

Specification for

Unsintered PTFE tape — General requirements

UDC 678.943-418:621.762.8

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- Asbestos Information Centre Ltd.
- British Adhesives and Sealants Association
- British Compressed Gases Association
- British Hydromechanics Research Association
- Energy Industries Council
- Engineering Equipment and Materials Users' Association
- Industrial Water Society
- Institution of Water and Environmental Management
- LP Gas Association
- Water Services Association of England and Wales

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 June 1995

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The following BSI references relate to the work on this standard:
Committee reference PSE/2
Draft for comment 93/707813 DC

ISBN 0 580 23622 6

Amendments issued since publication

Amd. No.	Date	Comments

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Foreword

This British Standard has been prepared under the direction of the Engineering Sector Board. It supersedes BS 4375:1968 which is withdrawn. BS 7786 specifies the material and general requirements for the complete range of unsintered polytetrafluoroethylene (PTFE) tapes suitable for most general and specialist engineering uses at temperatures up to 260 °C.

The requirements of this British Standard apply to all unsintered PTFE tapes. If the application is appropriate the requirements of BS 6974:1991 or other designated British, European or international standards may also apply.

WARNING. When heated to temperatures 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. Where accidental or unavoidable exposure of PTFE to heat and/or flame occurs good ventilation is therefore essential.

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.

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 8, 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 unsintered polytetrafluoroethylene (PTFE) tapes with a mass per unit area within the range 25 g/m^2 to 300 g/m^2 and with a thickness in the range 0.05 mm to 0.25 mm.

The general material requirements for three grades of unsintered PTFE tape are specified, for general or special engineering applications including tail stock sealing, thread sealing and/or as an antiseize agent at temperatures between -270°C and $+260^\circ\text{C}$.

All grades of this tape are suitable for use with most common liquids and gases.

In addition to the definitive requirements, this standard also requires the items detailed in clause 3 to be documented. For compliance with this standard, both the definitive requirements and the documented items have to be satisfied.

2 References

2.1 Normative references

This British Standard 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 the inside back cover. For dated references, only the edition cited applies: any subsequent amendments to or revisions of the cited publication apply to this British Standard 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 references

This British Standard 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 the inside back cover, but reference should be made to the latest editions.

3 Information and requirements to be agreed and documented

3.1 Information to be supplied by the purchaser

The 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 grade and thickness of tape chosen.

- b) The intended application for the PTFE tape, including any relevant British, European or international application Standards.

NOTE 1 Specific applications are covered in BS 6974:1991 and DIN 30660:1982.

- c) The maximum intended working pressure.

NOTE 2 The maximum working pressure will depend upon the grade and thickness of the tape, the method of application, the number of wraps, the size and quality of the fittings (threads) and the specific operating environment (flow product and temperature). In specialist applications, PTFE tapes have been satisfactorily used for sealing against pressures exceeding 300 bar¹⁾ and also for high vacuum applications.

- d) Whether the tape is to be used in oxygen-enriched environments.

- e) The length and width of tape chosen.

- f) Whether the tape is to be used in contact with, or likely to be used in contact with, potable water.

3.2 Items for agreement

The following items to be agreed between the contracting parties, which are specified in the clauses referred to, 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 can be made.

- a) Where no specific application standard exists, that the grade, thickness and density chosen provides a safe leak-free joint and provides the agreed performance for the intended application (see clause 6, 7.3 and clause 9).

NOTE 1 For the purposes of product performance comparisons it may be desirable to select one of the preferred thickness values of 7.3.

- b) If the PTFE tape is to be used in oxygen-enriched environments, that the tape is suitable for this purpose (see 4.2).

NOTE 2 For applications involving either high concentrations or pressures (or both) of liquid or gaseous oxygen, either detonation or self-ignition tests (or both) may also be required. If in doubt it is essential that the user consult the oxygen supplier for guidance on these potential hazards.

- c) If the length differs from that normally supplied, the length supplied in this case (see 7.1).

- d) If the width differs from that normally supplied, the width supplied in this case (see 7.2).

- e) Where no specific application standard exists, the representative thread form used in a thread wrapping test (see 8.1).

- f) If the application requires test pressures which differ from those normally applied, the test pressure which will apply in this case (see clause 9).

¹⁾ 1 bar = 10^5 N/m^2 = 100 kPa