

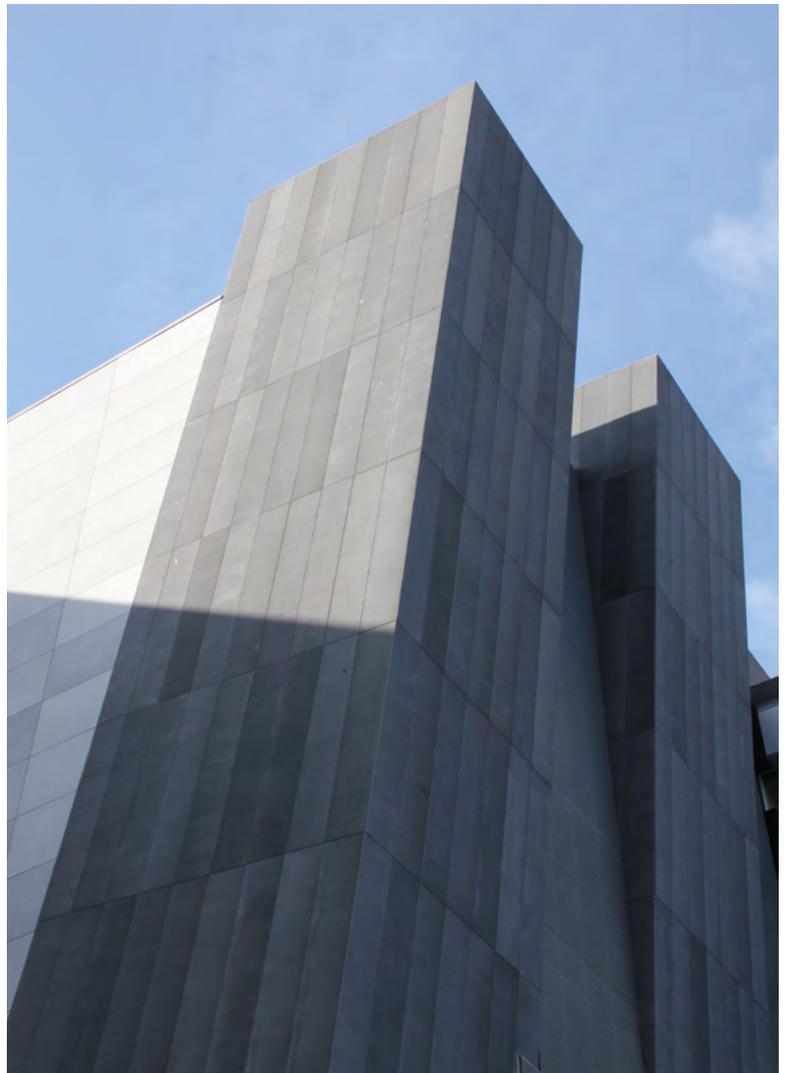
polycon<sup>®</sup>

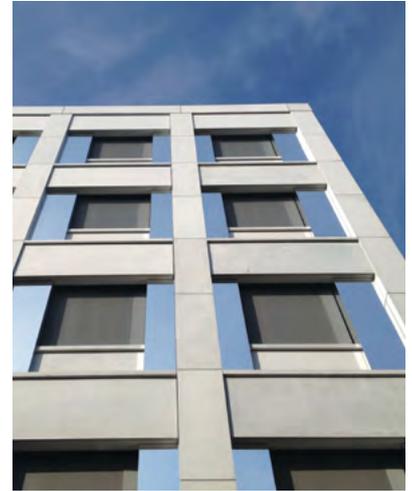


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Architectural Cladding Specialists

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Antwerp,  
Belgium

## POLYCON

### Introduction

Polycon™ glassfiber reinforced concrete (GFRC) is an incombustible (Fire Behaviour classification A1 as per DIN 4102) composite material that combines the advantages of concrete and glassfiber. Concrete has high resistance to compression but it is brittle and has low tensile strength. These disadvantages are overcome by the inclusion of alkali-resistant glassfiber rovings into the concrete matrix (cement, mineral fine aggregates, water), so that the resulting composite material has much higher elastic modulus and tensile strength than plain concrete. GFRC can therefore be produced in lower thicknesses than traditional concrete, dispensing also from the need of inserting metallic reinforcements. Polycon™ GFRC satisfies the requirements of modern architecture in terms of quality of the components, structural functionality and aesthetics, environmental friendliness and sustainability, durability and cost-effectiveness of the construction.

### The possibility of using

Polycon glass fiber reinforced concrete can be effectively used in the design and implementation of structural elements not only outdoor but also in interior design. Due a wide spectrum of imprinting structural matrices application, as well as an additional surface treatment, this can be easily accomplished by a huge variety of different visible surfaces, not only for the cladding board materials and panels, but also for complicated shape architectural elements, shapes and spatial elements and design solitaires. None of the products from material Polycon is limited by "dimensional constraints", which completely eliminates the issue of waste and residual materials which disproportionately burden the economy of works beyond the normal calculated

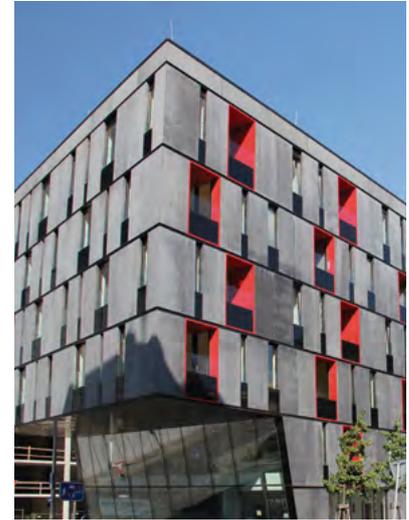
costs. Their contribution is significant in the context of environmental requirements.

### Appearance

Unlike the serial and static uniformity of construction materials with synthetic color coatings, one of the main advantages offered by Polycon™ GFRC is its natural visual aspect, each panel or element having its unique character in terms of color shade and surface appearance due to the intrinsic variability of its natural components (cement silicates and oxides, mineral sands, ferric oxide pigments, water) and their interaction with air moisture, light and dust. Polycon™ GFRC allows therefore the realization of truly "living façades". The possibility to produce it in any size and with any surface finish or texture desired, enhances the creative freedom of the designers, without forcing them to operate within the frame of a definite set of standard formats, colors or surfaces.

### Surfaces

Polycon™ GFRC can truly transform your dreams into reality. Besides flat smooth or structured surfaces, in relief, textured or engraved surfaces can also be realized in many different standard patterns (i.e. plaster, wood, masonry, stone and rocks, geometric, oriental decoration motifs, ribbed and corrugated profiles, texts or logos, pictograms, and so on) or also on custom individual patterns to make each project truly unique.



Leuven,  
Belgie

## POLYCON

### Coloring

Components of Polycon material can be delivered with completely the natural design, ie. without any colored pigments but also the material can be pigmented during the production using a suitable color pigments according to the desired shade of pigmented glass-fiber-concrete mass. Characteristic appearance of natural materials is still maintained by material coloring. If interested, you can also adjust the surfaces using paint suitable for alkaline substrates. Surface finishing with special resins is also possible. Using of coating compositions suppress the creation of the characteristic appearance that is formed by unified paints.

The highest values with regard to strength parameters are achieved by direct manual pressurized spraying, that ensures uniform deposition alkali-resistant glass fibers in the sprayed surface (mass). The positive water ratio and the duration of flat oriented fiber dispersed in matrix ensures that the material will stand even in high demands for its using and this takes consistent mechanical properties.

### Natural character

Polycon glass-fiber-concrete composite is a material, whose basic characteristic is the natural appearance. Irregularities in the context of color tonality, not entirely consistent and unified surface, small surface tension trajectories caverns, including the inclusion of material inequalities represent the typical material properties that distinguish it from unified artificial surfaces. Just this material irregularities form the basic difference between invention and uniformity. Projects imple-

mented by the Polycon material acquire their own character due its unique properties, because the material continuously responds to external stimuli related to external influences and creates not yet realized objects. Therefore, the individual projects become completely unique and unrepeatable. Polycon Material is hard, tough, and long-lasting. Due to the possibility of production of thin-walled elements is also cost-effective. Polycon material is categorized as non-combustible class A1 in accordance with EN 13501. 1 (Fire classification of construction products and buildings).

### Quality

An important aspect for material selection and its actual implementation is general agreement in the essential requirements within the expected realization design. It is important to learn the final customer or user from the beginning thoroughly with all facts which relate to the present work and inform them with all details of material specifications. It is appropriate that all active participants in the implementation process are informed about these facts prior the final products implementation of individual projects. When all the facts and circumstances relating to the project are defined in advance clearly and distinctly, then the overall impression of the overall implementation will have maximum efficiency and lead to customer satisfaction. The total clarification of technical details (including the approval of the submitted samples, the scope of which correspond proportionately making the final solution) allows to solve in advance all aspects relating to the required specifications and final design.



Amriswil,  
Švýcarsko

## POLYCON

### Graphic concrete™

Polycon Products offers this technology architects, they can use it for design of concrete facades and use the possibilities of prefabrication process. Industrial Architecture™ with Graphic concrete technology started in Finland and soon the first pieces were realized. The first facades used designs with simple stripes. When the architects began to understand the possibilities of this new technology, repetitive patterns began to appear more and more frequently. Repeating patterns designed by architects come under the brand GCPPro™ to distinguish them from GCCollection™. This is a separate collection of repeating patterns by Graphic Concrete.

### Reckli catalog of imprinting formliners

Reckli catalog of imprinting formliners Elastic structural formliners and their use in the manufacture of glass-fiber reinforced concrete elements represent unlimited design options visible surfaces. The architectural design is limited by the form type. Using the matrix eliminates almost all of limits of the glass-fiber reinforced concrete applicability. It is possible to form a facade design elements, acoustic elements, walkable elements and last but not least, garden architecture elements. The matrix is made from elastic polyurethane, whose high flexibility, elasticity and resilience enable seamless and completely demoulding and its texture reproducibility.

### Facade facing

Polycon glass-fiber-concrete tiles bring into the architecture freedom, creativity and harmony of nature. With the huge variability of possible solutions individual implementations can be designed as unique projects without any restrictions. High potential material for the design and implementation of various projects can be widely applied within the requirements of both classic design and modern design. A large number of surface structures can also be effectively used or a completely unique and unique surface proposes of specific projects that will be quite unique and not comparable with any other project. Standard colors and also high production flexibility can be used for design of completely unique mix color shade materials according to your wishes and requirements. The possibility of flexible pigmentation is not restricted to any minimum quantity and can be used for any project or implementation. The possibility of straight board tile production and also its shape and dimension of manufacturing flexibility makes the material Polycon completely unique. Polycon products can be manufactured in almost any shape shown; the limitation is given up to your imagination. Facade form elements (such as corners, jambs, lintels, parapet panels, etc.) can be easily manufactured from one piece without gap solution for individual panels.



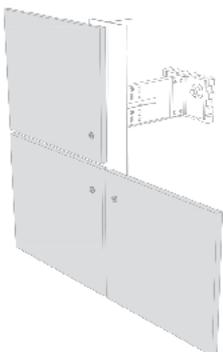
New York,  
USA

## POLYCON

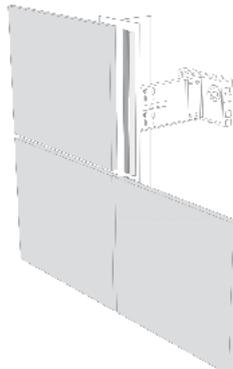
### Basic anchorage systems

Facade cladding material Polycon is proposed as ventilated facade system. Because the system must meet the required normative regulations, the chosen solution must provide for suitable and desired air circulation within the ventilated gap. Structural separation of the individual components (ie. thermal insulation and Polycon cladding) is one of the important characteristics of ventilated facades system. Properly created space (ventilation gap) effectively controls the heat and moisture balance in the building and leads to a variety of construction and physical and economic benefits.

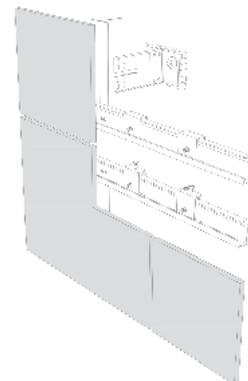
### Riveting System details (QV1)



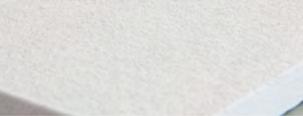
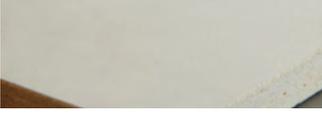
### Gluing System details (QV2)



### Keil System details (QV6)



Primary color and surface card

Designation	Name of the color shade	Surface		
		Smooth	Fine structure	Gross structure
01.1	Natural white			
02.1	Concrete grey			
03.1	Velvety grey			
04.1	Anthracite grey			
05.1	Graphite grey			
06.1	Ivory			
07.1	Sandstone			
08.1	Brick red			
09.1	Malachite green			
010.1	Travertine brown			
011.1	Slate brown			

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Technical Specifications

Dimensions and tolerances	
Dimensions	individual – as required
Shape and design	individual – as required
The thickness	individual – as required
The surface structure	<b>standard upon request</b> smooth, fine texture, coarser structure – RECKLI, imprinting structure – Graphic Concrete – Individual – on request
Length tolerance	<b>in lengths up to 2000 mm</b> ± 1,5 mm/m <sup>1</sup> <b>In lengths over 2000 mm</b> ± 1,5 mm/m <sup>1</sup>
Width tolerance	<b>in lengths up to 1000 mm</b> ± 1,5 mm/m <sup>1</sup> <b>In lengths over 1000 mm</b> ± 1,5 mm/m <sup>1</sup>
Diagonal tolerance	<b>in lengths up to 1 200 mm</b> ± 2 mm/m <sup>1</sup> <b>In lengths over 1 200 mm</b> ± 2 mm/m <sup>1</sup>
Thickness tolerance	<b>smooth plate (without structure)</b> ± 1,5 mm
Other material properties	
Thermal expansion (coefficient)	7–12 × 10 <sup>-6</sup> K <sup>-1</sup>
Specific weight	1.900–2.200 kg/m <sup>3</sup>
Weight of 1 m <sup>2</sup> of thick. 13 mm	24–29 kg/m <sup>2</sup>
Water absorption	11–13 %
Frost resistance	≥ 0,75
Tensile rupture (MOR)	8–15 N/mm <sup>2</sup>
Elastic modulus	10–20 Gpa
Flammability	A1
Flame Spread Index	is = 0,0 m/m-1
UV stability	UV resistant pigments



## Contact

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