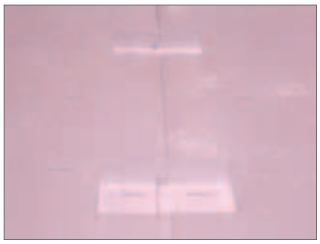
Thermomass® | CC Series



Division 3

Manufacturer:

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Product Description:

Thermomass CC Series fiber-composite connectors are designed for the construction of structurally composite, load-bearing and cladding concrete sandwich wall panels. The connectors are resistant to corrosion and alkali and, when combined with rigid integral insulation, provide a system to transfer loads between the two wythes, or layers, of concrete.

Composition & Materials:

Thermomass CC Series connectors include a structural portion composed of E-CR glass fiber and cured vinyl ester resin, as well as thermoplastic molded sealing collars. The vinyl ester matrix impregnates the fiber strands, creating a composite material that has been tested and shown to be resistant to chemical attack. The sealing collars provide a friction fit when placed within the pre-drilled slots in the insulation. The collar (stop) ensures proper embedment depth.

Types & Sizes:

The CC Series connectors provide for either 2" (50 mm) or 1 ½" (40 mm) of embedment in each wythe of concrete. The overall connector lengths are determined per the insulation thickness and minimum concrete wythe thickness. For example, if a structurally composite sandwich wall has a configuration of 3" (75 mm) of interior concrete, 2" (50 mm) of insulation, and a 3" (75 mm) exterior wythe, the connector will be 6" (150 mm) in overall length. In this instance, the product designation would be CC-150-50-50-50. The 150 represents the overall length in mm and the subsequent numbers represent the embedment depth, insulation thickness, and embedment depth in metric units respectively.

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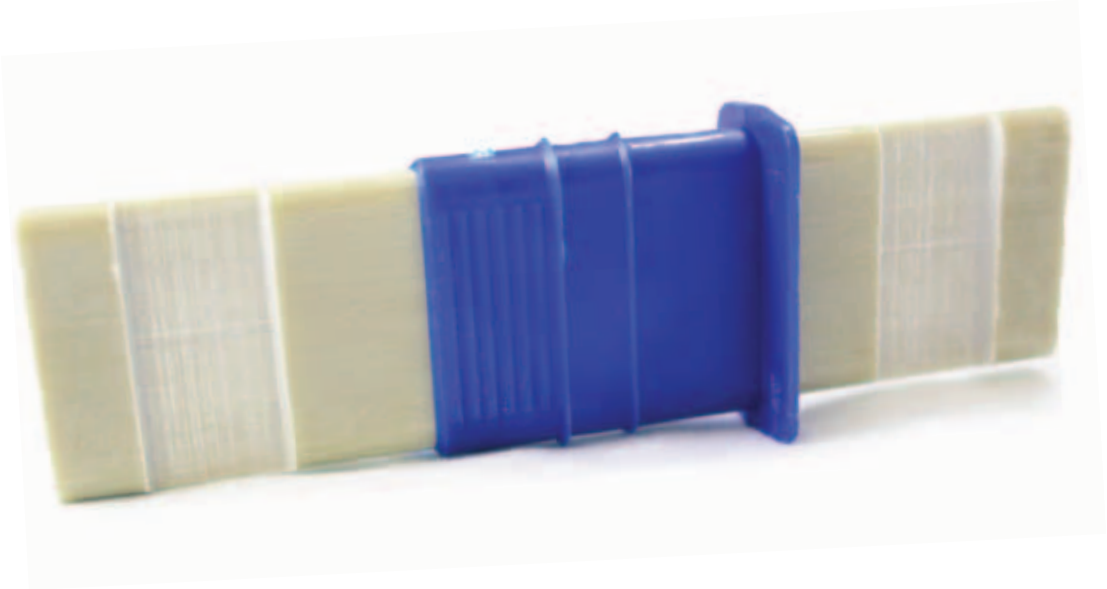

Installation & Application:

The CC Series connectors are designed for use in both site-cast tilt-up and plant pre-cast applications. In either application, the connectors are installed through pre-drilled slots in the rigid insulation and into plastic concrete. The connectors should be pushed through the slots until the collar is seated against the insulation. For complete installation instructions, please contact Thermomass.

Technical Data:

Thermomass CC series connectors are tested in accordance with ICC-ES AC320 Acceptance Criteria for Fiber-Reinforced Composite Connectors Anchored in Concrete. The connectors exhibit the properties and characteristics indicated in Table 1 when tested as represented.

- ASTM C581 Standard Practice for Determining Chemical resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures Intended for Liquid Service.

- ASTM D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

- ASTM D3039/D3039M Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials

- ASTM E488 Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements

Warranty:

Thermomass warrants that the connectors will not vary by more than 10% from performance specifications specified herein. All other warranties, expressed or implied, including the warranty of merchantability and fitness for a particular purpose, are excluded. No endorsement or promotion of any particular panel system or fabricator is intended. Thermomass makes no representation as to the performance of any panel fabricated using Thermomass CC Series connectors. The wall panel contractor is solely responsible for the performance of the building system panel. For further warranty information, contact a Thermomass representative.

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Table 1: Physical Properties of Thermomass CC Series Connectors

Connector Series		Single Connector - CC Series With 50mm embedment
Property & Test	Concrete Strength	
Tensile strength of connector rod, ASTM D3039/D3039M	N/A	126,000 psi (869 MPa)
Flexural strength of connector rod, ASTM D790	N/A	120,000 psi (827 MPa)
Ultimate tension capacity, ASTM E488	6000 psi	3439 lb (15,297 N)
Ultimate shear capacity, ASTM E488	6000 psi	3360 lb (14,946 N)
Tensile strength of connector rod, ASTM D3039/D3039M	N/A	94.5% retained strength after 3,000 hours of immersion in pH12 solution.