A photograph of a concrete room with a bright doorway on the right. The floor is covered with scattered glass fibers, and a pile of fibers is visible on the right side. The text "CONCRETE REINFORCEMENT WITH AR GLASS FIBRES" is overlaid in the center.

CONCRETE REINFORCEMENT WITH AR GLASS FIBRES

GLASSMAN MICRO FIBRES



ENGINEERING THE FUTURE OF CONCRETE REINFORCEMENT

DD Solutions is one of India's pre-eminent companies committed to delivering the latest in fibre reinforced concrete technology. We have 10 years of extensive experience in niche construction materials and other allied services. This leading edge has helped us remain steadfast in our mission to provide strong responses to the challenge of demanding environments that surround the construction industry today.

Our highly efficient, durable, and environmentally-friendly fibre reinforced concrete material, thus, ensures safe and excellent building all over the world.



Our Values

Integrity | Credibility | Quality | Ethics | Trust

GLASSMAN AR GLASS FIBRES FOR REINFORCING YOUR STRUCTURES

Building with modern materials ensures the strength, stability and longevity of structures, which are otherwise susceptible to many challenging environments. Glass Fibre Reinforced Concrete (GFRC) is an advanced technology and strong answer to the harsh weather conditions confronting the construction industry around the world today.

Glass Fibres are truly versatile and adaptable in that they prevent the structures from corrosion damage by paving the way for a more cohesive and homogenous mix that gives the concrete its ultimate strength, thereby ensuring solid and even reinforcement as well as prevention of cracks.

Glassman Glass Fibres take this concrete reinforcement technology to a whole new level, adding more to its unique properties that make it suitable for a wide range of product applications. Highly Alkaline resistant, Glassman Glass Fibres act as the principle tensile load carrying member, while the polymer and concrete matrix binds the fibres together and helps transfer the load from one fibre to another, giving the concrete its optimum strength. Additionally, Glassman Glass Fibres do not trust out through the surface or require extra finishing procedures.





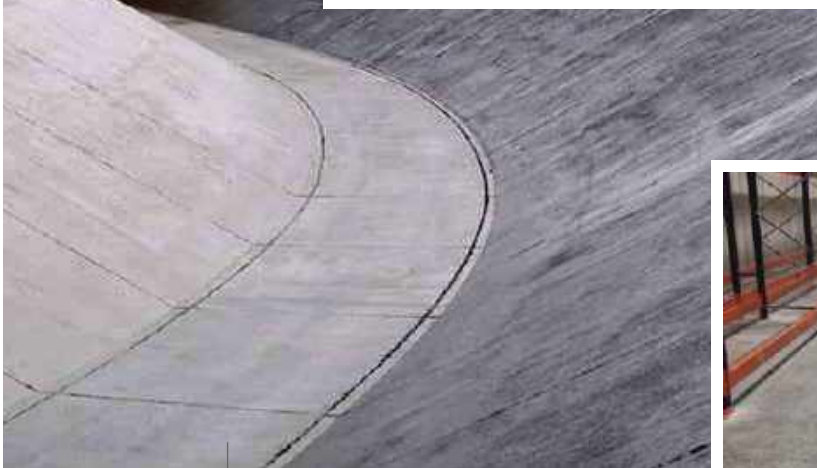
GLASSMAN GLASS FIBRES IN PLASTERING

Shrinkage cracks are generally caused by improper plastering, which allows water and other pollutants to enter into the structure, causing lower permeability, corrosion, leakage and dampness. Glassman Glass Fibres being insert while plastering do not let the structure corrode. The quality of concrete is thus dramatically improved and what you get is an extraordinary reinforcement in the entire section of plaster.

**CONCRETE
ROADS**

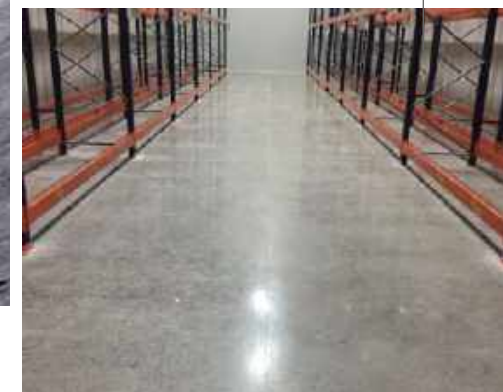


**TUNNEL
LINING**



**CANAL
LINING**

FLOORING



GLASSMAN GLASS FIBRES SPECIFICATIONS

Dosages :

- 0.5 to 1 kg per m³ of concrete
- Plastering: 85 – 150 gm/bag of cement
- Flooring and Roads: 900 gm per cubic meter of concrete
(Higher the load higher will be the dosage depending upon the floor / road)
Addition in dosage depends upon the application and desired results.

Packaging and Storage :

Standard Packing of 20 kg per bag. Packing can be tailored as per client's requirements. Micro fibres should be stored away from heat and moisture

- Glassman Glass Fibres are packed in 20 kg bags.
- They can also be tailored according to the client's requirement.

Raw Material	Density (g/cm ³)	Elastic Modulus (GPa)	Tensile Strength (MPa)
Concrete	2.4	30-40	3-4
Glassman* AR Glass Fibres	2.7	7.2	1700
Steel	7.8	210	500-1100
Polypropylene	0.9	1.5-9.5	100-500

Direction to use:

Glass Fibres can be introduced in the ready mix plant or directly in the concrete truck in the last stage, when all the aggregates have been added and mixed. Glassman AR Glass Fibres can be mixed with RMC plant or truck or into the site mixer. While mixing in plaster/concrete/wet mix, it is added in the end till it disperses properly.



Glassman Glass Fibers In Precast Products

TOP REASONS TO BUILD WITH GLASSMAN AR GLASS FIBRES

Glass fiber reinforced composite materials consist of high strength glass fiber embedded in a cementitious matrix. Alkali resistant fibres act as the principle tensile load carrying members while the polymer and concrete matrix bind the fibres together and help transfer loads from one fiber to another. Without fibres concrete would not possess its strength and would be more prone to breakage and cracking.



MINIMIZE EARLY SHRINKAGE CRACKS

Adding Glassman Glass Fibres in concrete minimize early shrinkage cracks during the concrete setting phase.



Easily Moulded

Their unique properties and good elasticity allow them to be easily moulded and manufactured to meet any specification.



Highly Versatile

Their reduced weight and minimum maintenance requirement make them a highly versatile concrete reinforcement material.



Highly Economical

They are cheaper than other artificial concrete reinforcement material available in the market, and are hence more preferable.



Highly Durable

They are highly capable of withstanding wear and tear or decay, and are hence longer lasting.



High Tensile Strength

They are resistant to the maximum tension, which means they don't tear apart under stronger forces or longitudinal stress.



Temperature Resistance

They resist heat flow to a great extent, and are hence preferred in complex constructions.



Chemical Resistance

They are highly alkaline resistant and retain their original properties over a longer duration.



Corrosion Resistance

They prevent erosion caused by oxidation or chemical action. No rusting or corroding helps keep the structure undamaged and intact for a longer time.



Non-Magnetic

Their non-magnetic properties help in achieving even concrete reinforcement.



Fire Resistance

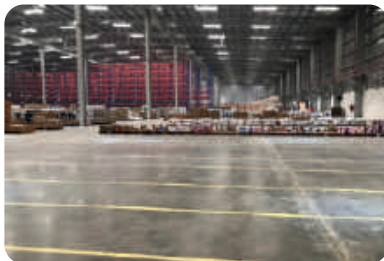
Their high-temperature resistance also make them an effective fire resistant concrete reinforcement material.



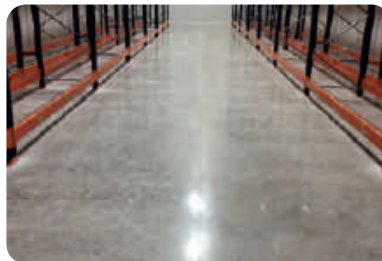
Excellent Electrical Insulator

They have negligible electrical conductivity, and thus works as an excellent insulator.

APPLICATIONS



Industrial/Warehouse Flooring



Commercial Floors



Industrial/Residential Roads



Ports



Airport Pavements



Rigid Pavements



Plaster

BENEFITS

- Cost effective versus steel mesh
- Greatly reduce plastic shrinkage cracks(up to 78% GM Fibres)
- Fast and uniform dispersion

Density of Glassman AR Glass Fibers is 2.68 gm/cm³ - similar to concrete

- Virtually invisible at the surface
- Smooth finish, no need to grind and non visible fibres to burn
- Does not corrode
- Improves abrasion resistance
- Extends serviceability of concrete
- Reduce water permeability with Glassman Micro Fibres

Technical Performance of Glassman AR Glass Fibres

Plastic Shrinkage Cracking

Product: Glassman 12mm @ 0.5kg/m³ to 1kg/m³

Solution to control plastic shrinkage cracking in combination with standard curing practices, in flooring applications under severe environmental conditions.



Fiber Type	GM 12mm 0.5 to 1kg/m ³
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LOW ADDITION RATE

Fiber Type	GM 16mm
Addition Rate	0.5 to 1kg/m ³
Benefit	Anti-cracking
Evaluation Method	ASTM C1579 (Plastic Shrinkage)



With Fiber No Crack



With Crack





Properties	AR Glass Fibres
Filament Diameter μm (micrometer) ($\pm 10\%$)	13, 19
Filament Length	6,12 mm
Filaments per kg	200 Million
Zirconia Content	17% above
Moisture Content	<0.5% Max
Density	2.7 g/cm ³
Tensile Strength	1700 mpa
Modulus Elasticity	72 GPA - 10X10 ⁶ PSI
Incombustibility	Yes
Resistance to Acid	Yes
Softening point	860°C
Electrical Conductivity	Very Low
Thermal Expansion	5.4 ($\mu\text{m}/\text{m}^{\circ}\text{C}$)
Chemical Resistance	Very High
Strain to Failure	2%



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