibre which is thoroughly mixed with a bonding agent to produce the grade of jointing that is suitable for the uses specified in 3.1 a), b) or c).

NOTE Materials containing asbestos are subject to legislation that requires precautions to be taken when handling them to ensure that they do not constitute a hazard to health (see foreword).

4 Jointing for potable water

When used under the conditions for which they are designated, non-metallic products in contact with or likely to come into contact with potable water shall comply with the requirements of BS 6920-1:1990.

NOTE 1 Non-metallic products for installation and use in the United Kingdom which are verified and listed under the UK Water Fittings Byelaws Scheme are deemed to satisfy the requirements of this clause. Details of the Scheme are obtainable from the WRc plc Byelaws Advisory Service, 660 Ajax Avenue, Slough SL1 4BG.

Non-metallic products approved by the Department of the Environment Committee on Chemicals and Materials of Construction for use in Public Water Supply and Swimming Pools are considered free from adverse health effects for the purposes of compliance with this clause.

NOTE 2 A list of approved chemicals and materials and details of the approvals scheme is available from the Secretary of the Committee at the Department of the Environment, Water Division, Romney House, 43 Marsham Street, London SW1 3PY.

5 Thicknesses

5.1 The nominal thickness of all the grades of jointing shall be one of the following:

0.25 mm, 0.5 mm, 0.75 mm, 1.0 mm, 1.5 mm, 2.0 mm or 3.0 mm.

5.2 The maximum variation of any sheet of jointing from the nominal thicknesses, and the maximum permissible variation in thickness between any points not more than 250 mm apart on a sheet of jointing shall be as given in Table 1.

²⁾ 1 bar = 10⁵ N/m² = 100 kPa.

Table 1 — Tolerance on thickness of sheet

Nominal thickness	Maximum permissible variation from nominal thickness	Maximum permissible variation in thickness between points not more than 250 mm apart
mm	mm	mm
0.25 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

5.3 The thickness shall be measured with either:

- a ratchet micrometer complying with BS 870 and having an anvil of 6 mm to 16 mm in diameter. The reading shall be taken after three clicks of the ratchet; or
- a dial type micrometer complying with BS 907, with a flat pressure foot of not less than 6 mm diameter and a flat anvil of diameter not less than that of the pressure foot.

6 Quality and finish

Sheets of all grades of jointing shall be of uniform texture, smooth on both sides and free from irregularities.

NOTE When agreed between the purchaser and the manufacturer or supplier, one or both surfaces may be treated with graphite or other acceptable release agent (see Appendix A).

7 Sampling

A sample or samples sufficient to provide the test pieces for one complete series of tests (see Table 2) applicable to the particular grade of jointing shall be selected from each batch of jointing.

8 Testing

8.1 General

The manufacturer shall carry out on each batch of jointing all the tests given in Table 2 for the relevant grade of jointing.

Table 2 — Tests to be carried out on the grades of jointing materials

Grade	Test		
	Resistance to oil and water absorption	Compression	Residual stress
0	✓	✓	✓
A	Not required	✓	✓
B	Not required	✓	✓

8.2 Resistance to oil and water absorption (grade 0 only)

8.2.1 Oil

When tested in accordance with Appendix B the oil absorption of the jointing shall be not greater than the values given in Table 3 for mass and for thickness.

Table 3 — Oil absorption

Jointing thickness	Increase from original mass	Increase from original thickness
mm	% (m/m)	%
Up to and including 0.75	25	25
Over 0.75	20	15

8.2.2 Water

When tested in accordance with Appendix B the water absorption of the jointing shall be not greater than 15 % (m/m).

8.3 Compression (all grades)

When tested in accordance with Appendix C, jointing 0.75 mm and above in thickness shall show a depth of impression of between 6 % and 16 % of the original thickness.

8.4 Residual stress (all grades)

When determined in accordance with Appendix D, the residual stress shall be not less than:

- for grade 0: 24.0 MPa;
- for grade A: 24.0 MPa;
- for grade B: 20.0 MPa.

The method of test to determine the maximum stress value and a method of calibration of the residual stress testing apparatus used shall be in accordance with Appendix E and Appendix G respectively.

NOTE The residual stress values are applicable to jointing of 1.5 mm thickness only.

9 Retest

If any sample fails to comply with any of the requirements given in 8.1 to 8.4, two further samples shall be selected from the same batch to repeat the test failed. If either of the retest samples fails, the whole batch of material shall be deemed not to comply with this British Standard.