



Standard Test Method for Sieve Analysis of Raw Materials for Glass Manufacture¹

This standard is issued under the fixed designation C429; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This test method covers the sieve analysis of common raw materials for glass manufacture, such as sand, soda-ash, limestone, alkali-alumina silicates, and other granular materials used in glass batch.

1.2 The values stated in SI units are to be regarded as the standard. The values in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C92 Test Methods for Sieve Analysis and Water Content of Refractory Materials

C325 Guide for Wet Sieve Analysis of Ceramic Whiteware Clays

C371 Test Method for Wire-Cloth Sieve Analysis of Non-plastic Ceramic Powders

D346 Practice for Collection and Preparation of Coke Samples for Laboratory Analysis

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

E105 Practice for Probability Sampling of Materials

E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *unit for sampling, n*—a carload lot or truckload lot of bulk material, or the entire shipment of bagged material.

¹ This test method is under the jurisdiction of ASTM Committee C14 on Glass and Glass Products and is the direct responsibility of Subcommittee C14.02 on Chemical Properties and Analysis.

Current edition approved Oct. 1, 2016. Published November 2016. Originally approved in 1959. Last previous edition approved in 2011 as C429 – 01 (2011). DOI: 10.1520/C0429-16.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.1.2 *sub lot, n*—a fraction of a shipment of bagged material, such as $\frac{1}{10}$ or $\frac{1}{20}$ of the lot.

3.1.3 *gross sample, n*—the total number of sample increments taken from the lot.

3.1.4 *sample increment, n*—an individual portion of the gross sample taken from the lot at a definite time or location, or both; increments shall be of nearly equal weight or volume, or both.

3.1.4.1 *Discussion*—A 2.2 to 4.5-kg (5 to 10-lb) increment generally is satisfactory in sampling raw materials for glass manufacture, for determining particle size distribution.

3.1.5 *laboratory sample, n*—a 0.9 to 1.8-kg (2 to 4-lb) representative fraction of the gross sample.

3.1.6 *test specimen, n*—a 100 to 150-g representative fraction of the laboratory sample.

4. Significance and Use

4.1 The purpose of this test method is to determine the particle size distribution of the glass raw materials.

5. Apparatus

5.1 *Testing Sieves:*

5.1.1 Sieves shall conform to Specification E11 with particular reference to Table 1 and Section 4 on Frames. Sieves shall be designated by the U. S. Standard Series of sieve numbers and shall vary in opening size by the ratio of the $\sqrt{2}$:1 in accordance with frames 1 in. (25 mm) deep (half height) are recommended for mechanical shaking. The following sieves shall be provided:

Sieve Designation	Opening Size
No. 8	2.36-mm
No. 12	1.70-mm
No. 16	1.18-mm
No. 20	850- μ m
No. 30	600- μ m
No. 40	425- μ m
No. 50	300- μ m
No. 70	212- μ m
No. 100	150- μ m
No. 140	106- μ m
No. 200	75- μ m

5.1.2 *Standard Matched Sieves*—A reference set of standard matched sieves shall be provided for use in checking the set of sieves used in the actual sieve analysis of samples. The sieves for use in sieve analysis of samples may also be standard