

Advanced technical ceramics — Monolithic ceramics — General and textural properties —

Part 3: Determination of grain size

UDC 666.5/.6:62-492.2:620.1

Cooperating organizations

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This Draft for Development, having been prepared under the direction of the Refractory Products Standards Committee, was published under the authority of the Standards Board and comes into effect on 15 June 1993

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Amendments issued since publication

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National foreword

This Draft for Development has been prepared under the direction of the Refractory Products Standards Committee and is the English language version of ENV 623-3:1993 *Advanced technical ceramics — Monolithic ceramics General and textural properties — Part 3: Determination of grain size* published as a European prestandard by the European Committee for Standardization (CEN).

This publication is not to be regarded as a British Standard

It is being issued in the Draft for Development series of publications and is of a provisional nature because it is considered that further experience is required in its application before it is converted to a European and hence British Standard. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained for reporting to the CEN Committee responsible for converting the prestandard into a European Standard.

The test methods given in this prestandard using the line and circle intercept techniques have been evaluated in a CEN/VAMAS interlaboratory exercise by 25 laboratories¹⁾. The exercise involved calculating mean linear intercept sizes to the procedure given in this standard, using a simple unambiguous computer-simulated microstructure and two alumina materials prepared by the participants. One alumina material had a uniform intercept size of about 4 μm and the other a wide grain size range from 1 μm to 25 μm . In each of the cases analysed, the overall average linear intercept size determined by the line method was the same as that determined by the circle method, well within the scatter of results due to random positioning of lines or circles on micrographs. The result was independent of whether optical or scanning electron microscopy was used for preparation of suitable micrographs. The spread of results between laboratories was explainable in terms of normal randomness between selected areas of microstructure. The equivalence of the methods given in this pre-standard was therefore fully demonstrated.

A review of this Draft for Development will be carried out two years after its publication (March 1995) and submission of comments from users of this publication is requested. According to the replies received, the responsible BSI committee will judge whether to support the conversion into a European Standard or what other action should be taken.

Comments should be sent in writing to BSI, 3 York Street, Manchester M2 2AT for the attention of Mr D J Fisher, quoting the document reference (DD ENV 623-3), the relevant clause and where possible a proposed revision, by March 1995.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ENV title page, pages 2 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ Dortmans, L M T, Morrell, R, De With, G, *CEN-VAMAS Round Robin on grain size measurement for advanced technical ceramics — final report*. VAMAS Report 12, December 1992, National Physical Laboratory, Teddington, Middlesex.

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English version

Advanced technical ceramics — Monolithic ceramics — General and textural properties — Part 3: Determination of grain size

Céramiques techniques avancées — Méthodes
d'essai pour céramiques monolithiques —
Propriétés générales et texturales — Partie 3:
Détermination de la taille des grains

Hochleistungskeramik — Monolithische
Keramik — Allgemeine und strukturelle
Eigenschaften — Teil 3: Bestimmung der
Korngröße

This European Prestandard (ENV) was approved by CEN on 1992-03-31 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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