

# DELTA COVER s.r.l.

## Characteristics and advantages of GRP covers



Thanks to its special characteristics, GRP continues to offer excellent performance in various fields of application, including: tanks and cisterns containing a wide range of substances (acids, water, foodstuffs in general), water piping and sewage systems, hulls, flower boxes, furniture, swimming pools, etc.

The covers manufactured by DELTA COVER are another example of this incredible material.

Why choose fibreglass covers over other solutions?

### Simple!! Because they are:

- **lightweight** (see table - on average 20 kg/m<sup>2</sup>)

The specific weight of fibreglass is approx. 1.5 g/cm<sup>3</sup>, so much lighter than stainless steel (7.8 g/cm<sup>3</sup>) and aluminium (2.7 g/cm<sup>3</sup>). The high performance/weight ratio allows structural design with low energy impact. Furthermore, its lightness positively influences movement and logistic-related activities. Another parameter linked to this attribute is the low response to inertial forces in the event of design for seismic zones.

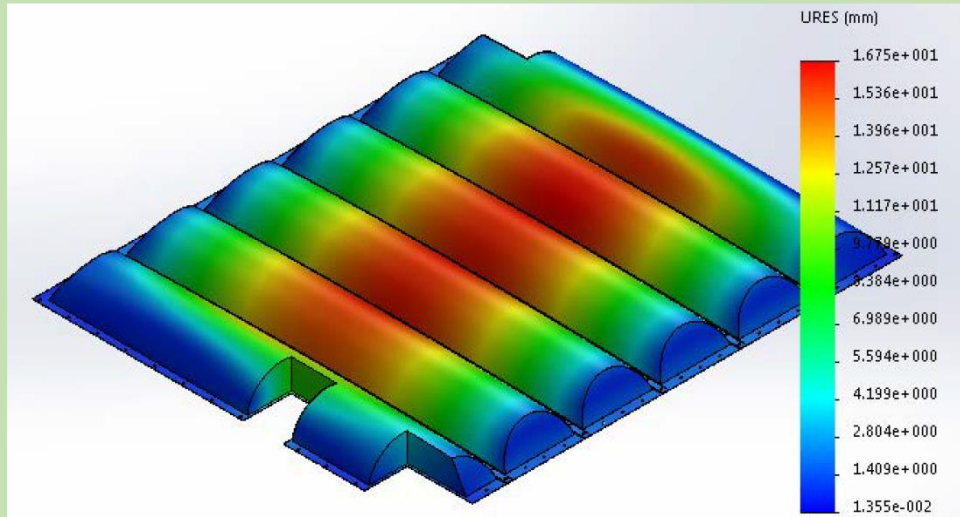
| DENSITY (g/cm <sup>3</sup> )                           |      |            |           |                 |
|--|------|------------|-----------|-----------------|
| Comparative list with other materials (average values) |      |            |           |                 |
| WOOD   | PVC  | FIBREGLASS | ALUMINIUM | STAINLESS STEEL |
| 0.70   | 1.40 | 1.50       | 2.70      | 7.80            |

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- **safe and guaranteed**

Each GRP cover is modelled and calculated with the most advanced finite element (FEM) software by applying high safety coefficients of static calculation. Manual stratification using fabric (type E) guarantees the certain thickness required by structural calculation.



- **self-supporting and treadable**

Dimensioned to resist loads according to legislation NTC18 (distributed, concentrated, wind and seismic loads).

- **customisable for a wide range of requirements**

The vast range of moulds available and the experience acquired over more than 30 years has allowed us to offer the client the most suitable solution and reduced manufacturing times.

- **resistant to mould and micro-organisms**

- **resistant to corrosive substances**

Using suitable acid-resistant vinyl ester resin on the internal parts of the cover in contact with the enclosed corrosive gases (e.g.: H<sub>2</sub>S). The 10-year warranty we give against perforating corrosion and the numerous installations over more than 30 years around Italy are testimony to this.

- **resistant to atmospheric agents**

Such as snow, wind, frost **and particularly resistant to hailstones**, on the contrary to covers manufactured in metal or PVC which can be easily damaged beyond repair.

- **resistant to UV rays and saline environments**

Using isophthalic-neopentyl gel-coat paint certified for naval construction, the outer surface of the cover modules guarantees high strength against sunlight and brackish environments.

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- **resistant to fire**

Where required, using fire-retardant resin, GRP covers can guarantee various levels of fire resistance.

- **long lasting (+30 years)**

Fibreglass is material with very low water absorption capacity (0.5%). Therefore, it won't decay and is made to last over time. GRP covers installed in the mid-Eighties are still in use today and in excellent condition.

- **excellent mechanical strength characteristics**

Among its best qualities, fibreglass offers the combination of mechanical strength and elastic resistance. Stratification and the possibility of varying the thicknesses based on needs allow all loads planned to be guaranteed by construction legislation in force (NTC18).

- **no particular maintenance**

PRFV covers have zero management costs because they are practically maintenance free.

- **easily removable for any type of intervention (even with full tanks)**

The difference from metal or Teflon-coated covers is that each GRP module is individually removable (even in pairs), thereby allowing dozens of metres of coverage to be removed in just a few minutes, leaving the tank completely free if maintenance has to be carried out inside. Specific lifting points are found on each module.

- **possibility of covering large openings without intermediate supports**

Unlike other types, GRP covers can reach 23 m openings without having to install cross-sections or sub-structures for support.

- **less environmental impact**

The same shape and the possibility of varying with a range of over 100 colour shades reduce visual and environmental impact. Unlike aluminium covers which are instead totally flat, highly reflective and yellowish;

- **possibility of fast and safe installation, (even later) of inspection trapdoors, flanged outlet connections, relief valves, etc.**

- **can be recycled or dismantled (DOES NOT POLLUTE!!)**

The GRP covers are manufactured to last over time and after years you can, if you wish, paint them both inside and out to further prolong the operating life.

It is recyclable, as recently done by some specialist companies who by crushing the waste obtain filler for use also as raw material to create indoor and outdoor furniture, coatings, flooring, etc.

(see: [www.geesrecycling.com](http://www.geesrecycling.com)).

Disposal is easy however, being plastic material and therefore easily dismantled as inert and non-hazardous waste (CER 070213).

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- insulates against heat

| THERMAL CONDUCTIVITY (W/mK)                            |       |            |      |      |                 |           |
|--|-------|------------|------|------|-----------------|-----------|
| Comparative list with other materials (average values) |       |            |      |      |                 |           |
| EXPANDED POLYSTYRENE                                   | CORK  | FIBREGLASS | PVC  | WOOD | STAINLESS STEEL | ALUMINIUM |
| 0.045  | 0.039 | 0.24       | 0.20 | 0.10 | 50              | 230       |

- documented

As-built drawings, Declarations of Conformity, calculations report and warranty are issued as final technical documentation.

