

Sampling and analysis of glass-making sands —

Part 1: Methods for sampling and physical testing of glass-making sands

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee LBI/36, Laboratory glassware and related apparatus, upon which the following bodies were represented:

- British Glass Manufacturers Confederation
- CLEAPSS School Science Service
- GAMBICA Association Ltd.
- Institute of Biomedical Science
- LGC Ltd.
- Royal Society of Health
- Society of Glass Technology

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Foreword

This British Standard was prepared by Technical Committee LBI/36. BS 2975-1:2004 together with Part 2 (when published) supersedes BS 2975:1988, which is now withdrawn.

This revision of BS 2975 is published in two parts, as follows:

- *Part 1: Methods for sampling and physical testing;*
- *Part 2: Methods for chemical analysis.*

This part updates the methods for sampling and the physical testing of glass-making sands described in Clause 2 and Clause 3 of BS 2975:1988. It incorporates appropriate requirements from complementary standards describing the sampling and physical testing of aggregates: BS EN 932-1:1996, BS EN 932-2:1999, BS EN 933-1:1997 and BS EN 1097-5:1999.

Annex A (informative) gives recommendations for particle size distribution, moisture content and typical end-uses of different glass-making sands, previously described in Annex B and Annex D of BS 2975:1988.

Part 1 updates the methods for sampling and physical analysis whilst Part 2 updates the methods for chemical analysis of glass-making sands described in Clause 4 of BS 2975:1988. Part 2 also includes recommendations for the chemical composition of glass-making sands and details of standard reference sands.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

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1 Scope

This British Standard describes a method of sampling and physical testing of sands used for a variety of glass-making activities with the intention of providing a basis for either continued supply of established materials or for evaluation of new sources of silica sand.

NOTE Annex A illustrates commonly encountered particle size distribution and moisture content of glass-making sands.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the reference cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 410-1:2000, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth* (ISO 3310-1:2000).

BS EN 932-1:1996, *Tests for general properties of aggregates — Part 1: Methods for sampling*.

BS EN 932-2:1999, *Tests for general properties of aggregates — Part 2: Methods for reducing laboratory samples*.

BS EN 933-1:1997, *Tests for geometrical properties of aggregates — Part 1: Determination of particle size distribution — Sieving method*.

BS EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods*.

3 Sampling

3.1 Principle

Homogeneous sampling of granular materials is difficult due to segregation of particles caused by grain size differences and variations in specific gravity of trace mineral suites. Inappropriate sampling is probably the most important factor causing poor precision in test work results. Detailed descriptions of sampling processes are provided to allow consistency in sampling by operators of varying experience.

3.2 Apparatus

3.2.1 *Stout plastic sheeting*, for mixing surface for bulk samples.

3.2.2 *Glass jars with contamination free seals*, for retention of initial condition of sample.

3.2.3 *Strong polythene bags with seals*, for retention of condition of sample.

3.2.4 *Nickel or stainless steel spatulas*, for sample mixing and selection.

3.2.5 *Distilled or ion-exchanged laboratory water*, for adjustment of water content.

3.2.6 *Riffle boxes of steel or plastics*, for sample selection.

3.2.7 *Rotary sample divider (optional)*, for sample selection.

3.2.8 *Large porcelain or agate pestle and mortar*, for homogenization of initial sample.

3.2.9 *Laboratory oven to 110 (±5) °C*, for drying operations.

3.2.10 *Disposable non contaminating oven dishes*, for drying operations.

3.2.11 *200 mm diameter sieves of stainless steel or phosphor bronze conforming to BS 410-1:2000*, according to sand specification.

3.2.12 *Mechanical sieve shaker*.