

BarChip⁴⁸

Description

EPC's BarChip48, a Structural Synthetic Fibre from Elasto Plastic Concrete's range of copolymer fibres, evolved from EPC's "Future Fibre" research and development program. The aim of this program is to develop a range of fibres that achieve the highest performance levels ever seen in structural synthetic fibre reinforcement systems. The latest advances in polymer technology, engineering design and manufacturing techniques have been incorporated into EPC's BarChip48 to deliver a fibre that is unequaled in usability, durability and service performance. BarChip48 is suitable for use in concrete applications with concrete strengths of 35 MPa or less .

Close up of EPC's BarChip48 Fibre



Product Features

Characteristic	Material Property
Base Resin	Modified Olefin
Length	48mm
Tensile Strength	640 MPa
Surface Texture	Continuously embossed
No. fibres per kg	59,500
Specific Gravity	0.90 - 0.92
Youngs Modulus	10 GPa
Melting Point	159°C - 179°C
Ignition Point	Greater than 450°C

Benefits

- Up to 50% price reduction vs traditional steel mesh
- Post crack load capacity equivalent to SL82 steel mesh at regular dosage rates
- Long term durability ~ corrosion free
- Delivered to site ready-mixed and ready-reinforced
- Eliminates cutting and placing of steel mesh, increasing efficiency and productivity
- Safer and lighter to handle than steel
- Reduced fire damage ~ anti-spalling

Dosage

EPC's BarChip48 has an effective dose range of 2.5kg to 10kg per cubic metre. Dose rates should be selected based on performance requirements. The typical dose rate for general concrete applications is 2.5kg/m³. For engineered applications, such as housing slabs and commercial flooring, dose rates typically range from 2.5kg/m³ to 5kg/m³. For assistance in specifying a dose rate for your project please contact an EPC representative.

Mixing

To achieve optimum fibre distribution during mixing it is recommended the total fibre requirement is added first "bags and all" to the mixer with the initial batch water. From this point normal loading procedures can be used. The mulchable bag will release the fibres which will be homogenously distributed throughout the mix after 5 minutes of mixing. 6kg of EPC's BarChip48 may reduce measured slump by between 10mm and 20mm dependent on mix design. For more detailed instructions please refer to EPC's Technical Sheet: "Batching and Mixing", available for download at <http://www.elastoplastic.com>.

Pumping

EPC's BarChip48 fibre can be pumped through 50mm rubber hoses without difficulty. Precaution should be taken to ensure the fibres can pass freely through the pump hopper grate.

Handling and Storage

- 2.5kg mulchable paper bag/440Kgs per pallet
- UV stabilized modified olefin fibre
- Shipped on durable plastic pallets
- Weather proof tarpee pallet covers
- Bulk bags available on request

EPC's UV stabilized BarChip48 fibre is supplied on durable recyclable plastic pallets with a fitted rain hood to allow storage outdoors with no environmental deterioration of product or packaging. Bags of EPC's BarChip48 stored individually must be protected from water damage to prevent bag deterioration.

For safety please refer to EPC's BarChip48 MSDS available for download at <http://www.elastoplastic.com>.

Re₃ Value

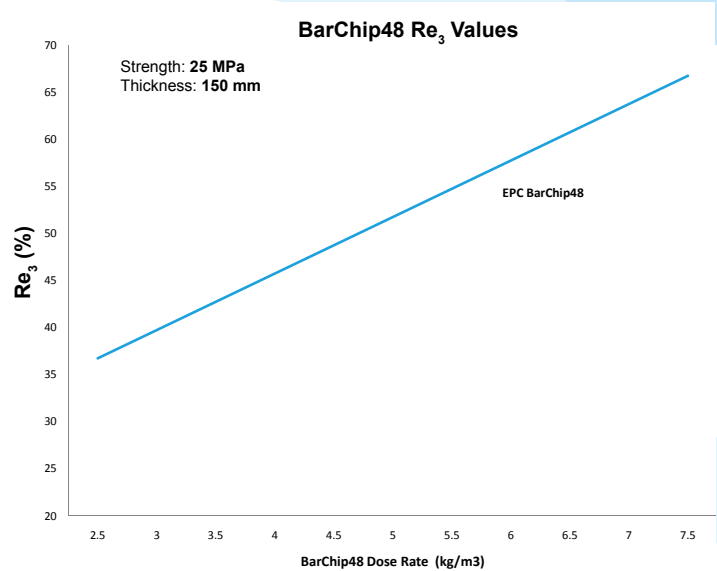
EPC has conducted extensive ASTM 1609 Beam testing of BarChip48 to determine Re₃ values.

'Concrete Society Technical Report 34' states that, "The Re₃ value, a measure of ductility, is the average load applied as the beam deflects to 3mm expressed as a ratio of the load to first crack. This measure is also commonly known as the equivalent flexural strength".

"The equivalent flexural strength ratio, Re₃, for fibre reinforced concretes, is mainly dependent on fibre type and dosage. The fibre dosage should be sufficient to give a value of Re₃ of at least 0.3 (30)". Contact EPC for more information on TR34 design standards.

Results

At 2.5kg/m³ BarChip48 has an Re₃ value of 36%, easily meeting the minimum required Re₃ percentage as outlined in Concrete Society Technical Report 34. At 5.0kg/m³ BarChip48 has an Re₃ value of 55%. For more information on Re₃ testing contact EPC.



BarChip48 is suitable for use in;

- Roadways
- Footpaths and Shared Pathways
- Precast Applications
- Hard Stands
- Industrial Floors
- Commercial Developments
- Tunnel Support
- Shotcrete Applications
- Residential Housing Slabs



Roadway



Housing Slab



Warehouse Floor



Public Railway

