

# GLASAL

## Product Information Leaflet<sup>1</sup>

The following GLASAL products are available:

- **GLASAL**: standard product
- **GLASAL-T** for flat tunnel lining
- **GLASAL-TR** for curved tunnel lining (reinforced with metal strips on the back)
- **GLASAL-TF** for fire stable tunnel lining (glued on PROMATECT-H)

### 1. Product composition

GLASAL sheets consist of the following:

- Portland cement
- mineral fillers
- natural organic reinforcing fibres
- additives
- mineral coating on the face

### 2. Production method

GLASAL sheets are manufactured on a Hatschek machine and are compressed and autoclaved. The panels are then finished with a mineral coating which is enamelled by a chemical process.

### 3. Dimensions and tolerances

Standard thicknesses : 5 and 7.5 mm

Untrimmed	Trimmed
1240 x 2520 mm	1220 x 2500 mm
1240 x 3070 mm	1220 x 3050 mm

	Untrimmed	After cutting
Thickness	+/- 10%	+/- 10%
Length and width	+/- 5.0 mm	+/- 1.5 mm and +/- 1.0 mm if L x W < 1 x 1 m
Squareness	2.5 mm/m	1.0 mm/m

### 4. Weight

Thickness (mm)	Weight (kg/m <sup>2</sup> )	1220 x 2500 mm (kg/sheet)	1220 x 3050 mm (kg/sheet)
5	8.8	26.8	32.7
7.5	13.2	40.3	49.1

<sup>1</sup> This product information leaflet replaces any previous editions. E.P.O. reserves the right to amend this information leaflet without prior notice. Readers should always make sure to consult the most recent version of this document.

## 5. Colours<sup>2</sup>

GLASAL sheets have a smooth silky gloss surface and are available in 18 standard colours:

Pegmatite – 803 / Steel blue – 787 / Viridian – 795 / Travertine – 801 / Shell – 511 / Dutch beige – 783 / Veldspar white – 500 / Limestone – 700 / Stone grey – 793 / Serpentine – 712 / Oyster – 800 / Chalk – 798 / Lava red – 794 / Mahogany red – 786 / Coral rose – 775 / Pewter – 524 / Graphite black – 788 / Sandstone – 802

Tailor made colours are available on the basis of a colour sample, provided that mineral pigments are available.

## 6. Technical properties (average values)

Density		: 1580 kg/m <sup>3</sup>
Bending strength <sup>3</sup> (air dry)	//	: 35.0 N/mm <sup>2</sup>
	⊥	: 26.0 N/mm <sup>2</sup>
Modulus of elasticity	//	: 17000 N/mm <sup>2</sup>
	⊥	: 15000 N/mm <sup>2</sup>
Maximum water absorption		: 23 %
Moisture movement (30-90%, mean)		: 0.5 mm/m
Thermal expansion coefficient		: 15*10 <sup>-6</sup> m/mK
Thermal conductivity coefficient		: 0.36 W/mK
Water vapour diffusion resistance number		: 250
Frost resistance		: frost resistant
Reaction to fire according to EN13501-1		: A2
Hardness		: 5 on Mohs scale

GLASAL meets the requirements of the European Norm EN 12467 and is CE-marked.

## 7. Advantages

- No flame spread, no fume development, no toxic gasses
- resistant to high temperatures
- water resistant
- resistant to fungus, bacteria, insects, vermin, etc.
- resistant to many chemicals
- environmentally friendly, no harmful gas emissions
- frost resistant
- high dimensional stability
- strong and rigid sheet
- smooth aesthetic surface
- very durable and hard coating
- high and diffuse light reflection (depending on the colours)
- anti-static

<sup>2</sup> See the most recent colour chart for an illustration of the colours.

<sup>3</sup> A safety factor should be applied whenever permissible loads are calculated.

## **8. Applications (not exhaustive)<sup>4</sup>** (see also application guidelines for certain applications)

- Façade: exterior wall cladding, fascia, soffit
- Tunnel lining
- Interior wall cladding
- Suspended ceilings
- Furniture cladding in laboratories / kitchens
- Sandwich panels (specify at time of order; application is the responsibility of the manufacturer of the sandwich panels)

## **9. Working guidelines** (see also working guidelines ETERNIT flat sheets)

### Cutting:

- stationary saw, slow rotation with tungsten carbide-tipped blade or fast rotation with diamond cutting blade without teeth
- hand circular saw (with rail), slow rotation with tungsten carbide-tipped blade or fast rotation with diamond cutting blade without teeth
- scoring knife with tungsten carbide-tipped point (GLASAL 5 mm) (and pincers for narrow strips)
- shear (GLASAL 5 mm)

### Edge finish:

- a milling cutter
- fine emery cloth or sanding block

### Drilling:

- for holes: tungsten carbide-tipped drill bit (or complete drill in tungsten carbide) with a 60° nose angle. Drilling without hammer !!
- for circular openings: hole saw or circular cutter, tungsten carbide-tipped.

The sheet should be supported around the hole to be drilled (e.g. by a wooden board).

!!: Cutting and drilling must take place in a dry environment. All dust must be removed immediately from the sheet with a dry towel to avoid permanent stains.

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<sup>4</sup> The applications for GLASAL sheets set out in this document are for illustration only. If in any doubt regarding the suitability of GLASAL sheets in any given application, it is advisable to request recommendations from E.P.O. . Under no circumstances can E.P.O. be held liable for applications which have not been approved by E.P.O..

Fixing accessories:

Copper accessories should not be used for fixing GLASAL. The material of the fixing accessories (e.g. stainless steel, galvanised steel, phosphated steel) is chosen dependent on the application and the environment.

1) Gluing (concealed fixing):

GLASAL can be fixed with adhesive. The adhesive is to be used in accordance with the application guidelines and guarantee conditions of the adhesive supplier. Further information is available from E.P.O.

2) Screwing:

Screws with mushroom head  
The GLASAL sheets need to be pre-drilled

3) Nailing:

Nails with flat head  
The GLASAL sheets must be pre-drilled when fixing with nails. Copper nails can not be used.

4) Riveting:

Stainless steel rivet and associated cylinder in accordance with the Astro-riveting system.

Caulking:

Only use neutral mastics. Non-neutral silicones or thiokols can result in staining.

Touching up:

On request, touch-up paint can be supplied.

Health and safety aspects:

While the sheets are being processed, dust can be released which can irritate airways and eyes. It is recommended that a dust mask and safety goggles be worn. Appropriate dust extraction or proper ventilation should be used depending on the room in which the work is being carried out or the equipment being used. Long-term exposure to dust can be harmful to health.



## **10. Maintenance and cleaning** (see also cleaning advice ETERNIT flat sheets)

For minor soiling, washing with a mild household detergent or soft soap solution followed by rinsing with clear water.

## **11. Handling** (see also working guidelines ETERNIT flat sheets)

The sheets are packed on pallets. They must be kept dry during transport. The sheets must be horizontally stacked on a flat surface. The sheets must always be sufficiently supported so that they do not sag. The sheets must be stored in a dry ventilated space. If the sheets are stored outside, they must always be protected against rain by a tarpaulin or plastic sheet. If the sheets do become wet in the packing, all packaging must be removed and the sheets must be wiped dry and placed in a way that they can dry completely. A sheet must always be lifted from a stack by two people and then be carried on edge.

## **12. Guarantee**

The guarantee and the guarantee conditions are available on request from E.P.O.



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