



Product Description

Thermomass Star series connectors are designed for the construction of non-composite, load-bearing or cladding concrete panels featuring continuous, edge-to-edge integral insulation. The fiber-composite connectors are designed to transfer loads to the structural wythe of concrete, allowing the exterior layer to expand and contract independently.

Star connectors offer the same tremendous thermal performance as the MC/MS Series, but due to its unique profile, has greater load resistance and can be spaced throughout the panel with less frequency.

Composition & Materials

Thermomass Star series connectors include a structural portion composed of E-CR glass fiber and cured vinyl ester resin, as well as molded sealing collars. The vinyl ester matrix impregnates the fiber strands to create a composite material that is stronger than steel, yet non-conductive. The collar provides a friction fit, ensuring proper embedment depth when placed within the pre-drilled holes in the insulation.

Types & Sizes

Overall connector length is dependent upon insulation thickness and panel geometry. The minimum embedment depth is 40 mm. For more information, please contact Thermomass to receive a comprehensive design guide.

Installation & Application

The Star series connectors are designed for use in plant precast applications and are installed through pre-drilled holes in rigid insulation into plastic concrete. The connectors should be pushed through the holes until the collar flange is seated against the insulation.

Technical Data

Star series connectors are tested in accordance with ICC-ES AC308, Acceptance Criteria for Fiber-Reinforced Composite Connectors Anchored in Concrete.

The connectors exhibit the properties and characteristics indicated below 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 connectors will not vary by more than 10% from performance specifications 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 Star connectors. The concrete wall panel fabricator is solely responsible for the performance of the building system panel.

Manufactured By

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Material & Physical Properties	Value
Tensile Strength	870 N/mm ² (126.1 ksi)
Elongation at Fracture	2.1%
Flexural Strength	801 N/mm ² (116.1 ksi)
Compressive Strength	465 N/mm ² (67.4 ksi)
Shear Strength	400 N/mm ² (58 ksi)
Flexural Elasticity Modulus	32,800 N/mm ² (4,764 ksi)
Tensile Elasticity Modulus	40,000 N/mm ² (5,800 ksi)
Rockwell Hardness E, minimum	70
Core Diameter	12 mm (.472 in)
Cross Sectional Area	156.6 mm ² (0.243 in ²)
Moment of Inertia	1948 mm ⁴ (0.0047 in ⁴)
Capacity in 35 MPa concrete (5,000 psi)	21.4 kN (4,780 lbs)

Table 1: Star Series Connector Properties