Glass Fibres 6mm

Alkali Resistant Glass Fibre

DESCRIPTION

6mm HD fibre is an alkali resistant glass chopped strand fibre which has been specifically engineered for use in concrete and sand/cement screeds.

APPLICATIONS

6mm HD fibre is typically used at low addition levels to prevent cracking and improve the performance of concrete, flooring, renders and screed 6mm HD fibres will incorporate easily into mixes creating a tri-dimensional homogeneous network of reinforcement throughout the cement matrix. 6mm HD fibre will not protrude through the concrete surface and re-quire no additional finishing procedure. The HD fibre reinforcement is incorporated in the concrete mass and is invisible on the finished surface. 6mm HD fibre will provide secondary reinforcement in all concrete applications.

BENEFITS

- High dispersion.
- Invisible on the finished surface.
- Does not corrode.
- Prevention and control of cracking.
- Enhancement of durability.
- Reduced permeability.
- Improved abrasion resistance.
- Impact resistance.

PROPERTIES

Nature:	Alkali Resistant Glass
Appearance:	Opaque
Specific Gravity:	2.68 g/cm³
Fibre Length:	6mm
Absorption:	Nil
Chemical Resistance:	Very High
Modulus of Elasticity:	72 GPa
Tensile Strength:	1,700 MPa
Softening Point:	860°C

ADDITION RATES

Dosage rates will be dependant on mix design, process, types of aggregates and the desired effect, but typically:

1 x 450g bag per cubic metre

To meet freeze-thaw requirements:

1 x 450g bag per tonne

or 2 x 450g bags per cubic metre

STANDARDS

6mm HD fibre complies with the requirements of ASTM C1116/C, 1666/M-07 and EN 15422.

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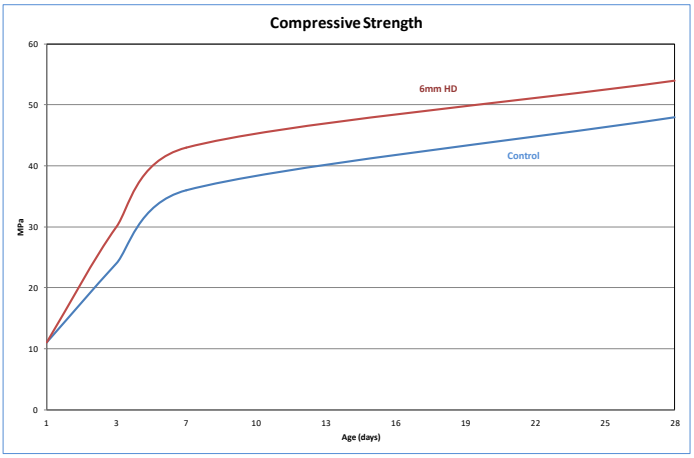
TECHNICAL

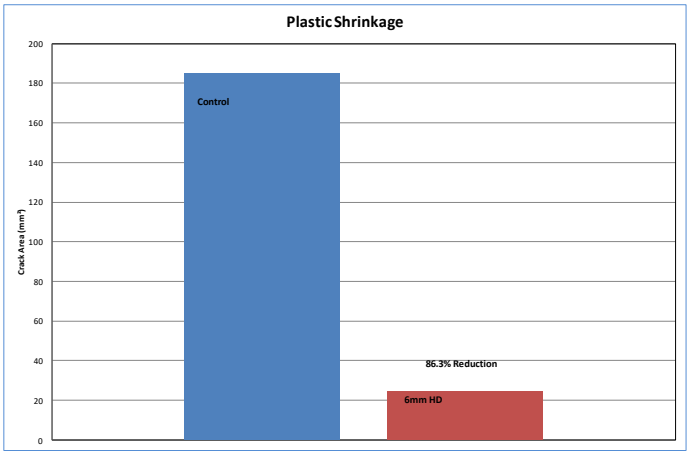
Strength: Compressive and Flexural strength testing was performed at 1, 3, 7 and 28 days. At an early age the benefits of the addition of 0.45kg/m³ of **6mm HD** fibre are most noticeable (flexural strength >90% higher within the first 2 days). This can have particular benefits in pre-casting, where concrete products may require demoulding after 1 day. Unlike synthetic fibres, the Elastic Modulus of **6mm HD** is significantly greater than that of the hardened concrete, therefore it is able to provide reinforcement not only during the plastic setting process, but also to the hardened con-crete.

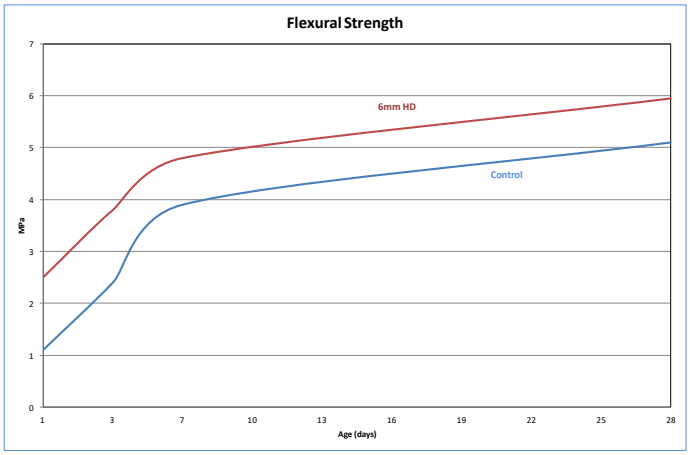
Homogeneity: 6mm HD fibres have a simi-lar specific gravity to concrete, so they do not have a tendency to either float or sink in the concrete during vibration. Tests have shown that **6mm HD** fibres also inhibit the separation of constituent materials, even under vibration, and that segregation of the coarse ag-gregates and bleeding of the water is reduced, giving a more homogeneous concrete.

Resistance to Plastic Shrinkage Cracking: The reinforcing effect of the fibres and also the reduced bleeding, re-sults in an improved surface to the concrete. A single 0.45kg bag of **6mm HD** fibres represents 99 mil-lion reinforcing filaments per bag. Therefore the unrein-forced area between filaments where cracks could form is minimised which allows greater cohesive strength of the concrete matrix and enhanced resistance to plastic shrinkage.

INFORMATION







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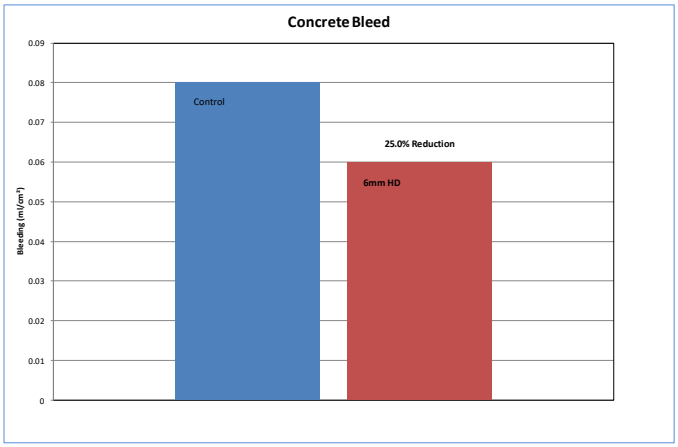

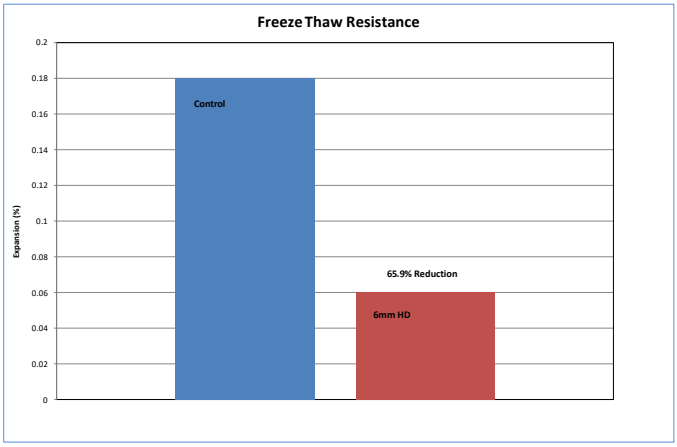

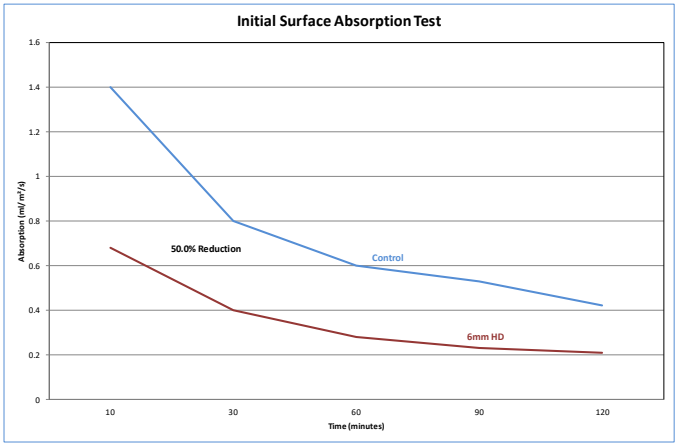

SUMMARY OF BENEFITS

vs. concrete containing no fibre

- Compressive Strength +13%
- Flexural strength +15%
- Bleeding -25%
- Plastic Shrinkage Cracking -86%
- Permeability -50%
- Freeze / Thaw Expansion -66%

Compatibility: 6mm HD fibre is compatible with all types of EN 197 cement systems and offers a wide range of benefits particularly in the production of sand/cement screed.

Storage: Store the product in a dry environment, moisture ingress will cause the water soluble bags to degrade.

Handling: Please refer to the **6mm HD** fibre Ma-terial Safety Data Sheet but in line with normal handling procedures, personal protective equipment should be worn.

Packaging: 6mm HD fibre is supplied in 450 gram water soluble bags, 30 bags per box.

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