



Designation: C1054 – 13

# Standard Practice for Pressing and Drying Refractory Plastic and Ramming Mix Specimens<sup>1</sup>

This standard is issued under the fixed designation C1054; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice covers the pressing and drying of chemically and non-chemically bonded alumin-silicate and high alumina plastic and ramming mix refractory specimens classified in accordance with Classification C673.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given 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:*<sup>2</sup>

C179 Test Method for Drying and Firing Linear Change of Refractory Plastic and Ramming Mix Specimens

C181 Test Method for Workability Index of Fireclay and High-Alumina Refractory Plastics

C673 Classification of Fireclay and High-Alumina Plastic Refractories and Ramming Mixes

## 3. Significance and Use

3.1 This practice is useful for producing uniform specimens of refractory plastics and ramming mixes for use in standard ASTM tests. Samples thus formed may be used for referee testing when setting specifications between producer and user. Establish by mutual agreement and specify in the report the forming parameters such as sample size, workability, and forming pressure when referee testing.

3.2 This practice is applicable for preparing test specimens of various sizes. Note that 9 by 4½ by 2½ in. (228 by 114 by

64-mm) samples, because of their large cross-section, have a greater tendency to form flaws during pressing, handling, and drying than smaller cross-sectional samples.

3.3 The purpose of this practice is to minimize flaws in pressed specimens. It is not intended to duplicate all field installation conditions.

3.4 Variations in workability as determined by Test Method C181 can significantly affect the number of flaws contained in a specimen. Establish by mutual agreement the workability level when comparing tests between two laboratories.

3.5 This practice is not intended for preparing specimens of basic ramming mixes, anhydrous tap-hole mixes, nor resin bonded mixes.

## 4. Apparatus

4.1 *Power Press*, preferably of the hydraulic type, equipped with suitable molds for forming specimens of the required size (Note 1) and capable of pressing to a minimum of 1500 psi (10.34 MPa) pressure when forming the largest cross-sectional area specimen.

NOTE 1—It may be advisable to have the molds slightly oversized so that, after drying, the specimens will be close to the required size for the specific test.

4.2 *Drying Oven*, preferably forced-draft rather than natural convection, capable of maintaining 230°F (110°C) with a capacity to hold the specimens.

4.3 *Balance*, sufficient capacity to measure specimens with sensitivity of 0.02 lb (9 g).

4.4 *Thermometer*, with a range of 0° to 180 ± 0.1°F (–18° to 80°C ± 0.05°C).

4.5 *Linear Measuring Device*, capable of being read to 0.02-in. (0.5-mm) .

4.6 *Mold Lubricant*—Either paraffin or silicone-based oils can be used as a parting agent for coating mold and die surfaces.

4.7 *Two Non-Porous Blocks*, approximately ½-in. (13-mm) thick. The cross-sectional dimensions of these pieces will vary, depending on the side dimensions of the bar being pressed.

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

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.