

CATEGORY

BUILDING MATERIALS



PRODUCT / TECHNOLOGY



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GLASS FIBRE REINFORCED CONCRETE PRODUCTS

Alternate to conventional building products based on cement concrete



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CONTACT DETAILS

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BRIEF

Glass fibre Reinforced Concrete (GFRC) is an alternate to cement concrete and is making a significant contribution to the economics, technology, and aesthetics of modern construction worldwide for over 50 years. GFRC is not a single material but a family of high-performance cement based composites reinforced with special alkali resistant glass fibres, which can be engineered to suit a wide range of applications in engineering, architecture. The typical raw materials used for GFRC products are cement, sand, water, admixtures and alkali resistant glassfibres. The GFRC products offers high toughness, high tensile strength, high ductility as compared to plain concrete. It is easy to cut and has high strength to weight ratio.

The various products are facades, sunscreens (grills), column cladding, capitals, brackets, keystone, window sill and door surround, cornices, ac cover, planters, landscaping items, corbels etc.



SALIENT FEATURES

- Resistant to Weather, Corrosion, Fire, Abrasion and Fungi
- Light Weight due to thin sections
- Non Combustible, Low Thermal movement, High Impact resistance
- Suitable In Earthquake Prone areas
- High Density With Low porosity
- Ease of forming Complex Shapes
- Very low maintenance
- Can Impart Any Surface texture & finish
- Easy to handle, Transport and fast to install
- Environmental friendly
- Proven Long term performance
- Mouldability
- GFRG is lighter as it is cast in thinner sections and therefore 75% lighter than similar pieces cast with traditional concrete
- High flexural strength and strength to weight ratio
- GFRG is made of glass-fibre and therefore there is no need of other kind of reinforcement which are difficult to place in complex shapes.
- Excellent surface finish and adaptable to fine details



ECONOMIC ASPECTS

- GFRG offers sustainable products having low life cycle cost and economical than the conventional cement concrete products.
- Being thinner sections, cost per sq.ft. is less than conventional products



SUSTAINABILITY ASPECTS

- Low toxicity raw materials
- Durable, long lasting materials reduce replacement, maintenance and repair
- Can be supplied prefinished to eliminate VOC's during painting
- GFRC products meets ASTM E136 and rated as green products
- Hurricane and missile impact resistant
- Lightweight GFRC panels use 80% less material than precast, reduces fuel and costs of transportation
- Reduced cement and energy usage
- Durable
- GFRC uses less cement than equivalent concrete and also often uses significant quantities of recycled materials (as a pozzolan), GFRC qualifies as sustainable.

SUITABILITY AND AVAILABILITY

- Suitable for all climatic conditions.
- Particularly suited for refurbishment of old buildings and changing facades.
- Available at all places. The plant can be installed near the project site if the quantum of product requirement is high.

LIMITATIONS, IF ANY:

- Skilled labours are required for handling and installation.



MARKET LINKAGES

- Available Pan-India.

MAJOR PROJECTS:

- Widely used in various projects throughout the country.

CERTIFICATION/INDIAN STANDARD/ ENDORSEMENT

- IS. 6432:1984 - Methods to determine properties of glass reinforced cement material.
- Specification for the manufacture of GFRG GRCA0110.
- Pre-stressed concrete institute, USA.

