Optimised For General Paving Works

BarChip Macro is optimised for residential paving works. It was the first structural synthetic fibre specifically designed for low strength concrete. BarChip Macro proved that structural synthetic fibres could outperform steel alternatives, paving the way for large scale use in residential and civil concrete application.

Product Features

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Material Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Resin</td>
<td>Modified Olefin</td>
</tr>
<tr>
<td>Length</td>
<td>42 mm</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>550 MPa</td>
</tr>
<tr>
<td>Surface Texture</td>
<td>Continuously Embossed</td>
</tr>
<tr>
<td>No. Fibres per kg</td>
<td>&gt; 50,000</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.90 - 0.92</td>
</tr>
<tr>
<td>Youngs Modulus</td>
<td>8.2 GPa</td>
</tr>
<tr>
<td>Melting Point</td>
<td>150°C - 165°C</td>
</tr>
<tr>
<td>Ignition Point</td>
<td>Greater than 450°C</td>
</tr>
</tbody>
</table>

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

Dosage

BarChip Macro has a regular dosage rate of 3 kg to 6 kg per cubic metre. Dosage rate should be determined based on performance requirements.

Mixing

BarChip Macro is added “Bags and All” to the mixer with initial batch water. Follow with dry materials and mix at high speed for 5 minutes. Regular dose rates may reduce measured slump by between 10 mm and 20 mm. For more details, refer to BarChip’s “Batching and Mixing” guide, available from the BarChip website.

Pumping

BarChip Macro can be safely 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 Macro is packed in 3 kg mulchable paper bags (351 kgs 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.


Results

In low strength concrete (18 -28 MPa), BarChip Macro dosed at 3 kg/m³ outperforms traditional steel reinforcement up to 20 mm deflection. A 12 mm deflection is roughly equivalent to a 5 mm crack width.

In high strength concrete (32 - 46 MPa), BarChip Macro dosed at 3 kg/m³ outperforms traditional steel reinforcement up to 8 mm deflection. An 8 mm deflection is roughly equivalent to a 3 mm crack width.