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1. Glass Reinforced Gypsum - GRG

1.1. General

Glass Reinforced Composite (GRG) is a white 'thin shell' alpha plaster reinforced with fiberglass mats. Due to its lightweight, strength and finish, it can be used in interior finishing.

1.2. Composition

1.2.1 Alpha Gypsum

Alpha plaster is made entirely from Calcium (II) sulphate Hemi hydrate ($\text{CaSO}_4 \cdot 1/2 \text{H}_2\text{O}$) alpha plaster with the addition of a curing additive. The composition can be formulated as follows:

- Calcium (II) sulfaat Hemi hydrate ($\text{CaSO}_4 \cdot 1/2 \text{H}_2\text{O}$) : 99,98%
- Gepatenteerde anorganische additief : 0,02%

1.2.2 Glassfiber specification

E-glass mat on a roll consisting of randomly oriented fibers in multiple layers compounded with a suitable binder and silane coupling agent.

The E-glass fiber combines the electrical and mechanical properties of traditional E-glass with the acid corrosion resistance of E-CR glass.

1.2.2.1 Glasvezelmat specificatie

Dimensionering	Binder type	Oplosbaarheid in styreen	Lineaire gewicht van fundamentele onderdelen (tex)	Hechtingsverlies %	Vochtgehalte %	Gewicht Kg/m ²
Sylane	Polyester	Laag	25	6	< 0.15	0.3

1.3 Performance

The product is generally 7mm. thick, except for parts that require more durability. The final product has a nominal weight of 7/9 kg/m² and a Rockwell hardness of M72.

Gyrex GRG with regard to its reaction to fire behavior achieves the following classification:

- A1** volgens de norm EN13501-1:2018 – rapport nummer 20858e EN13501-1
- A2-S1-D0** volgens de norm EN13501-1:2018 – rapport nummer 20858C EN13501-1

G.R.G. is generally delivered as a painter-ready product (the natural color of the product ranges from white to grey-white with a visible fiberglass pattern). Irregularities, screw holes still need to be finished and sanded.

G.R.G. is subject to water damage if it is constantly placed in a very wet place. It is recommended to use a relatively dry place to avoid damage.

1.3.1 Tolerance

The final dimensions of the finished G.R.G. product must be such that, when installed, all dimensions meet the following permissible criteria or architectural requirements:

- For a total length and height of maximum 3 meters, the deviation may only be ± 3 mm per m1.
- The edges have a deviation of ± 3 mm. and the evenness, i.e. the deviation over 1 meter of straight line edge line placed at an arbitrary point of a plate, must indicate an even surface with deviation included around ± 3 mm.
- Squareness of corners: it concerns the difference between the work performed in relation to the prescribed angles (reveals, chimneys, ...) which can be straight or oblique. The proposed angle may differ from the design by a maximum of 5° degrees.

Important: A finished surface should never be delivered under scorching light or backlight. According to the rules of the art, the delivery takes place in daylight, with the naked eye and from a distance of 2 m, perpendicular to the surface to be checked. Any control methods that deviate from this are not allowed.

1.4 Installation

Due to the special aspect of each individual product, fewer structures will be required for a G.R.G. installation than conventional systems for installing plasterboard and other materials.

G.R.G. is usually installed on lightweight components placed around plasterboard ceilings.

These components can be used for both vertical and horizontal surfaces and this is therefore the most efficient way of working. If necessary, due to special design, a second more solid steelwork can be placed first.

The ceiling parts are suspended by sprung quick hangers. The maximum intermediate distance is 1200 mm, the quick hanger and GRG element are connected by a bound metal ceiling profile.

The interconnection of two GRG elements is always done by vulcanization along the invisible side and the eruption along the visible side is removed with a spatula. All screw holes and gaskets are filled with the same plaster mixture as used in the production process. Traditional sealing products can also be used for this.

G.R.G. is installed using the traditional racking systems and, if weight were a factor, one can always count on the standard lifting machines.

G.R.G. can be cut either with a handsaw, or with a diamond or metal blade angle grinder or with a jigsaw, so only standard hand tools are needed for installation purposes.
