



Designation: C975 – 87 (Reapproved 2009)

Standard Practice for Preparing Test Specimens from Basic Refractory Ramming Products by Pressing¹

This standard is issued under the fixed designation C975; 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 reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers a procedure for preparing test specimens from basic refractory ramming products by pressing prepared material in a mold. Specimens prepared in accordance with this procedure are intended for use in ASTM test methods.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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. Significance and Use

2.1 This practice defines a procedure that ensures consistent preparation of specimens for product testing and evaluation.

2.2 This practice can be used in the laboratories of producers, users, and general-interest parties for research and development or quality-control work. It is particularly useful for interlaboratory comparisons of products, for repetitive evaluations or comparisons of products or product quality, and in specifying a uniform preparation practice for specimens for acceptance testing.

2.3 In using this practice it must be recognized that the structure of laboratory-pressed specimens may differ significantly from the structure of material rammed in field applications.

3. Apparatus

3.1 *Mixer*, bench-type, Hobart or equivalent.

3.2 *Press*, mechanical or hydraulic.

3.3 *Steel Molds*.

3.4 *Oven*, air circulating.

3.5 *Trowel*.

4. Procedure

4.1 Store the material to be tested at $85 \pm 2^\circ\text{F}$ ($29.5 \pm 1^\circ\text{C}$) for 24 h prior to testing.

4.2 Reduce the sample to the desired batch size with a sample splitter or by quartering taking precautions to prevent segregation. Sufficient material should be batched to provide at least a 10 % excess over test specimen requirements.

4.3 Add the weighed, dry batch to the mixer and dry-mix at low speed for 30 s. Continue to mix at low speed while adding the required amount of water (see 4.3.1) within 30 s. Wet-mix at low speed for 3 min.

4.3.1 Use the amount of water and mixing time (if different from above) recommended by the manufacturer. The water must be potable and at a temperature of $85 \pm 2^\circ\text{F}$ ($29.5 \pm 1^\circ\text{C}$). Measure the water addition to the nearest 0.1 % by weight.

4.4 Specimens of the desired size should be pressed immediately after the batch is mixed. Weigh the proper amount of material for each specimen to the nearest 0.02 lb (10 g), and distribute the mix uniformly in the mold using the narrow edge of a trowel. The remainder of the batch should be covered with a damp cloth during the pressing procedure. Press test specimens at 10 000 psi (68.95 MPa).

4.5 Test specimens should be air-dried for 4 h, and then dried for a minimum of 8 h at $225 \pm 5^\circ\text{F}$ ($107 \pm 2.5^\circ\text{C}$) in a circulating air dryer prior to testing. Testing should be carried out within 48 h.

5. Calculation and Report

5.1 In the report on specimen preparation, include the percent water addition, drying time, and test specimen size.

¹ This practice is under the jurisdiction of ASTM Committee C08 on Refractories and is the direct responsibility of Subcommittee C08.09 on Monolithics.

Current edition approved March 1, 2009. Published April 2009. Originally approved in 1982. Last previous edition approved in 2004 as C975 – 87 (2004). DOI: 10.1520/C0975-87R09.