

PRODUCT DESCRIPTION

Glass Ribbed Rods (GRR™) are a family of high strength prefabricated glass/resin composite rods. GRR™ is used as an internal and external reinforcement of concrete to add strength and stiffness to concrete, masonry and wood components. GRR™ rods are used in a technique known as Near Surface Mount or his NSM Reinforcement.

PRODUCT FEATURES

- GRR™ rods can be effectively secured to adjacent structural members
- Non-corrosive
- Light-weight
- High Strength
- Less impact on part appearance and better aesthetics
- Increases the flexibility of in-plane or out-of-plane masonry walls
- Effective top reinforcement product for panels and beams

PRODUCT USES

GRR™ is particularly attractive for reinforcing surfaces susceptible to abrasion and mechanical damage, such as Parking decks, slabs and sidewalks. In masonry structures, GRR™ bars can be incorporated into existing joints to increase capacity without aesthetic impact.

HOW TO USE

DESIGN

Design should comply with ACI 440.2R or recognized design/ specification entity, and is typically based on CFRP contribution determined by detailed analysis. Design values will vary based on project requirements and applicable environmental and strength reduction factors. Contact our company to determine applicable design factors.

TECHNICAL DATA

Fiber Type	Glass
Matrix Type	Vinyl ester or Polyester
Fiber Volume Fraction	70%
Tensile Strength	1300 MPa
Shear Strength	193 MPa
Pull-Out Strength	11.6 MPa
Modulus of Elasticity	40,800 MPa
Elongation at Break	1.6%

Physical Properties

Name	Rod Diameter (mm)	Design Area (mm ²)
GRR™ ₆	6	30
GRR™ ₈	8	51
GRR™ ₁₀	10	80
GRR™ ₁₂	12	115



Glass Ribbed Rod - GRR™

GRR™ ₁₆	16	201
GRR™ ₂₀	20	314
GRR™ ₂₅	25	491
GRR™ ₂₈	28	616
GRR™ ₃₂	32	805

SURFACE PREPARATION

- Before installing the GRR™ bar, the integrity of the facing concrete should be verified. Corrosion of internal rebar must be properly addressed prior to installation. Create a groove in the surface of the concrete element. Minimum groove width and depth is 1.5 times the rod diameter. The groove surface should be clean and tight. It must be dry and frost-free.

CUTTING

- GRR™ rods can be cut to length using a fine-blade reciprocating saw, grinder, or wall chaser.

APPLICATION

- The GRR™ rods are bonded in the grooves, below the surface, using applicable adhesive resin and/or putty filler.

STORAGE

- Store out of direct sunlight in a dry place between 5°C – 35°C.
- Store rods in original packaging until ready to use. Keep dry and free from dust and oil.

HANDLING

Approved personal protection equipment should be worn at all times. Particle mask is recommended for possible airborne particles. Gloves are recommended when handling fabrics and resins to avoid skin irritation. Safety glasses are recommended to prevent eye irritation. Wear chemical resistant clothing / gloves / goggles. Ventilate area. In absence of adequate ventilation, use properly fitted respirator.

CLEANUP

Dispose of material in accordance with local disposal regulations. Uncured material can be removed with approved solvents. Cured materials can only be

removed mechanically.

FIRST AID

In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water; contact physician immediately. For respiratory problems, remove to fresh air. Wash clothing before reuse.

DISCLAIMER OF LIABILITY

AFZIR, LLC warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within six months of the date of purchase.

AFZIR shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory.

The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production.