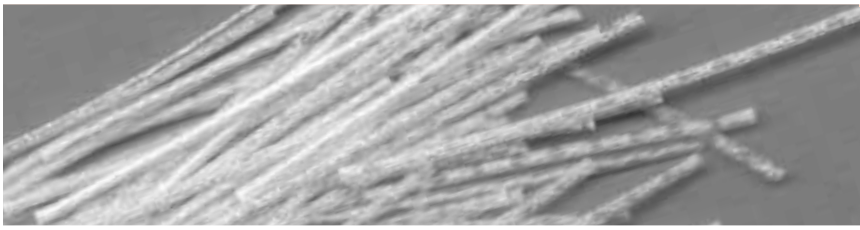
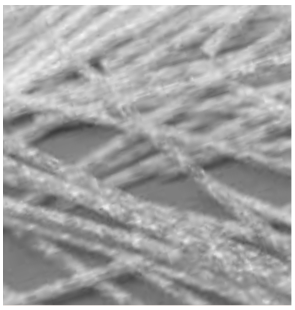
BarChip 60 Product Data Sheet (PDS)

BarChip 60

Concrete Fibre Reinforcement





BarChip 60 is a high performance structural synthetic fibre concrete reinforcement, optimised for sprayed concrete (shotcrete) with large displacements.

Work with BarChip and together we'll unlock the full potential of your shotcrete mix.

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
- 70% 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	BarChip 60	Standard
Fibre Class II	For structural use in concrete, mortar and grout	EN 14889-2
Tensile Strength	640 MPa	JIS L 1013/ISO 2062
Young's Modulus	12 GPa	JIS L 1013/ISO 2062
Length	60 mm	
Anchorage	Continuous Embossing	
Base Material	Virgin Polypropylene	
Alkali Resistance	Excellent	
ISO 9001:2015 Certification		0044943

Dosage

BarChip 60 has a regular dose 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

BarChip 60 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 BarChip specialists to ensure you're getting optimal output from your shotcrete mix. For more information view EPC's batching and mixing guide.

Pumping

BarChip 60 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

BarChip 60 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 BarChip 60 is also supplied in Puck Packaging.

For more information contact your nearest BarChip representative.

Conformity

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

BarChip Inc.
The Synthetic Fibre Experts

www.barchip.com

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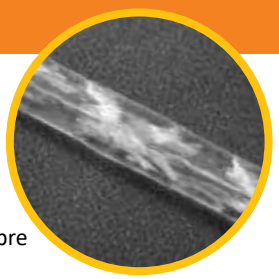
BarChip 60 Performance Testing



BarChip 60
Macro Synthetic Fibre

Flexural Performance - ASTM C 1609 / C 1609 M

Residual Strength at 0.75 mm Displacement f^{150}_{600} [MPa]

	Dosage Rate [kg/m³]				
f'c [MPa]	4	5	6	7	8
32	2.00	2.30	2.60	2.90	3.20
40	2.25	2.60	2.95	3.30	3.65
50	2.45	2.80	3.20	3.55	3.90

Residual Strength at 3.0 mm Displacement f^{150}_{150} [MPa]

	Dosage Rate [kg/m³]				
f'c [MPa]	4	5	6	7	8
32	2.00	2.35	2.70	3.10	3.45
40	2.30	2.70	3.05	3.45	3.80
50	2.55	2.95	3.35	3.75	4.15

Toughness Performance - ASTM C 1550

Energy Absorption at 5 mm Displacement [Joules]

	Dosage Rate [kg/m³]				
f'c [MPa]	4	5	6	7	8
32	54	62	70	78	86
40	64	71	78	86	93
50	69	76	84	91	98

Energy Absorption at 40 mm Displacement [Joules]

	Dosage Rate [kg/m³]				
f'c [MPa]	4	5	6	7	8
32	345	410	470	530	595
40	425	485	550	615	675
50	465	525	590	655	720

Toughness Performance Classes for Sprayed Concrete

Square Panels EFNARC / EN 14488-5 or Round Panels NB 7 / SIA 162

Toughness Classification	Energy absorption at 25 mm [Joules]	Required dosage [kg/m³]
A / E500	500	2
B / E700	700	3
C / E1000	1000	4

Round Determinate Panels ASTM C 1550 CIA / AuSS*

Toughness Classification	Energy absorption at 40 mm [Joules]	Required dosage [kg/m³]
Low	280	2.5
Moderate	360	3.5
High	450	4.5

* Concrete Institute of Australia / Australian Shotcrete Society

These results are mean values based on samples cast and tested at 28 days of age in NATA and EMI TUV SUD certified laboratories.

Note: The values presented here are a proposal based on the experience of test results worldwide. The tables give an indication of expected performance and need to be verified in-situ by appropriate testing. The performance of FRC is achieved by the composite matrix and not only by the fibres. An ideal mix and application technology has to be applied in order to optimise the results. BarChip specialists are available to provide support.

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ISO 9001

AUSTRALASIA EPD®
ENVIRONMENTAL PRODUCT DECLARATION
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