BUILDING TRUST

PRODUCT DATA SHEET

SikaFiber® Force PP-48 / RAD-48s

POLYOLEFIN MACRO-SYNTHETIC FIBRES FOR SHOTCRETE AND CONCRETE

DESCRIPTION

SikaFiber® Force PP-48 / RAD-48s is a macro structural synthetic fiber that delivers optimum performance in highly corrosive environments. It is suited in pre-cast, slabs on ground among many other applications. Higher Re3 values (equivalent flexural strength ratio based on ASTM C1609 testing) are achieved in slabs on grade when using this fiber.

USES

- Fibercrete / shotcrete
- Ground supported slabs
- Precast elements
- Industrial flooring
- Sea defense
- Airport & pavements
- Slope stabilization

CHARACTERISTICS / ADVANTAGES

- Non-magnetic, rustproof and alkali proof
- Less balling effect in difficult mixes
- No site waste or disposal issues.
- Saves time and storage space in comparison to traditional mesh
- Uniquely designed and packaged allowing it to be evenly dispersed ensuring no balling or pumping problems will occur.

PRODUCT INFORMATION

Composition	Polyolefin Polymer
Packaging	5 Kg boxes- fibers wrapped in water soluble plastic pucks (Parallel Packed) in biodegradable boxes. Entire package can be thrown into the mix allowing for easy handling whilst leaving no waste on site. Environment friendly recycled packaging.
Shelf Life	NA
Storage Conditions	Store protected from the weather.
Density	0.92 g/cm³
Dimensions	Fiber length 48 mm Mean Width 1.37 mm Mean Thickness 0.34 mm
Melting Point	170 °C
Water Absorption	Nil
Tensile Strength	550+ MPa

Resistance to Alkalinity	Excellent

APPLICATION INFORMATION

Recommended Dosage

4–8 kg/m³

Beam Results with SikaFiber® Force PP 48 fibers at 4, 6 and 8 kg dosage rates. Results of flexural strength characteristics are summarized in the table below. Average flexural strength parameters from the load-deflection curves (average of three beams) by test methods ASTM C1609.

Fibre dosage rate (kg/m³)	Residual strength at 3 mm (MPa)	Flexural toughness at 3 mm (J)	Equivalent flexual strength (MPa)	Equivalent flexural ratio Re3 (%)
4	1.56	40.1	1.84	33
6	1.86	48	2.16	39
8	2.16	55.9	2.48	45

Average residual flextural strength results from load-deflection curves as per BS EN 14651-2005 standard.

Fibres dosage rate (kg/m³)	Residual flexural strength (MPa) CMOD1	Residual flexural strength (MPa) CMO4
4	1.660	1.35
6	1.740	1.60
8	1.840	1.80

(BS EN14651-2005)

RDPs typical test results

Energy absorption 450+ Joules (as per ASTM C1550, @ 6 kg/m³)

The values are based on ideal FRC mix used in control environment. The performance of the FRC depends on the concrete mix design, properties of the fiber and beam casting technique as well. Site trials are recommended to confirm the above values.

Compatibility

SikaFiber® Force PP-48 / RAD-48s macro-synthetic fibers are compatible with all concrete admixtures and performance enhancing chemicals.

Dispensing

SikaFiber® Force PP 48 is uniquely designed and packaged allowing it to be evenly dispersed through the matrix, insuring no balling or pumping problems will occur.

Can be added to the mix at any stage during batching.

Allow 5 minutes at mixing speed for fibers to disperse evenly throughout matrix.

FURTHER DOCUMENTS

Specification Clause

Fibers for concrete shall be SikaFiber® Force PP 48 polyolefin high performance macro-synthetic fiber conforming to EN 14889-2: 2006 Class II and manufactured specifically for the reinforcement of concrete. SikaFiber® Force PP 48 macro-synthetic fibres shall be mixed at the batch plant, at the recommended rate of 4–8 kg per cubic metre, and mixed for sufficient time (minimum 5 minutes) to ensure uniform distribution of the fibres throughout the concrete mix.

IMPORTANT CONSIDERATIONS

The addition of SikaFiber® Force PP 48 can cause a reduction in the concrete workability. We recommend correcting this loss not by adding more water, but by adjusting the mix to the required consistency with a suitable dosage of a Sika® ViscoCrete® or SikaPlast® admixture.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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