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GFRC	

- **Trade Name**: Stucchitalia® GFRC
- **Common names**: Glass Fiber Reinforced Concrete / GFRC
- **Manufacturer**: **Stucchitalia International LLC**
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Summary

Formulated to assist designers in achieving ever richer and more articulated buildings, Stucchitalia® follows with ever-increasing interest the GFRC, a composite material made of concrete from very highly mechanically resistant selected cements, reinforced with alkali-resistant glass fibre, which soon became the chosen product for particularly elaborate and richly detailed models, and “open” or perforated work, whether for interiors or exteriors, thanks to its manifold characteristics. GFRC is incombustible, ideal for protective cases, insoluble and water-repellent even in the case of underwater installations.
GFRC has excellent chemical resistance for use in particularly aggressive environments, is characterized by an elevated resistance to abrasions, to atmospheric agents and to UV rays for paneling and decorative fa•ades, high workability with oxides, grit, powders and surface inert elements for impressive finishes and simulations.
GFRC is a Class A1 fire and smoke, rated composite material made using Portland cement, sand, aggregate and glass fiber that has good flexural strength properties. Parts are factory molded in a hand lay-up process to make architectural elements in a variety of shapes, patterns, textures and choices of color; or, are available unfinished for on-site painting. After de-molding, unless specified as paint ready, the exposed face of the parts is finely sandblasted to impart a uniform surface finish. Stucchitalia® GFRC parts have a nominal shell thickness of 20 mm with perimeter edges increased to a minimum thickness of 25/30 mm to provide added strength. GFRC incorporate a factory attached steel panel frame for support.

Detailed Description

Glass Fiber Reinforced Concrete (GFRC) is a designation used to refer to abroad category of cementitious products manufactured using Portland cement, silica sand, aggregate, alkali resistant glass fiber and admixtures in different proportions to meet different performance and aesthetic requirements. In architectural applications, GFRC is most commonly associated with the large decorative panels used on building facades and cladding. These large heavy panels require a structural steel panel frame to be bonded to the inside of the molded GFRC composite material for support, which is also used to attach the GFRC panel to the building structure. Cranes are typically used in the installation of these GFRC parts.
Some typical architectural applications of GFRC include low-rise exterior façade veneer panels and decorative elements such as cornices; pendiments, window and door frames; cloumns; friezes; and interior elements where a hard non-combustible impact resistant material is desired. Most molded parts are secured to the building

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structural framing and substrate with concealed fasteners. Parts can be supplied with factory molded corners to minimize field cutting. Most items are custom made to project design requirements and specifications.
Stucchitalia® work with Architects and Designers to develop a practical plan for the parts and assemblies they envision through 3D modeling or scaled or full size mock-ups. Detailed shop drawings and material samples are prepared for approval prior to manufacture.

Physical and Mechanical Properties

GFRC composite panel made with white Portland cement, silica sand, aggregate, and alkali resistant glass fiber with a high Zirconia content – min. 16%.

Matrix:	Portland cement, sand and polymer	
Finish:	Custom color matching available	
Surface:	Lighthly sandblasted or smooth if paint ready	
Density:	2145 Kg/m^3	
Weight:	32-37 kg/m^2	Typical weights – parts with deep surface relief, etc. may weight more. Submit drawings for a more accurate estimate.
Shell thickness:	16 mm nominal	Subject to manufacturing tolerances. Weight and Measurement conversions may be rounded.
Edge thickness:	25/30 mm minimum	
Glass Fiber:	4% minimum	
Max. lenght moldings:	1.2 m	
Max. size veneer panels:	1200x900 mm	
Max. size molded parts:	1,4 m^2	

Site Conditions

Site conditions must be reviewed for compliance with Stucchitalia®' requirements, installation tolerances and any other conditions that may effect the installation and performance of GFRC parts. Any unsatisfactory conditions are to be corrected prior to installation. Field measurements are to be taken to verify the dimensions, including those not shown on the drawings, and provide specific details of any changes for inclusion into the Stucchitalia® shop drawings prior to it commencing the manufacture of custom molds and GFRC parts. Stucchitalia® will produce parts in accordance with the approved shop drawings only and is NOT responsible for any deviations between the site conditions and the approved drawings.