Technical Data Sheet

Elasto Plastic Concrete

Durability

Long term flexural energy absorption. Summary findings from report.

Product: EPC's BarChip Structural Synthetic Fibre

This is a summarised report based on findings by Dr. Stefan Bernard at the University of Western Sydney on evaluation of long term durability performance of synthetic and steel fibre reinforced concrete specimens.

Experimental Program

Round determinate panel specimens of nominal compressive strength 40 MPa were prepared and stored for 28 days in standard laboratory curing conditions.

1. Initial specimens were tested for energy absorption at 28 days of age.
2. Long term specimens were loaded in the testing apparatus to create a nominal 1 mm crack width prior to being placed outdoors for a period of 1 year.

Results

The results expressed here are an average of three specimens for each set and represent the total energy absorption, being the sum of;

a) the energy required to achieve the initial 1mm nominal crack width, and

b) the energy required to load the pre-cracked specimen to ultimate failure.

Product	28 Days	1 Year in Field	% Difference
BarChip Synthetic Fibre	549 Joules	548 Joules	.2
Hooked End Steel Fibre	596 Joules	324 Joules	45.63

Conclusion

The ability of EPC's BarChip fibres to maintain load carrying capacity across cracks in concrete provides significant benefits over steel fibres where long term durability and structural integrity is of concern.

Round Panel Testing

Steel Fibre: 54.4% Retention of Energy Absorption

Barchip M: 99.8% Retention of Energy Absorption

BARCHIP CARBON FOOTPRINT CO_2 70% LESS THAN STEEL

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