BarChip R50

For Environmentally Friendly Concrete

BarChip R50 is an environmentally friendly concrete fibre reinforcement from Elasto Plastic Concrete.

Made with recycled materials, BarChip R50 delivers massive carbon savings to your concrete works, without sacrificing performance.

How much carbon could you save?

Packaged in mulchable paper bags and big bags for automated dosing. Safely stacked 3 pallets high.

Benefits

- Comprehensive design and technical support
- Redistributes load - increased ductility / toughness
- Eliminates corrosion - long term durability
- Eliminates set-up of steel mesh
- 85% reduction in carbon footprint compared to steel
- Safer and lighter to handle than steel
- Reduced wear on concrete pumps and hoses
- Reduced cycle times and maintenance closure
- BarChip fibre is UV stabilised to resist solar deterioration
- Weather proof packaging on multi-stack UPVC pallets

Product Features (see SDS for more details)

Characteristic	EPC BarChip R50	Standard
Fibre Class II	For structural use in concrete, mortar and grout	EN 14889 - 2
Tensile Strength	610 MPa	JIS L 1013/ISO 2062
Young's Modulus	10 GPa	JIS L 1013/ISO 2062
Length	48 mm	
Anchorage	Continuous Embossing	
Base Material	Polypropylene	
Alkali Resistance	Excellent	
ISO 9001:2008 Certification		JKT0402914

Dosage

BarChip R50 has a regular dosage rate of 4 kg to 6 kg per cubic metre. Dosage rate should be determined based on performance requirements. Regular dose rates may reduce measured slump.

Mixing

EPC BarChip R50 is added "Bags and All" to the mixer with initial batch water. Follow with dry materials and mix at high speed for the required revolutions. Alternative batching techniques can be applied.

Undertake mix design optimisation with EPC specialists to ensure you're getting optimal output from your shotcrete mix. For more information view EPC's batching and mixing guide.

Pumping

EPC BarChip R50 can be pumped through 50 mm rubber hoses without difficulty. Precautions should be taken to ensure the fibres can pass freely through the hopper grate.

Handling and Storage

EPC BarChip R50 is packed in 3 kg mulchable paper bags (432 kg per pallet) and supplied on durable, recyclable plastic pallets with a fitted rain hood to allow storage outdoors. Bags stored individually must be protected from water damage. For automated dosing EPC BarChip R50 is also supplied in Puck Packaging.

For more information contact your nearest EPC representative.

Conformity

Conforms to ASTM C 1116 - Type III
Conforms to EN 14889 - 2

Elasto Plastic Concrete
The Synthetic Fibre Experts
WWW.ELASTOPLASTIC.COM

Close up of BarChip R50 Fibre

BarChip R50 Reduces Your Carbon Footprint.

Carbon Case Study - Permanent Sprayed Concrete Lining

Research has shown that SFRS cannot be expected to achieve a service life of 120 years in aggressive environments (Nordström 2016). To achieve this service life significant rehabilitation works need to be performed which would greatly increase the carbon footprint of the project. EPC has analysed this carbon footprint for a nominal 8.5 m wide by 6.5 m high 50 km tunnel.

Steel Fibre kg CO_2e	Rehabilitation Concrete 2 x 25% (kg CO_2e)*	Rehabilitation Steel 2 x 25% (kg CO_2e)*	Total CO_2 over 120yrs (kg CO_2e)
6,973,670	22,422,881	3,486,834	32,883,385

BarChip R50 kg CO_2e	Rehabilitation Concrete	Rehabilitation Steel	Total BarChip R50 (kg CO_2e)	**Total Carbon Saving (kg CO_2e)**
1,131,218	Not Required	Not Required	1,131,218	**31,752,167**

*Research by Nordström (2016), E., 2016. "Evaluation after 17 years with field exposures of cracked steel fibre reinforced shotcrete". Rock Engineering Research Foundation, BeFo Rapport 153 Stockholm, ISSN 1104-1773 (in Swedish)

A savings potential of **31,752,167 kg** of embodied carbon exists over 50 km of tunnelling works, simply by switching to EPC's BarChip synthetic fibre reinforcement. That's equivalent to;

10,077

Tonnes of waste recycled instead of land filled.

3,353

Homes electricity use for one year.

822,894

Tree seedlings grown for 10 years

BarChip Synthetic Reinforcing Fibre

How much carbon would you save by choosing BarChip R50 synthetic fibre reinforcement?

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BarChip Synthetic Reinforcing Fibre

ISO 9001

epc

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Disclaimer: This information has been provided as a guide to performance only, for specific and supervised conditions. The user is advised to undertake their own evaluation and use the services of professionals to determine the product suitability for any particular project or application prior to commercial use. ISO 9001:2008
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