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Standard Specification for Flat Wall Insulating Concrete Form (ICF) Systems¹

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1. Scope

1.1 This specification is intended to apply to Insulating Concrete Form (ICF) Systems that will act as permanent formwork for cast-in-place reinforced concrete beams; lintels; exterior and interior, above and below grade bearing and non-bearing walls; foundations; and retaining walls. The specification is restricted to ICF Systems with a resultant uniform monolithic concrete core.

1.2 Products covered by the specification consists of molded expanded polystyrene (EPS) insulation panels that are connected by cross ties to form the ICF System.

1.3 This specification identifies test methods appropriate for establishing ICF System performance in their primary function as a stay in place concrete forming system. The use of ICF Systems covered by this specification shall be regulated by building codes that address fire performance, structural performance or both. The fire performance of the material shall be addressed through standard fire test methods established by the appropriate governing documents. The structural performance must be addressed through design of concrete structures in accordance with the appropriate Code requirements.

1.4 Details of manufacturing procedures are beyond the scope of this specification.

1.5 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered standard. For conversion to metric units other than those contained in this specification, refer to **IEEE/ASTM SI 10**.

1.6 *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.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standard-*

ization 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.

2. Referenced Documents

2.1 ASTM Standards:²

- C203** Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- C390** Practice for Sampling and Acceptance of Thermal Insulation Lots
- C475/C475M** Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
- C578** Specification for Rigid, Cellular Polystyrene Thermal Insulation
- C645** Specification for Nonstructural Steel Framing Members
- C1002** Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
- C1363** Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
- C1396/C1396M** Specification for Gypsum Board
- D635** Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
- D638** Test Method for Tensile Properties of Plastics
- D732** Test Method for Shear Strength of Plastics by Punch Tool
- D1622/D1622M** Test Method for Apparent Density of Rigid Cellular Plastics
- D1761** Test Methods for Mechanical Fasteners in Wood
- D1929** Test Method for Determining Ignition Temperature of Plastics
- D2863** Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- E8/E8M** Test Methods for Tension Testing of Metallic Materials

¹ This specification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.21 on Serviceability.

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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.