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Phase quantitative analysis of residual quartz in silica bricks — X-ray diffraction method

Analyse quantitative de la phase de quartz résiduel dans les briques de silice — Méthode par diffraction des rayons X

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Foreword

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

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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Phase quantitative analysis of residual quartz in silica bricks — X-ray diffraction method

1 Scope

This document specifies a method for the quantitative analysis of residual quartz (i.e. alpha-quartz) in silica bricks within the mass fraction range of 0,3 % to 5,0 %, by X-ray diffraction (XRD) using a Bragg-Brentano diffractometer. This document includes details of sample preparation and of preliminary establishment of a working curve using external standards.

This document does not address the safety issues associated with its use. The ground silica brick powders and reference materials may cause damage to lungs through prolonged or repeat inhalation during tests. It is responsibility of the users of this standard to establish appropriate safety and health practices.

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 836, *Terminology for refractories*

ISO 5022, *Shaped refractory products — Sampling and acceptance testing*

ISO 23071:2021, *Refractory products — Determination of reduced species in carbon containing refractories by XRD*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 836 and the following 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
sample
representative collection of items that can be obtained by sampling according to a sampling plan agreed upon by the interested parties

Note 1 to entry: An example sampling plan is given in ISO 5022.

3.2
silica brick
refractory brick containing SiO_2 greater than or equal to 93 % by mass

3.3
item
refractory *silica brick* (3.2)

3.4
test portion
amount of powder, taken from a crushed and ground *item* (3.3)

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