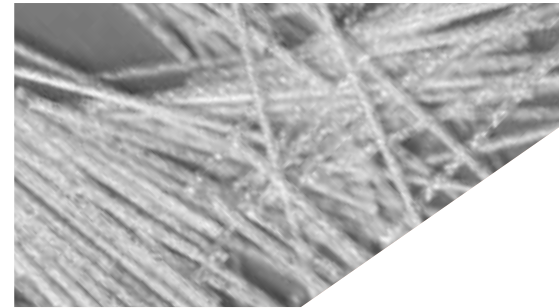
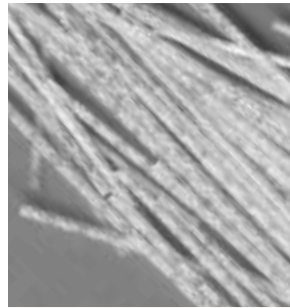


# BarChip 48

## Concrete Fibre Reinforcement

BarChip 48 is a high performance structural synthetic fibre concrete reinforcement, optimised for pavements, industrial floors and precast elements.

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



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



### Benefits

- Comprehensive design and technical support
- Redistributes load - increased ductility / toughness
- Eliminates corrosion - long term durability
- Eliminates set-up of steel mesh
- Improves precast production speeds up to 50%
- Increases abrasion and impact protection
- 70% reduction in carbon footprint compared to steel
- Safer and lighter to handle than steel
- Reduced wear on concrete pumps and hoses
- BarChip fibre is UV stabilised to resist solar deterioration
- Weather proof packaging on multi-stack HDPE pallets

### Product Features (see SDS for more details)

| Characteristic              | BarChip 48                                       | 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                      | 48 mm  |                     |
| Anchorage                   | Continuous Embossing                             |                     |
| Base Material               | Virgin Polypropylene                             |                     |
| Alkali Resistance           | Excellent  |                     |
| CE Certification            |  | 0120 - GB10/79678   |
| ISO 9001:2008 Certification |  | 0044943             |

### Dosage

BarChip 48 has a regular dosage rate of 2.5 kg to 5 kg per cubic metre. Dosage rate should be determined based on performance requirements. Regular dose rates may reduce measured slump.

### Mixing

BarChip 48 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 optimisation with BarChip specialists to ensure you're getting optimal output from your concrete mix. For more information view BarChip's batching and mixing guide.

### Pumping

BarChip 48 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 48 is packed in 2.5 kg mulchable paper bags (440 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.

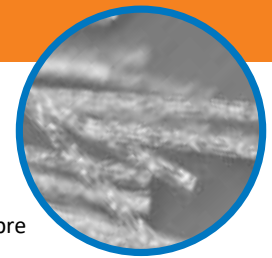
For more information contact your nearest BarChip representative.

### Conformity

Conforms to ASTM C 1116 - Type III

Conforms to EN 14889 - 2

**BarChip 48**  
Performance Testing



BarChip 48  
Concrete Fibre

**Flexural Performance - ASTM C 1609 / C 1609 M**

Residual Strength at 0.75 mm Displacement  $f_{600}^{150}$  [MPa]

| f'c [MPa] | Dosage Rate [kg/m³] |      |      |      |      |      |
|-----------|---------------------|------|------|------|------|------|
|           | 2.5                 | 3    | 3.5  | 4    | 5    | 6    |
| 25        | 1.10                | 1.35 | 1.60 | 1.85 | 2.35 | 2.85 |
| 32        | 1.30                | 1.55 | 1.80 | 2.10 | 2.60 | 3.15 |
| 40        | 1.50                | 1.80 | 2.05 | 2.35 | 2.90 | 3.50 |

Residual Strength at 3.0 mm Displacement  $f_{150}^{150}$  [MPa]

| f'c [MPa] | Dosage Rate [kg/m³] |      |      |      |      |      |
|-----------|---------------------|------|------|------|------|------|
|           | 2.5                 | 3    | 3.5  | 4    | 5    | 6    |
| 25        | 0.80                | 1.00 | 1.15 | 1.35 | 1.75 | 2.20 |
| 32        | 0.90                | 1.10 | 1.30 | 1.50 | 1.95 | 2.40 |
| 40        | 1.05                | 1.25 | 1.45 | 1.65 | 2.10 | 2.60 |

**Flexural Performance - EN 14651, RILEM**

Residual Strength at CMOD 0.5 mm  $f_{R1}$  [MPa]

| Concrete Class | Dosage Rate [kg/m³] |      |      |      |      |
|----------------|---------------------|------|------|------|------|
|                | 2.5                 | 3    | 4    | 5    | 6    |
| C25/30         | 1.30                | 1.55 | 1.90 | 2.20 | 2.60 |
| C30/37         | 1.35                | 1.55 | 1.95 | 2.30 | 2.70 |
| C35/45         | 1.40                | 1.60 | 2.05 | 2.35 | 2.80 |
| C40/50         | 1.45                | 1.65 | 2.05 | 2.45 | 2.90 |

Residual Strength at CMOD 1.5 mm  $f_{R2}$  [MPa]

| Concrete Class | Dosage Rate [kg/m³] |      |      |      |      |
|----------------|---------------------|------|------|------|------|
|                | 2.5                 | 3    | 4    | 5    | 6    |
| C25/30         | 1.35                | 1.60 | 2.05 | 2.55 | 3.15 |
| C30/37         | 1.35                | 1.60 | 2.15 | 2.80 | 3.40 |
| C35/45         | 1.40                | 1.65 | 2.20 | 3.00 | 3.50 |
| C40/50         | 1.45                | 1.75 | 2.30 | 3.05 | 3.60 |

Residual Strength at CMOD 2.5 mm  $f_{R3}$  [MPa]

| Concrete Class | Dosage Rate [kg/m³] |      |      |      |      |
|----------------|---------------------|------|------|------|------|
|                | 2.5                 | 3    | 4    | 5    | 6    |
| C25/30         | 1.45                | 1.65 | 2.10 | 2.70 | 3.55 |
| C30/37         | 1.45                | 1.65 | 2.35 | 3.15 | 3.70 |
| C35/45         | 1.50                | 1.70 | 2.40 | 3.20 | 3.80 |
| C40/50         | 1.50                | 1.80 | 2.55 | 3.30 | 3.90 |

Residual Strength at CMOD 3.5 mm  $f_{R4}$  [MPa]

| Concrete Class | Dosage Rate [kg/m³] |      |      |      |      |
|----------------|---------------------|------|------|------|------|
|                | 2.5                 | 3    | 4    | 5    | 6    |
| C25/30         | 1.30                | 1.50 | 2.05 | 2.65 | 3.20 |
| C30/37         | 1.30                | 1.55 | 2.15 | 2.80 | 3.45 |
| C35/45         | 1.35                | 1.60 | 2.25 | 2.95 | 3.50 |
| C40/50         | 1.35                | 1.70 | 2.40 | 3.05 | 3.75 |

These results are 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 orientation 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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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 © BarChip 2019. PS48\_2019\_2

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