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Second edition
2007-12-15

Refractory materials — Determination of thermal conductivity —

Part 2: Hot-wire method (parallel)

*Matériaux réfractaires — Détermination de la conductivité thermique —
Partie 2: Méthode du fil chaud (parallèle)*



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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 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8894-2 was prepared by Technical Committee ISO/TC 33, *Refractories*.

This second edition cancels and replaces the first edition (ISO 8894-2:1990), which has been technically revised to be technically identical to EN 993-15. The main changes are the following. (Note that the clause and subclause references given below refer to the 1990 edition.)

The Scope has been revised. It contains all the essential elements of ISO 8894-2:1990 except that the 1 250°C temperature limit has been omitted. In Note 2, reference to fibres has been taken out as current practice allows measurements on these materials.

Clause 2 *Normative references* has been deleted because

- sampling for this test is not usually carried out in accordance with ISO 5022, and
- ISO 8894-1 is only referred to in the Scope and not in the method itself.

The definitions given in Clause 3 have been improved and clarified.

The accuracy of temperature measurement of the furnace, given in 5.1, has been reduced to ± 10 K.

Modifications to 5.2 to 5.4 reflect equipment currently in use.

A paragraph has been added to 5.7 to ensure that the container is inert under the test conditions.

Subclause 6.4 and Figure 4 have been modified to allow grooves in one test piece only, for simplicity of machining. Bedding material has been removed from Figure 4 as it has been found to affect the results due to heat-transfer modification. A tolerance has been given for surface flatness of the test pieces, so that bedding material is not required.

Subclause 7.2 has been modified to ensure stability of the hot wire and measurement thermocouple.

Table 1 has been modified to reflect modern equipment and 7.5 has been changed accordingly.

A new Clause 7 has been added between 7.11 and Clause 8 to ensure test accuracy.

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In the equation in Clause 8, $V.I$ has been replaced by P , the rate of energy transfer, as stated in the definitions in Clause 3.

Annex A has been updated for current practice.

ISO 8894 consists of the following parts, under the general title *Refractory materials — Determination of thermal conductivity*:

- *Part 1: Hot-wire method (cross-array)*
- *Part 2: Hot-wire method (parallel)*