International Standard

ISO 10059-1

Third edition
2025-03

Dense shaped refractory products — Determination of cold compressive strength —

Part 1: Referee test without packing

Produits réfractaires façonnés denses — Détermination de la résistance à la compression à température ambiante —

Partie 1: Méthode d'essai de référence sans intercalaire

Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 33, *Refractories*.

This third edition cancels and replaces the second edition (ISO 10059-1:1992), which has been technically revised.

The main changes are as follows:

— revised definitions;

— addition of the possibility to use cube shaped test piece;

— addition of an informative annex on precision and bias.

A list of all parts in the ISO 10059 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The ISO 10059 series comprises two parts. This document (ISO 10059-1) specifies a referee method for determination of the cold compressive strength, which does not use any packing material. ISO 10059-2 will specify an alternative test where packing material and alternative test piece sizes are permitted.

The test method for shaped insulating products is given in ISO 8895.

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Dense shaped refractory products — Determination of cold compressive strength —

Part 1:
Referee test without packing

1 Scope

This document specifies a method for determination of the cold compressive strength of dense shaped refractory products.

Shaped refractories are those which have fixed geometry and dimensions when delivered to the user. This document is accordingly applicable to standard shape refractory bricks, but also special shapes refractory products and pre-cast products.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 13385-1, *Geometrical product specifications (GPS) — Dimensional measuring equipment — Part 1: Design and metrological characteristics of callipers*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
cold compressive strength
σ_{CCS}
maximum load per unit area, applied under specified conditions at room temperature, that a refractory product will withstand before failure occurs

3.2
dense shaped refractory product
product with specific dimensions, having a true porosity of less than 45 % by volume, when measured in accordance with ISO 5017

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