



Technical Data Sheet Concretum® SUPERFIBER H 880/40

High Modulus Polymer Fibers for Sprayed Concrete and Concrete Surfacing

A) Description

Product:

Concretum® SUPERFIBER H 880/40 are high modulus polymer fibers with end hooks for sprayed concretes (tunnelling) and normal concretes in building and civil engineering. Using Concretum® SUPERFIBER H 880/40, it is possible to reach the same efficiency as using steel fibers, but with all the advantages of a synthetic fiber.

Applications:

- In general as a replacement of steel fibers.
- Sprayed concrete for tunnelling.
- Sprayed concrete in civil engineering.
- To produce concrete surfacing.
- To produce carriageway surfacing.
- To produce single layer industrial floors.
- To Produce concrete industrial floors.
- To produce cellar walls.

Properties:

Concretum® SUPERFIBER H 880/40 are extruded high modulus polymer fibers with hooked ends. The high Young's Modulus is due to stretch forming during production. The bond between fiber and concrete is outstanding thanks to the hooked ends and the surface structure. This leads to a substantial increase in residual tensile strength as well as fracture energy of the fiber concrete. The tensile strength of 4000 N/mm² which is required by SIA 162/6 is reached by using only 5 kg of Concretum® SUPERFIBER H 880/40 (Declaration per m³ concrete).

Concretum® SUPERFIBER H 880/40 meet all requirements of the Swiss norm SIA 162/2 and the European norm EN 14880-2 for synthetic fibers as for applications with structural safety analysis (System 1). The fibers do not have any adverse health effects.

Advantages:

- Low rebound with sprayed concrete.
- Automatically adjustable.
- No mechanical wear of mixing, pumping and transportation devices.
- Easy to handle because of the low weight.
- Low danger of injury.
- The fibers are heavier than water and sink in the sedimentation tank.
- Fibers that stick out can be burned off.
- High resistance to alkali.
- No corrosion.

B) Product data

Chemical basis:

Extended, extruded polyester.



Storage:
In unopened original packaging under dry conditions.

SUPERFIBER H 880/40	
Diameter	1.2 x 0.5 mm
Equivalent circular diameter	880 µm
Length	40 mm
Tensile strength	400 - 800 N/mm ²
Young's Modulus	11'300 N/mm ²
Breaking elongation	8 %
Intake of water	0.04 %
Melting point	256 °C
Dosage	5 - 10 kg/m ³
Packaging	Bag of 5 kg, pallet of 100 bags
Colour	Dark grey
Storage condition	Dry
Application	Replacement of steel fibers
Impact	Higher ductility and tensile strength
Surface	Structured
Shape / Geometry	End hooks

C) Operating instructions

Mixing:

Concretum® SUPERFIBER H 880/40 is added after 1/3 of the wet mixing time of at least 90 seconds. It is necessary to avoid the development of fiber lumps with appropriate measures.

Additional information:

The efficiency of Concretum® SUPERFIBER H 880/40 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) Disposal/recycling

A re-use (recycling) of concretes that contain a common quantity of 5-10 kg/m³ Concretum® SUPERFIBER H 880/40 is possible with the same conditions as for conventional fibers. The surface of the new concrete does not provide any opportunity for corrosive reactions and fibers that poke out of concretes or loose fillings are no risk of injury. If fiber-reinforced concrete is not intended for re-use, the material can be deposited as normal demolition waste on a landfill for inert matter according to Swiss law (Technische Verordnung über Abfälle, Anhang 1).

E) 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.



F) 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.

G) Important safety information

The fibers do not have any adverse health effects.

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

H) 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 a period of 24 months. If a customer censures products of Concretum AG as defective, a verification of this statement is done solely by checking the corresponding batch sample by an internal testing procedure.

I) 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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