



# *The advantages of GRP (Fiberglass)*

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- GRP Building Materials Company -

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## *I. What is GRP ?*

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❖ GRP stands for Glassfiber Reinforcement Polyester.

❖ GRP Specifications

GRP is a light, durable and astonishingly tough constructional material which can be fabricated into all manner of products. GRP is a composite of a resilient durable resin with an immensely strong fibrous glass. The resin is the main component and is normally a polyester resin. Just as concrete may be reinforced with steel rods, so polyester resins may be reinforced with glass fibres to form GRP. This is the fabrication process, a single surface mould on which is impregnated layers of glass mat with liquid resin until the required thickness has been built up and the laminate is then extracted from the mould. Glass fibre is one of the strongest of all materials.

It is made from readily available materials, it is non-combustible and chemically resistant

## *II. The advantages of Fiberglass over other common materials*

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- ❖ The mould side of the product is left with a smooth aesthetically pleasing gelcoat finish, which never needs painting.
- ❖ GRP is cost effective in the long term, because it is corrosive resistant and maintenance free.
- ❖ Tooling costs are very low, in comparison with injection moulding and deep-draw steel tooling.
- ❖ We can apply a range of textures to the finished surface, including render, brick and stone.
- ❖ Damaged products are repairable.
- ❖ GRP products have good chemical resistance.
- ❖ GRP has good dielectric properties which makes it excellent as an electrical insulator.
- ❖ GRP products have good heat insulation.
- ❖ Mass production press tooling costs, are very competitive compared to other options.
- ❖ GRP is versatile.

## *II. The advantages of Fiberglass over other common materials*

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- ❖ The GRP advantages in comparison to galvanised steel:
  - corrosion resistance is not related to the zinc coating quality as on the steel,
  - no risk of injury,
  - resistant to salt water, to sulfur, chlorine or basic environments.
  
- ❖ The GRP advantages in comparison to aluminium:
  - no electrolytic corrosion due to contact of two metals in humid environment,
  - much higher life span in basic, chlorine or halogen atmosphere.
  
- ❖ The GRP advantages in comparison to stainless steel:
  - absence of corrosion under tension (mechanical),
  - absence of hollow corrosion,
  - recommended in chlorine environments.

### ***III. Mechanical Strength***

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- ❖ A specific resistance, 2 to 4 times higher traditional materials, allows significant save of weight.
- ❖ According to applications, a GRP solution (i.e.: 70% fibers, 30 % resin) allows a weight save, for equal resistance, up to:
  - 60 % in comparison to stainless steel,
  - 65 % in comparison to aluminium, -
  - 75 % in comparison to hot dip galvanized steel.

#### *IV. Installation - Assembling*

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A quick and reliable assembling reduces your installation times up to 50%.

The GRP advantages in comparison to metals:

- no earthing required
- no requirement for electric continuity test,
- easy to work (cut, drill) on site,
- no burring, no finishing and no risk of injury.

## V. Thermal / Electrical Insulation

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Interesting properties for security ....

- excellent thermal insulation (1000 times less heat conductor than aluminium) ,
- no spark risks due to contact with other materials,
- excellent electrical insulation ( ~ 6 KV / mm).

- The End -