



Designation: C196 – 00 (Reapproved 2019)

Standard Specification for Expanded or Exfoliated Vermiculite Thermal Insulating Cement¹

This standard is issued under the fixed designation C196; 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 U.S. Department of Defense.

1. Scope

1.1 This specification covers expanded or exfoliated vermiculite thermal insulating material in the form of dry cement or plaster, intended to be mixed with a suitable proportion of water, applied as a plastic mass, and dried in place, for use as insulation on surfaces operating at temperatures between 100°F (38°C) and 1800°F (982°C). The cement shall not be used where it will be exposed to combustion conditions, such as the hot face lining of a furnace.

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 The following safety hazards caveat pertains only to the test method portion, Section 10, of this specification. *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 When the installation or use of thermal insulation materials, accessories and systems, may pose safety or health problems, the manufacturer shall provide the user with appropriate current information regarding any known problems associated with the recommended use of the company's products. The manufacturer shall also recommend protective measures to be employed in the safe utilization of said products.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This specification is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.20 on Homogeneous Inorganic Thermal Insulations.

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2. Referenced Documents

2.1 ASTM Standards:²

- C163 Practice for Mixing Thermal Insulating Cement Samples
- C166 Test Method for Covering Capacity and Volume Change Upon Drying of Thermal Insulating Cement
- C168 Terminology Relating to Thermal Insulation
- C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- C353 Test Method for Adhesion of Dried Thermal Insulating or Finishing Cement (Withdrawn 2002)³
- C354 Test Method for Compressive Strength of Thermal Insulating or Finishing Cement (Withdrawn 2002)³
- C356 Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat
- C390 Practice for Sampling and Acceptance of Thermal Insulation Lots
- C405 Practice for Estimating Consistency of Wet-Mixed Thermal Insulating Cement (Withdrawn 2006)³
- C518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- C1058 Practice for Selecting Temperatures for Evaluating and Reporting Thermal Properties of Thermal Insulation

3. Terminology

3.1 Definitions:

3.2 Terminology C168 shall be considered as applying to the terms used in this specification.

4. Materials and Manufacture

4.1 The cement shall be composed predominantly of expanded or exfoliated vermiculite, with a suitable proportion of

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 The last approved version of this historical standard is referenced on www.astm.org.