

Technical Data Sheet Concretum® SUPERFIBER 40/8

High Modulus Polymeric Fibers for Crack Width Limitation

A) Description

Product:

Concretum® SUPERFIBER 40/8 are high modulus polymer fibers for mortar and concrete. They have a higher Young's Modulus as compared to concrete. For this reason, there is a long-term reduction of the width of cracks which is caused by the shrinkage.

Applications:

- In general as a replacement of polypropylene fibers.
- For long-term crack width limitation.
- To avoid early-age cracking.
- To increase fire-resistance of concretes and mortars.

Properties:

Concretum® SUPERFIBER 40/8 are shortcut fibers made of a high-performance polymer (synthetic material). The Young's Modulus of the fiber is higher as compared to concrete and its tensile strength is higher as compared to prestressing steel. The thin fibers feature a better bond to the cement matrix and therefore guarantee a homogeneous and competitive construction material.

Because of Concretum® SUPERFIBER 40/8 the cracks are more evenly distributed in the young concrete. Instead of one big crack various small mikro cracks will emerge. Concerning the durability, those small cracks are harmless. Unlike traditional synthetic fibers, Concretum® SUPERFIBER 40/8 bring about long-term crack width limitation. The fibers are only dosed with 0.6 kg/m³.

Advantages:

- Long-term crack width limitation.
- Low danger of injury.
- The fibers are heavier than water and sink in the sedimentation tank.
- Fibers that stick out can be burned off.
- Very high resistance to alkali.
- No corrosion.
- Simple surface finish.
- Low dosage: 0.6 kg/m³ concrete.

B) Product data

Chemical basis:

High-crystalline polymer (polyvinyle alcohol).

Storage:

In unopened original packaging under dry conditions.

		SUPERFIBER 40/8
Diameter		40 µm
Length		8 mm



Tensile strength	1'600 N/mm ²
Young's Modulus	42'000 N/mm ²
Breaking elongation	6.5 %
Specific density	1.3 kg/m ³
Melting point	213 °C
Bond strength to cement matrix	> 3 N/mm ²
Usual dosage	0.6 kg/m ³
Packaging	Bag of 18 kg, pallet of 21 bags
Colour	Yellowish
Application	Replacement of polypropylene fibers
Impact	Long-term crack width limitation

C) Operation instructions

Mixing:

Concretum® SUPERFIBER 40/8 is added after 1/3 of the wet mixing time.

Additional information:

The efficiency of Concretum® SUPERFIBER 40/8 essentially depends on the composition of the mortar or the concrete and the adequate curing. By the use of Concretum concretes, high modulus polymer fibers reach the optimal results.

As long as there are no other regulations in this data sheet, the general rules of good practice in concrete production have to be followed. In addition, all measures on optimal processing and curing of concrete according to standard SIA 262 have to be taken. Our consultants have great expert knowledge with the application of fiber-reinforced concretes and mortars and will be happy to be of help.

D) Data

All data published in this technical data sheet is based on internal laboratory tests of Concretum AG. Real values may vary due to external factors that cannot be affected by Concretum AG.

E) Country specific data

Data and values on products of Concretum AG may vary depending on the country of application. The corresponding local technical data sheets are valid. In the case of doubt Concretum AG provides information on valid data and values for the country in question.

F) Important safety information

The fibers do not have any adverse health effects but inhaling them can be unpleasant. We therefore recommend to wear suitable protective clothing (goggles, face mask etc). In case of eye contact please rinse with plenty of water.

For detailed safety information it is recommended to seek advice in the current material safety data sheet on www.concretum.com.

G) Proof of defects

Products of Concretum AG feature the specific properties that are completely described in this data sheet. For quality control purposes Concretum AG retains samples of each production batch for 24 months. If products of



Concretum AG are censured as defective by a customer, a verification of this statement is done solely by checking the corresponding batch sample by an internal testing procedure.

H) Legal information

This data sheet is part of a possible contract between Concretum AG and the customer. The properties of the products are completely described in section B. An application of the products has to be done according to both the instruction of Concretum AG and this data sheet.

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