



fibreC 3D

3-dimensional facades made of fibre reinforced concrete



RIEDER

Beton lebt.

The third dimension

The product innovation fibreC 3D enables architects and builders to use three-dimensional freeform elements on facades with complex geometries.

Architectural concrete | “Monolithic Cast“ is a special production technology for concrete panels that enables 3-dimensional cladding elements with faced concrete quality on both sides. Other surface textures such as relief concrete (by the usage of formliners) are available. Each element consists of a uniform and non-seperable unit for a monolithic appearance.

Individual | The modular formwork construction is done based on the architects’ individual design. Self compacting concrete (SCC) reinforced with fibres is pumped into the formwork to build positive as well as negative forms with dimensional accuracy. The colour of the concrete matrix is variable. The characteristic appearance of concrete creates a vivid and authentic surface on the facade.

Economical solution | fibreC 3D elements have a visual compatibility with fibreC extruded panels. A high repeatability of the produced 3D elements and the combination with flat fibreC panels offer builders an economical solution for the whole building envelope.

Intelligente assembly | Fixing anchors can be integrated during the production process (concealed) or added with screws later on. The optional use of barcode technologies (scanning) provides advantages in logistics.

Service | Rieder offers support for architects and planners from the early planning stage to the realisation of the project and gives advice regarding facade optimisation, fastening methods, logistics solutions and installation.



550 m² fibreC 3D elements with a thickness of 7 cm are cladding the Lontoonkatu 9 project in Helsinki, designed by Kirsi Korhonen and Mika Penttinen Architects. The entire facade was divided into 16 different types of panels with lenghts up to 3.8 m. More than 400 concrete elements with faced concrete quality on both sides offer an interesting view from inside of the building.



fibreC 3D facade as Brise Soleil



Pavilion enveloped with wavy concrete slats



fibreC 3D element with windows and recesses



Cast fixing anchors

Technical data

Colour	Variable, colour specification and tolerances to be defined by mock-up
Surface	Visible side on one or both panel sides, other surfaces textures on request surface quality SB2 (exposed concrete class 2 according ÖVBB guidelines); other exposed concrete class only by project-specific agreement or by reference sample / mock up
Reinforcement	Depending on statics alkali-resistant glassfibres and steel or stainless steel
Edge formation	Client specific defined by mock-up
Visual characteristics	Because concrete is a natural product, each fibreC 3D panel is regarded as a single piece. Differences in colour, structure and texture are characteristic. Efflorescences or small, visible pores are not defects. The light resistance varies depending on the colour. Differences in the surface appearance, which do not affect the technical characteristics of the panels, are permitted. [Merkblatt Sichtbeton]

Technical Specification	fibreC 3D	Norm
Size Special sizes/geometric shapes/surface structures Dimensional variation $l < 1$ m Dimensional variation $l > 1$ m Diagonal difference up to above 1.5 m Diagonal difference above 2.5 m 3.6 m	1500 x 3600 mm on request ± 3 mm $\pm 0.2 \% * l$; max = 5 mm ± 3.5 mm ± 4 mm ± 5 mm ± 6 mm	
Thickness Tolerance thickness	25 mm - 100 mm ± 2 mm	
Physical Characteristics Tolerances facing up to 600 mm 1200 mm Tolerances facing up to 3600 mm Swelling Shrinkage Water absorption Bulk density Thermal expansion coefficient Building material class Bending tensile strength Elastic modulus	± 2 mm ± 4 mm for flat panels ± 8 mm for flat panels 0.384 mm/m 0.737 mm/m 0.34 % ca. 2.4 kg/dm ³ $4.3 \times 10^{-6} \text{ } 1/^{\circ}\text{K}$ A 1 - incombustible > 7.5 N/mm ² approx. 23000 N/mm ²	DIN 18202 DIN 18202 DIN 51045 DIN 4102 / ASTM E 136
Weather Resistance Water impermeability Heat-rain-alternate test Frost resistance Frost-defrost-alternate test UV-light resistance	ok ok ok ok UV- and weatherproof colour pigments	 EN 12467 EN 12467 EN 12467
Fixing Fastening visible Fastening invisible Substructure Joint width Cast anchors	depending on geometry and application screws cast anchor system aluminium, steel, stainless steel min. 8 mm ± 5.0 mm	