

**Technical Data Sheet: Glass Fiber Reinforced Concrete (GFRC)**

**Product Overview:** Glass-Fiber Reinforced Concrete (GFRC) is a composite material comprised of cement, fine aggregates, water, polymers, and glass fibers. It offers high strength, durability, and versatility in construction applications. GFRC is commonly used in architectural cladding, façades, panels, countertops, and decorative elements due to its lightweight nature and excellent reproduction capabilities.

**Key Features:**

1. High strength-to-weight ratio.
2. Excellent durability and weather resistance.
3. Versatile design capabilities.
4. Lightweight construction material.
5. Enhanced crack resistance compared to traditional concrete.
6. Fire-resistant properties.
7. Low maintenance requirements.
8. Can be pigmented or stained for aesthetic purposes.

**Technical Specifications:**

**1. Composition:**

- Cementitious binder (Portland cement (grey/white) & other suitable binders)
- Fine aggregates (Silica sand)
- Water-reducing admixtures
- Glass-Fibers (typically alkali-resistant AR glass fibers)
- Polymer additives (for enhanced durability and workability)

**2. Physical Properties:**

Compressive Strength	35-45 MPa	ASTM C39
Flexural Strength	15-20 MPa	ASTM C947
Unit Weight	1800-2000 kg/m <sup>3</sup>	ASTM C138
Water Absorption	<5%	ASTM C948
AR Glass-Fiber Content	5% min (spray method)	PCI MNL-128

**3. Mechanical Properties:**

- High tensile strength due to the inclusion of glass fibers.
- Excellent resistance to impact and vibration.
- Flexural performance suitable for thin-section applications.

**4. Durability:**

- Resistant to freeze-thaw cycles.
- Minimal susceptibility to chloride ion penetration.
- Long-term dimensional stability..

**5. Installation and Maintenance:**

- GFRC elements are typically prefabricated in controlled factory conditions.
- Installation requires standard construction equipment and methods.
- Regular cleaning with mild detergent is sufficient for maintenance.
- Periodic inspection for cracks or damage is recommended.

**6. Environmental Sustainability:**

- GFRC can contribute to LEED (Leadership in Energy and Environmental Design) certification due to its durability, energy efficiency, and potential for recycled content.
- Low carbon footprint compared to traditional concrete due to its reduced weight and energy-efficient production methods.

**7. Applications:**

- Architectural cladding and façades.
- Panels and partitions.
- Countertops and vanity tops.
- Decorative elements (columns, balustrades, cornices, etc.).
- Public spaces (benches, planters, sculptures, etc.).

**Handling and Storage:**

- Store GFRC products in a dry, covered area to prevent moisture absorption.
- Handle with care to avoid damage during transportation and installation.
- Follow manufacturer's recommendations for storage duration and conditions.

**Safety Precautions:**

- Wear appropriate personal protective equipment (PPE) when handling GFRC materials, including gloves and eye protection.
- Avoid inhalation of dust during cutting or grinding operations.
- Follow safety guidelines for mixing and handling cementitious materials.

**Disclaimer:** The information provided in this data sheet is for guidance purposes only and does not constitute a specification. Users should conduct their own testing to determine suitability for their specific application. Manufacturers' instructions and recommendations should be followed at all times.