

BRITISH STANDARD

Specification for unsintered PTFE tapes for general use

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BSi
British Standards

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Summary of pages

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Foreword

Publishing information

This British Standard was published by BSI and came into effect on 31 August 2006. It was prepared by Technical Committee PSE/2, *Joining materials and compounds*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 7786:1995, which is withdrawn.

Relationship with other publications

There are two standards covering unsintered PTFE tapes. This British Standard specifies requirements for tapes for general use at a wide range of temperatures. BS EN 751-3 specifies requirements for tapes for use in very specific circumstances at a more limited range of temperatures.

Information about this document

This is a full revision of the standard. The principal change has been to make all unsintered PTFE tapes manufactured in accordance with BS 7786 suitable for use with an oxygen-enriched environment.

Hazard warnings

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.

WARNING. This British Standard calls for the use of substances and/or procedures that can 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.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard specifies requirements for unsintered polytetrafluoroethylene (PTFE) tapes with a mass per unit area within the range 25 g/m² to 300 g/m² and with a thickness in the range 0.05 mm to 0.25 mm.

It specifies requirements for three grades of unsintered PTFE tape, for general or special engineering applications at temperatures between -270 °C and +260 °C. All grades of this tape are suitable for use with most common liquids and gases and in an oxygen-enriched environment.

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 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 21, *Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions)*

BS 572:1985, *Specification for interchangeable conical ground glass joints*

BS 1752, *Specification for laboratory sintered or fritted filters including porosity grading*

BS 2071:1989, *Specification for Soxhlet extractors*

BS 6920-1, *Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water – Part 1: Specification*

BS EN ISO 4797:2004, *Laboratory glassware – Boiling flasks with conical ground joints*

BS EN ISO 12086-1:2006, *Plastics – Fluoropolymer dispersions and moulding and extrusion materials – Part 1: Designation system and basis for specifications*

ASTM D4591, *Standard test method for determining temperatures and heats of transitions of fluoropolymers by differential scanning calorimetry*

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 Some specific applications are covered in BS EN 751-3.

- 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 bar ¹⁾ and also for high vacuum applications.

- d) the width and length of tape chosen;
- e) 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, the grade, thickness and density required to form a leak-free joint for the intended application (see Clause 6, 7.1 and Clause 8);

NOTE 1 For the purposes of product performance comparisons it might be desirable to select one of the preferred thickness values specified in 7.1.

- b) if the width differs from that normally supplied, the width supplied in this case (see 7.2);
- c) if the length differs from that normally supplied, the length supplied in this case (see 7.3);

¹⁾ 1 bar = 10⁵ N/m² = 100 kPa.