~~Designation:C 199–84(Reapproved2000)~~ Designation: C 199 – 84 (Reapproved 2005)

Standard Test Method for Pier Test for Refractory Mortars[1]

This standard is issued under the fixed designation C 199; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the determination of refractoriness of all types of refractory mortar by heating a pier of brick laid up with the test mortar to learn whether the prescribed heat treatment causes the mortar to flow out of the joints.

1.2

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]

C 24 Test Method for Pyrometric Cone Equivalent (PCE) of Fireclay and High Alumina Refractory Materials

C 113 Test Method for Reheat Change of Refractory Brick

3. Significance and Use

3.1 This test method is used to estimate the application temperature limits of a refractory mortar and will establish its classification.

3.2 This test method will be regarded as a pass or fail test because the results are based on observations of whether the mortar flowed from the joints as a result of the heat treatment used.

3.3 Results obtained by this test method will not agree with those obtained in service when heating is done from only one side.

3.4 This test method is not applicable for testing nonaqueous mortars.

4. Apparatus

4.1 *Brick*—Three 9-in. (228-mm) straight fireclay or high-alumina brick, conforming to the following respective requirements for refractories:

Class of Mortar to ~~Be~~be Tested	~~PCE,[A] Not Lower Than Cone No.~~ PCE,[A] Not Lower than Cone No.
~~High-alumina~~	~~36~~
~~Super-duty~~	~~33~~
~~High-duty~~	~~31½~~
~~Medium-duty~~	~~29~~
High-alumina	36
Super-duty	33
High-duty	31½
Medium-duty	29

~~A~~

[A] See Test Method C 24.

4.2 *Spacing Rods*—Nine joint-thickness spacing rods made of 3⁄32-in. (2-mm) diameter drill rod, cut into 6-in. (152-mm) lengths.

~~[1] This test method is under the jurisdiction of ASTM Committee C-8 on Refractories and is the direct responsibility of Subcommittee C08.09 on Monolithic Refractories. Current edition approved Jan. 27, 1984. Published September 1984. Originally published as C199 – 45 T. Last previous edition C199 – 47 (1977).~~

[1] This test method is under the jurisdiction of ASTM Committee C08 on Refractories and is the direct responsibility of Subcommittee C08.01 on Strength. Current edition approved Dec. 1, 2005. Published December 2005. Originally approved in 1945. Last previous edition approved in 2000 as C 199 – 84 (2000).

~~[2] Annual Book of ASTM Standards, Vol 15.01.~~

[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.