FIBER CONCRETE TECHNOLOGY

CONTEC FIBER

Production hall and warehouse Dana Hungary Kft, Györ (Hungary); The floor is reinforced with Fibrofor High Grade 1 kg / m^3 concrete

Solutions with synthetic fiber reinforced concrete - cost-effective, ecological, innovative and technically sophisticated.

CONTEC FIBER AG

Our extensive know-how about the use of synthetic fibers dates back to the 70s of the last century when the company Arnheiter AG (Forta Seilwerke) which later became part of the Brugg Group, applied for and received a patent for “Fibrous reinforcing means for cementious composite structures and coatings”.

At the beginning these fibers were used only for optimizing the shrinkage behavior of the concrete, but over the years the technology has been further improved. The fibers available today are able to either reduce or completely replace the conventional reinforcement, always based on our static calculations according to the latest standards and regulations.

2010 the fiber know-how was transferred to Brugg Contec AG which was founded especially for the further development, production and sales of high-performancefibers.

Due to the change of ownership in 2017 and the associated relocation of the company’s headquarter to Domat/Ems (Switzerland). The name changed to Contec Fiber AG at the beginning of 2018. Our proven services and technology will continue to be offered to all partners and open-minded interested parties.

Our philosophy:
Use of high-quality synthetic fibers for general cost savings and CO_2 reduction.

Committed to quality: Contec Fiber AG is certified to the QM-System 9001, all our products are certified according to EN 14889-2. In addition, Contec Fiber AG is one of the first fiber manufacturers who offers macrofibre with a Life-Cycle-Assessment (LCA) and is certified based on ISO 14025 and EN 15804.

Bus terminal in Switzerland floors reinforced with Fibrofor High Grade, 1 kg/m³ concrete

The range of applications with synthetic fibers for the reinforcement of concrete is continually expanding.

INDUSTRIAL FLOORS AND OUTSIDE AREAS

- **Production halls and warehouses**
- **Shopping malls**
- **Car parks**
- **Outside areas**

Millions of square meters of floors have been reinforced with our synthetic high performance fibers. Low reinforcement costs and shorter construction time are two important reasons.

OUTSIDE AREAS

- **Logistic parcs**
- **Storage areas**
- **Container loading areas**

The increased abrasion resistance as well as the corrosion-free surface through the use of synthetic fibers reduce the maintenance costs and prolong the service life.

AGRICULTURE BUILDINGS

- **Cattle sheds**
- **Septic tanks**
- **Machine halls**
- **Movable silos**
- **Grain warehouse**

For the agricultural segment our synthetic fibers are especially suitable because they are resistant to aggressive fluids (excrement) and in addition there is no risk of injury for animals.

INFRASTRUCTURE

- **Streets and roundabouts**
- **Bus stops**
- **Track substructures**
- **Airports**
- **Farm tracks**

The resistance of the fibers against salt water ensures the durability of the structures, deformation and rust are not an issue.

The bench system Croma by the Hungarian company VPI Concrete Design & Manufacture reinforced with Fibrofor High Grade. The winner of the Architizer A1 Awards 2016.

The 6 mostly named reasons for our fibers

«Cheaper than steel and the installation time can be eliminated.»

«Long lifetime! Synthetic material does not corrode.»

«Simple and easy to handle.»

«Fast mixing without clumping of the fibers.»

«Free forms and thinner concrete structures are possible in precast elements.»

«No miracle solution, but with a proper static calculation in accordance with the latest standards. The figures can be recalculated by structural engineers.»

PRECAST ELEMENTS

- **Façade elements**
- **Stairs**
- **Pipes, water channels, shafts**
- **Design elements**

The production and installation of the steel reinforcement for precast elements is often expensive and time-consuming. Our synthetic fibers reduce or solve this problem. Also corrosion is no longer an issue.

AREAS IN CONTACT WITH WATER

- **Sewage plants**
- **Sewers**
- **Parts of hydropower stations**
- **Harbour facilities**

The risk of corrosion due to exposure to water or aggressive fluids is particularly high for such buildings with conventional reinforcement. Synthetic fibers solve this problem permanently.

WET SHOTCRETE

- **Tunnel linings**
- **Mines**
- **Power plant tunnels**
- **Slope protections**

Our macrofibers are characterized by a very high working capacity, lasting a 4 years creep test and a durability test (deicing salt, sulphate). Further advantages are the fast admixing without clumping and a low rebound.

SPECIAL APPLICATIONS

- **Edge beams on bridges**
- **Cycling tracks**
- **Skating rinks**

With fibers many things are feasible. Let us know your requirements and we will determine a fiber solution for you based on a static calculation according to current standards and regulations.

Tribune precast elements

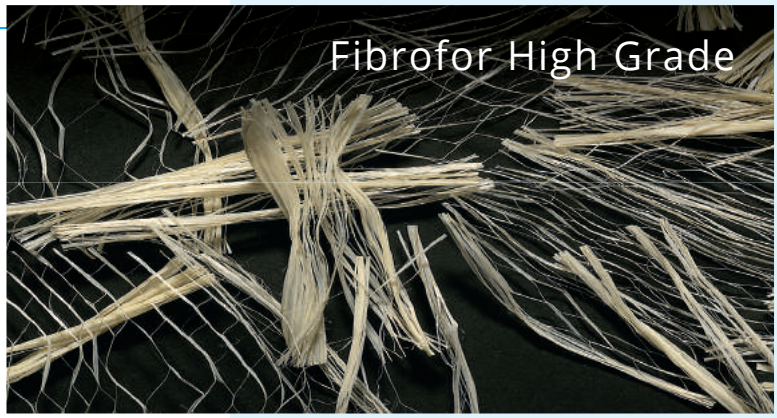
The right fiber
for every application

The loads in a high-rack warehouse are more demanding than in a parking area. In the case of tunnel linings, there are other things to consider than for facade elements.

The decisive factor for an optimal economic and technical solution is therefore always the choice of the right fiber for the respective requirement. Always based on a project specific static calculation according to the latest standards.

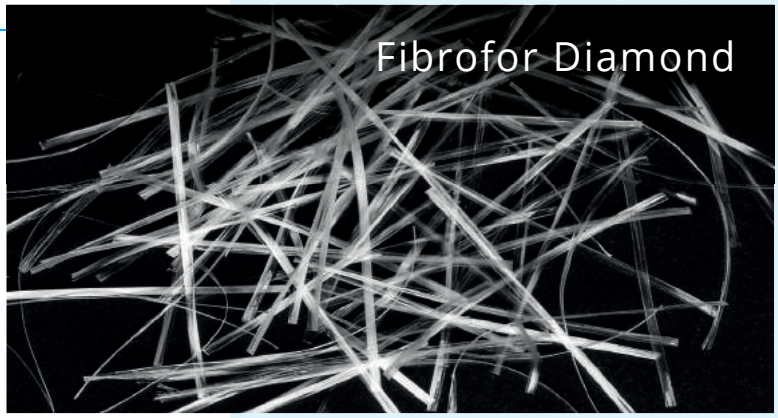
THE HIGH-PERFORMANCE FIBER FOR FLOORS AND SURFACES WITH MEDIUM LOAD

1 kg Fibrofor High Grade per m^3 concrete is able to replace 20-25 kg steel fibers or up to 40 kg steel reinforcement per m^3. This fiber is characterized by fast distribution, no clumping and can be used for all types of surface treatment.



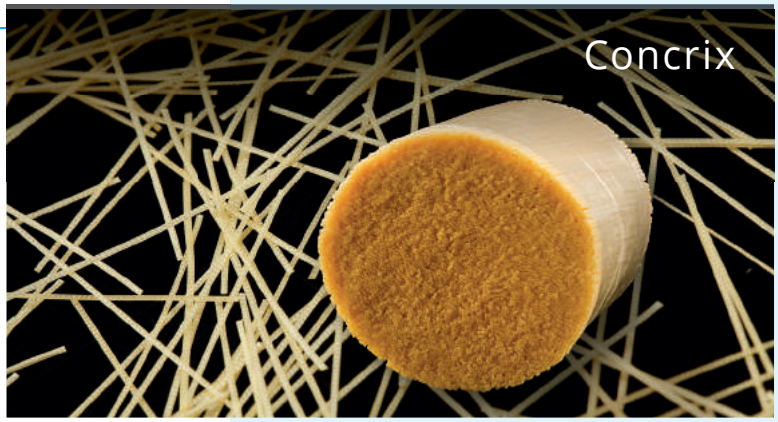
THE MONOFIBER FOR FLOORS WITH HIGHER LOADS

With a dosage of 2-3 kg/m^3 concrete, even floors and exterior surfaces with higher loads can be reinforced constructively and statically - usually without additional steel. As already for Fibrofor High Grade, special attention was paid to the mixability and smoothability.



THE BI-COMPONENT, STRUCTURED MACROFIBER WITH CREEP TESTING

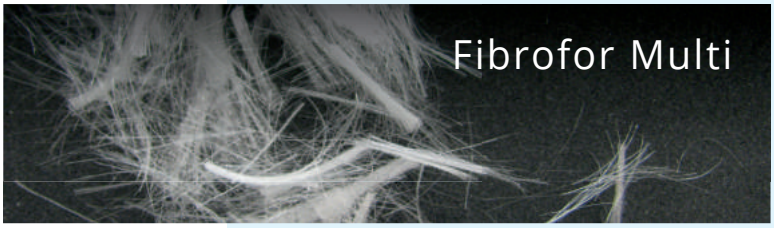
With a modulus of elasticity of more than 11 GPa, Concrix is suitable for the highest requirements in the static range. Resistance to aggressive waters and the successfully passed creeping test lasting more than 4 years makes Concrix the optimal fiber for superior precast elements and tunnel construction.



FIBERS FOR EARLY SHRINKAGE OPTIMIZATION

Fibrofor Standard is usually used for screeds, serves as a shrinkage reinforcement, reduces the shrinkage cracks in the early stages and increases the impact resistance.

Fibrofor Multi fiber is primarily used for early shrinkage reduction and increasing the fire resistance.



Fibrofor Green is a bundled natural fiber for plastic shrinkage and serves as an alternative to multifilament PP microfibres.

Forest road in Domat/Ems (Switzerland)

Static calculations
for the optimal solution

Concrix, Fibrofor Diamond and Fibrofor High Grade, mixed into the concrete matrix, are capable of replacing and reducing steel reinforcement in many different applications. Only with our static calculation and design service according to the latest norms and regulations is the guarantee for a modern and safe fiber solution. The economic advantages start in the planning phase. This is why we support and advise clients, engineers and architects in the project phase with our many years of expertise.

CONTEC FIBER AG - FAR MORE THAN JUST FIBERS

In order to meet the set climate targets, the products from Contec Fiber AG lead to a reduction in CO_2 in the reinforcement of concrete. Every kilogram of structural steel rebars or steel fibers that can be replaced by our products reduces the CO_2 balance of the concrete reinforcement by up to 60%. Contec Fiber AG has an environmental declaration (EPD) for various fibers based on ISO 14025 and EN 15804.

In addition to the CO_2 reduction, there are further economic advantages for the client and for planners when using products from Contec Fiber AG. Fiber-reinforced concrete reinforced with synthetic fibers is not only more sustainable, but also more durable. This fiber-reinforced concrete also protects statically necessary steel reinforcement from premature corrosion and thus from reduced usability and structural safety. Maintenance intervals are extended and repair measures are reduced, which further contributes to sustainability and improves the CO_2 balance during use.

In addition, Contec Fiber AG is intensifying the research and development of fibers made from natural and renewable raw materials in order to do justice to ecological construction here as well. As a first step in this direction, we can already show with our fiber product Fibrofor Green that the technical effectiveness (reduction of early shrinkage cracks in the concrete) as well as the reduced CO_2 emissions are proven.

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