



Standard Specification for Structural Insulating Board, Calcium Silicate¹

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1. Scope

1.1 This specification covers structural insulating board for general thermal insulating, fire-resistive, and marine bulkhead applications. The rigid, preformed structural insulating board is for use at temperatures up to 1700°F (927°C). For specific applications, the actual temperature limit shall be agreed upon between the manufacturer and the purchaser.

1.2 The structural insulating board maintains its structural integrity after immersion in water.

1.3 Rapid cycling over a wide temperature range is not recommended. Such use may result in surface cracking.

1.4 The values stated in inch-pound units are to be regarded as the standard. The SI equivalents of inch-pound units are given in parentheses.

1.5 *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.*

1.6 When the installation or use of thermal insulation materials, accessories and systems, may pose safety or health problems, the manufacturer shall provide the user appropriate current information regarding any known problems associated with the recommended use of the company's products, and shall also recommend protective measures to be employed in their safe utilization. The user shall establish appropriate safety and health practices and determine the applicability of regulatory requirements 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 Insulating Materials²

C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus²

¹ This specification is under the jurisdiction of 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.

C 203 Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation²

C 303 Test Method for Density of Preformed Block Type Thermal 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 447 Practice for Estimating the Maximum Use Temperature of Thermal Insulations²

C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus²

C 1058 Practice for Temperatures for Evaluating and Reporting²

D 1037 Test Methods for Evaluating the Properties of Wood-Base Fiber and Particle Panel Materials³

E 136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C⁴

3. Terminology

3.1 *Definitions*—The definitions in Terminology C 168 shall apply to the terms used in this specification.

4. Classification

4.1 The structural insulating boards shall be of the following types:

4.1.1 *Type I*—Maximum use temperature 1400°F (760°C).

4.1.2 *Type II*—Maximum use temperature 1700°F (927°C).

4.2 The structural insulating boards shall be of the following grades:

4.2.1 *Grade 1*—Typical density 36 lb/ft³ (577 kg/m³).

4.2.2 *Grade 2*—Typical density 46 lb/ft³ (737 kg/m³).

4.2.3 *Grade 3*—Typical density 60 lb/ft³ (961 kg/m³).

4.2.4 *Grade 4*—Typical density 14 lb/ft³ (224 kg/m³).

4.2.5 *Grade 5*—Typical density 18 lb/ft³ (288 kg/m³).

4.2.6 *Grade 6*—Typical density 28 lb/ft³ (449 kg/m³).

4.2.7 *Grade 7*—Typical density 40 lb/ft³ (641 kg/m³).

³ Annual Book of ASTM Standards, Vol 04.10.

⁴ Annual Book of ASTM Standards, Vol 04.07.