



Standard Specification for Calcium Silicate Block and Pipe Thermal Insulation¹

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1. Scope

1.1 This specification covers calcium silicate block and pipe thermal insulation for use on surfaces with temperatures between 80 and 1700°F (27 to 927°C), unless otherwise agreed upon between the manufacturer and the purchaser.

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 The following safety hazards caveat pertains only to the test method (Section 12) described in 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- C 165 Test Method for Measuring Compressive Properties of Thermal Insulations²
- C 168 Terminology Relating to Thermal Insulation Materials²
- C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus²
- C 203 Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation²
- C 302 Test Method for Density and Dimensions of Preformed Pipe-Covering-Type Thermal Insulation²
- C 303 Test Method for Density of Preformed Block-Type Thermal Insulation²
- C 335 Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation²
- C 356 Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat²
- C 390 Criteria for Sampling and Acceptance of Preformed Thermal Insulation Lots²
- C 411 Test Method for Hot-Surface Performance of High-

Temperature Thermal Insulation²

- C 421 Test Method for Tumbling Friability of Preformed Block-Type Thermal Insulation²
- C 446 Test Method for Breaking Load and Calculated Modulus of Rupture of Preformed Insulation for Pipes²
- C 450 Practice for Prefabrication and Field Fabrication of Thermal Insulating Fitting Covers for NPS Piping, Vessel Lagging, and Dished Head Segments²
- C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus²
- C 585 Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System)²
- C 795 Specification for Thermal Insulation for Use In Contact with Austenitic Stainless Steel²
- C 870 Practice for Conditioning of Thermal Insulating Materials²
- C 1045 Practice for Calculating Thermal Transmission Properties From Steady-State Heat Flux Measurements²
- C 1058 Practice for Selecting Temperatures for Evaluating and Reporting Thermal Properties of Thermal Insulation²
- C 1114 Test Method for Steady-State Thermal Transmission Properties by Means of the Thin-Heater Apparatus²
- E 84 Test Method for Surface Burning Characteristics of Building Materials³

3. Terminology

3.1 *Definitions*—For definitions used in this specification, see Terminology C 168.

4. Classification

4.1 Thermal insulation shall be of the following types:

4.1.1 *Type I*—For use on surfaces at temperature to 1200°F (649°C).

4.1.2 *Type II*—For use on surfaces at temperatures up to 1700°F (927°C).

5. Description

5.1 *Composition*—Calcium silicate thermal insulation shall consist principally of hydrous calcium silicate usually with the incorporation of fibrous reinforcement. Asbestos shall not be used as a component in the manufacture of the material.

¹ This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.20 on Homogeneous Inorganic Thermal Insulations.

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² *Annual Book of ASTM Standards*, Vol 04.06.

³ *Annual Book of ASTM Standards*, Vol 04.07.