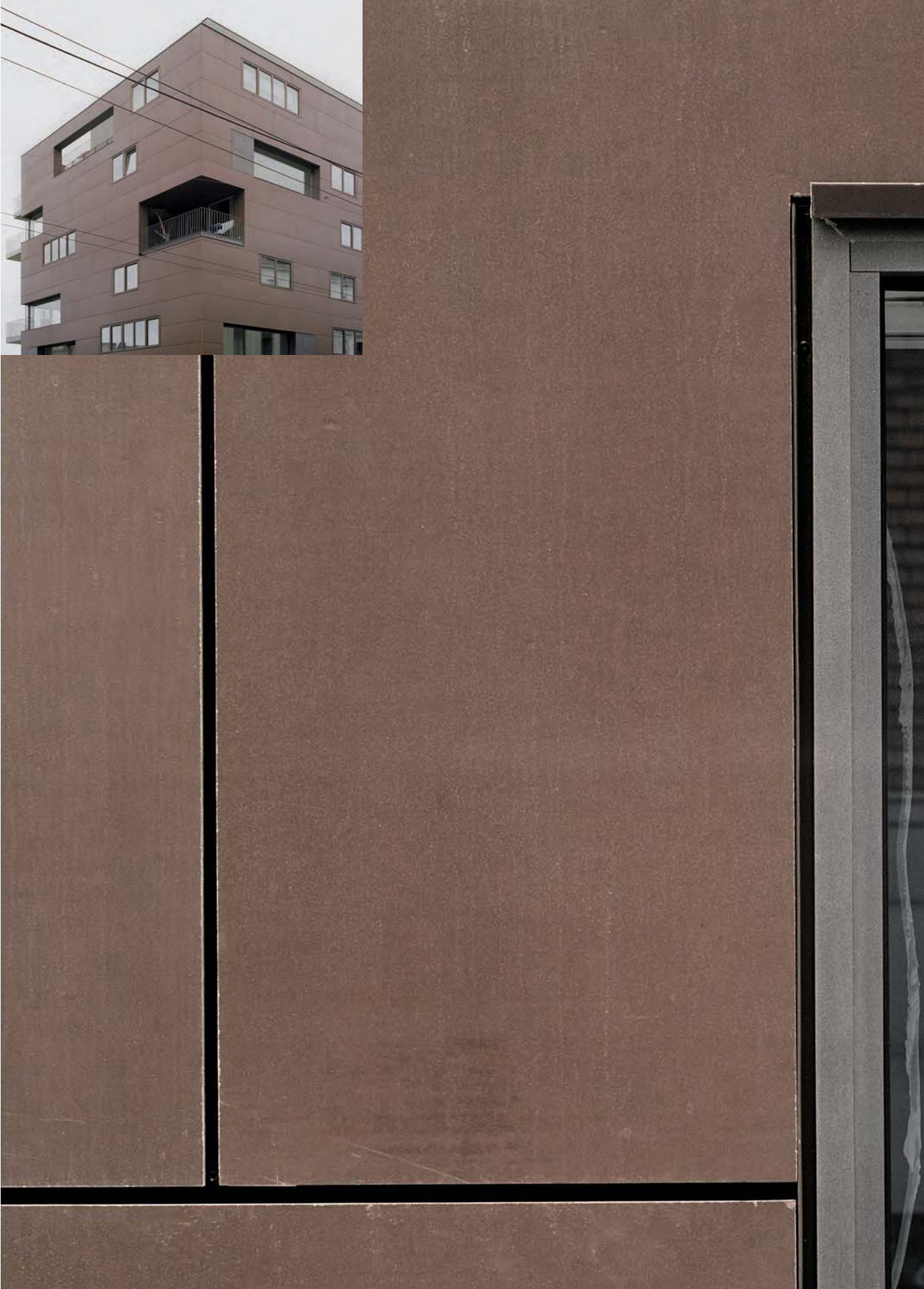


fibreC Characteristics



Technical Specifications*

	fibreC 13 mm (10 mm on request)	Standard	Standard value
Size	2500/1200 mm and 3600/1200 mm on request		
Special formats			
Dimensional variation length (3.6 m)	± 3 mm	EN 12467	± 5 mm
Dimensional variation width (1.2 m)	± 2 mm	EN 12467	± 3,6 mm
Diagonal difference up to over 1.5 m	± 3,5 mm ± 4 mm	DIN 18202	
Diagonal difference over 2.5 m 3.6 m	± 5 mm ± 6 mm	DIN 18202	
Thickness	13 mm		
Thickness tolerance	± 1 mm	EN 12467	± 1,3 mm
Edge straightness (Level 1)	± 0,05 %	EN 12467	± 0,1%
Perpendicularity (Level 1)	± 2 mm/m	EN 12467	± 2 mm/m
Physical characteristics			
Tolerances facing up to 600 1200 mm	± 2 mm ± 4 mm	DIN 18202	
Tolerances facing up to 3600 mm	± 8 mm	DIN 18202	
Swelling	0,384 mm/m	Data sheet 2004 BDZ/DBV	
Shrinkage	0,737 mm/m	Data sheet 2004 BDZ/DBV	
Water absorption	0,342 %	Data sheet 2004 BDZ/DBV	
Bulk density	2,0 - 2,42 kg/dm ³	Data sheet 2004 BDZ/DBV	
Bending tensile strength	> 18,5 N/mm ²		
Elastic modulus	approx. 10.000 N/mm ²		
Dead load / Mass per unit area	26 - 31,5 kg/m ²		
Thermal expansion coefficient	10*10 ⁻⁶ 1/°k	DIN 51045	
Building material class	A2-s3-d0	EN 13501-1 and ASTM E 136	
Temperature stability	according to humidity up to 350°		
Specific heat capacity	approx. 1.000 Joule / (kg * K)		
Conductivity	lambda: ca. 2,0 W / (m * K) U: 1/lambda ca. 0,5 m * K/W		
Weather-resistance			
Water impermeability	given	EN 12467	
Heat-Rain-Alternate test	given	EN 12467	
Frost resistance	given	EN 12467	
Frost-defrost-alternate test	given	EN 12467	
UV-Light resistance	light-, UV-colour pigments	DIN 12878	
Hot water resistance	given	EN 12467	
Wet storage resistance	given	EN 12467	
Fastening visible	Rivets		
Fastening invisible	Adhesive, Undercut Anchor		
Substructure	Aluminium, Steel		
Joint width	min. 8 mm		

Reinforcement

With alkali-resistant glassfibres in the matrix (Cem-FIL, Approval Z-3.72-1731)

Edge formation

Cut edges are unfinished and sharp-edged with a coarseness of about 1 mm on the visible face. Glassfibres may emerge at the edges

Colours		Surfaces	
Polar White	Sahara	MA	brushed / smooth surface, natural blushing effect
Ivory	Sandstone	FE	sandblasted: blasted at higher pressure, surface is rougher
Silvergrey	Terra	FL	sandblasted: blasted at lower pressure, surface is finer than FE
Anthracite	Terracotta		
Liquide Black	Venice Green		
		Assembling and Weather Protection	
		Hydrophobicity	

Colour, Design & Surface

Because concrete is a natural product, each glassfibre reinforced concrete panel is regarded as a single piece. Minor 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 fitness for purpose of the panels, are permitted. EN 12467 / Data sheet Exposed concrete 02/2004 [Publisher.:BDZ/DBV]

* Subject to the particular quotation documentation.

The information contained in this document and the technical description of product characteristics and the technical instructions for their use should not be interpreted as a contractual commitment on the part of the manufacturers. Despite careful inspection, no liability can be accepted for the correctness, completeness and topicality of the document. This is particularly true for typographical errors or subsequent changes to technical specifications.

Colours & Surfaces

10 Standard colours - 3 surfaces

fibreC offers a wide range of design options for facades. The selection of ten different colours in each of three surfaces offers a wide range of designs to meet individual expectations. Special colours (RAL - equivalent) can also be produced on request. The three surface finishes (sand blasted, finely sandblasted or brushed) open up a wide spectrum of optical and tactile effects. The combination of different surfaces in the same colour creates a particularly vivid design.

Natural colours

fibreC has a distinct advantage over other colour-treated materials - namely the consistent colouring of the whole panel. The mixture of the desired colour is created before the actual production process. The colour becomes part of the product by being added in the blending of the raw materials. Other products are in some cases only superficially treated and coloured, resulting in significant quality differences.

fibreC is coloured by ferric oxide colours and natural additions and subsequently brushed or sandblasted. The natural, authentic colours of fibreC fit well in landscapes and blend with nature and the environment.

Colour fastness and UV stability

Liquid colours for colouring cement-bonded building materials comply with the DIN EN 12878. The pigments used in the liquid colours are light-, UV- and weather-resistant and not soluble in water, alkalis or diluted acids. Factors such as natural fluctuations in raw materials used, panel and air moisture, dirt and light sources must be taken into consideration. The appearance of the panels may even become brighter due to dehydration. Changes caused by age, weather or environment specific influences are natural processes that cannot be influenced from a production point of view and are therefore not considered material defects. The technical characteristics of the panel are not affected by these.

Colour differences in production batches

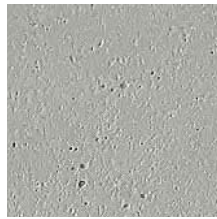
Glassfibre reinforced concrete is a natural material. The characteristics of the raw materials such as the colour of the cement can lead to variations in colour in different production batches. To avoid any discrepancies, we recommend ordering the total amount instead of part orders, and ordering spare panels with the first delivery.

Due to technical reasons printed colours may differ from the original shade.

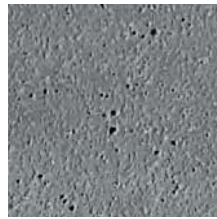
Polar White



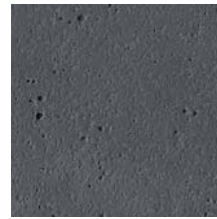
Ivory



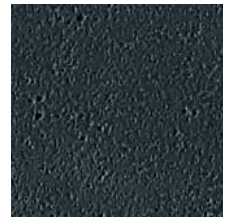
Silvergrey



Anthracite



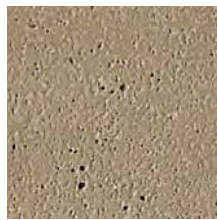
Liquide Black



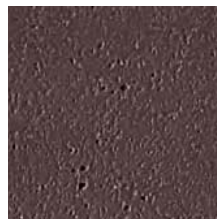
Sahara



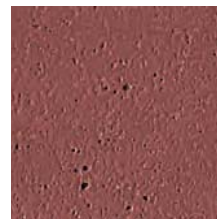
Sandstone



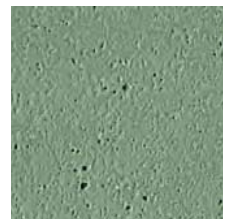
Terra



Terracotta



Venice Green



FE | Ferro

Sandblasted: blasted at higher pressure, surface is rougher



FL | Ferro Light

Sandblasted: blasted at lower pressure, surface is finer than FE



MA | Matt

Brushed: smooth surface, natural blushing effect



Special Colours on request; orders from 1.000 m²

Colour Specifier



Small air bubbles and porosity are possible: data sheet on exposed concrete 02/2004 (Publ.:BDZ/DBV)

Characteristics of fibreC

Vivid signs of a natural building material

Concrete is a natural product and Rieder sees it as such, with all its vital signs and characteristics. Living surfaces with the interplay of colour shades and light cloud effects, rather than dead and clinical surfaces are characteristic of fibreC. Even in the colouring of the concrete matrix, the focus is placed on meeting the ecological requirements of modern design. This is why the production involves natural raw materials to ensure the authenticity of all products. The demand for low porosity, homogeneous colour and strictly uniform smooth surfaces is not part of our sustainable philosophy. We consciously avoid chemical treatment and artificial materials to preserve the authenticity of the „green“ product fibreC. Colour and texture variations are a feature of our natural product.

Concrete lives

As the panels are not chemically treated or painted, small defects, dents, tension lines, efflorescences or flaws and textures may be visible (Data sheet exposed concrete 02/2004 [Publ.:BDZ/DBV]).

When cement sets, it separates calcium hydroxide. This dissolves in water and can migrate to the concrete surface. When the water evaporates, the calcium hydroxide is returned to the surface and is converted to calcium carbonate (lime). If this natural process is intensified by unfavourable conditions, it leads to deposition of calcium carbonate, which is visible as a white efflorescence. Efflorescences are a natural feature of all cement-bonded composite materials.

Part of nature - resistant & stable

fibreC is not an artificially created material that exists cut off from the natural cycle of the environment. As adaptable and extraordinary the concrete skin is, it is just as authentic. fibreC is part of a natural cycle. Influencing variables for possible colour changes are temperature variations and differences in air humidity.

Concrete is hygroscopic. It absorbs moisture and gives it off again. The large format of the panels means that moist spots may dry at different speeds. Visible colour changes may occur in an individual panel.

A typical feature of highly-compressed, high-quality concrete surfaces is so-called blue- and green discoloration, which can occur in

particular in bright colours or fresh panels. They can be attributed to a natural hardening and drying process of organic substances. Tests and experiences have shown that this blue colouring on the cladding may disappear under the influence of UV and light. This occurs based on the climatic and environmental influences. Heat, insolation and dryness can in particular accelerate the process.

Hydrophobising

As a basic protection against environmental influences, fibreC comes with a transparent hydrophobic impregnation. The opaque hydrophobising emphasises the naturalness of the material. The gloss level of the hydrophobic impregnation has a visual influence on the surface appearance. The hydrophobising is permeable and therefore breathable. If the cladding panel is applied vertically, it provides solid basic protection against weathering, dust and dirt but scratching, pressurised liquids, oil, acids, strong alkaline substances, etc. are not protected by the hydrophobising. The hydrophobising may be reapplied to achieve increased protection of the panels and to prevent extreme environmental conditions and wear and tear through intensive cleaning.

In addition to the basic protection of the hydrophobising, the glass-fibre reinforced concrete panel can be provided with a polyurethane protection. Depending on the thickness of this layer, which wears over time with the cleaning of the panels, protection against graffiti or other effects of dirt may be provided. The natural look and surface feel of glassfibre reinforced concrete is impaired by this coating.

Note:

The surface characteristics described apply to the visible side of the cladding panel. fibreC sample panels can never reflect all of the above characteristics. In large-scale cladding applications, optical phenomena occur that cannot be detected on small sample panels.

Visual changes like micro-cracks do not affect the technical characteristics of fibreC. The static functions, the long-term stability and fire resistance are not affected.

