

Refractory products — Methods of test for ceramic fibre products

ICS 81.080

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- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii and iii, a blank page, pages 1 to 19 and a back cover.

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Refractory products — Methods of test for ceramic fibre products

*Produits réfractaires — Méthodes d'essai des produits à base de fibres
céramiques*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10635 was prepared by Technical Committee ISO/TC 33 *Refractories*.

Annex A of this International Standard is for information only.

Refractory products — Methods of test for ceramic fibre products

1 Scope

This International Standard specifies methods for determining the thickness, bulk density, resilience, permanent linear change on heating, thermal conductivity, tensile strength and shot content of ceramic fibre products. It applies to ceramic fibre bulk, blankets, felts, mats, boards, papers and pre-formed shapes with the exception of products delivered in a wet state.

The application of the individual test methods is given in table 1, with reference to the type of products.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*.

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tensile testing machines*.

3 Preparation of test pieces

The number of items to be tested shall be determined by agreement between the parties. The number of test pieces per item shall be determined in accordance with Table 1.

When the material to be tested is wound, any compressed material at the extreme ends shall be excluded. A strip shall be cut perpendicular to the length across the full material width, of sufficient size for the different tests planned.

The required number of test pieces of required dimensions shall be cut using a template, a sharp knife, a saw or other method which will not damage the test piece. Avoid excess pressure as this may crush the fibre.

Table 1 — Summary of test methods and designations, applicability to product types and number of test pieces per item required

Clause	Test	Material	Number of test pieces
4	Thickness: 725 Pa method or 350 Pa method	blanket, felt, mat, board, paper	3
5	Bulk density	blanket, felt, mat, board, paper	3
6	Resilience	blanket, felt, mat	3
7	Permanent linear change on heating by the: slow heat method hot furnace method	blanket, felt, mat, board, paper, pre-formed shapes	3
8	Thermal conductivity: calorimetric method up to hot face temperature of 1300 °C	blanket, felt, mat, board	1
9	Tensile strength	blanket, felt, paper	5
10	Shot content	bulk fibre, blanket, felt, mat, paper	3

4 Determination of thickness

4.1 Principle

Determination of the thickness of a product subjected to a compressive stress which depends on its nominal bulk density. There are two methods, of which the dial gauge comparator method (see 4.3.1) is the reference method and is the only method applicable to ceramic fibre paper.

4.2 Test piece dimensions

The size of the test piece shall be such that the disc rests on it entirely, and shall be at least 100 mm × 100 mm.

4.3 Methods

4.3.1 The dial gauge comparator method

4.3.1.1 Apparatus, consisting of a machined reference plate, a dial gauge comparator with a metallic disc, 75 ± 1 mm in diameter, fixed at right angles to the dial gauge measuring probe. The apparatus shall be capable of applying a 350 Pa ± 7 Pa compressive stress to products with a nominal bulk density < 96 kg/m³ and a 725 Pa ± 15 Pa compressive stress to products with a nominal bulk density ≥ 96 kg/m³.

4.3.1.2 Procedure. Brush the reference plate free of any residual material and check that the disc lies parallel to the reference plate and, when they are in contact, the dial gauge reads zero.

Gently raise the disc and slide the test piece underneath it. Slowly lower the disc on to the test piece until it supports the full pressure of the disc and weigh (see 4.3.2.1). When the reading is stable record the dial reading to an accuracy of ± 0,1 mm.