STRUX® BT50 Synthetic Macro-Fiber

Synthetic macro-fiber ASTM C1116

Product Description

STRUX® BT50 synthetic macro fiber reinforcement is a high strength, high modulus synthetic macro reinforcement that imparts toughness, impact and fatigue properties to concrete. STRUX® BT50 is a patented engineered design providing superior post-crack control performance with a broad range of applications.

STRUX® BT50 reinforced concrete reliably achieves residual strength values in excess of 145 psi for every 4.5 lbs/yd³ (1 MPa for every 2.7 kg/m³). STRUX® BT50 fibers are 2 in. (50 mm) in length with an aspect ratio of 75 and are primarily designed to replace steel fibers, welded wire fabric, light rebar and other select secondary reinforcement in slab-on-ground flooring. STRUX® BT50 is a user friendly fiber reinforcement which is easier and safer to use, compared to other types of reinforcement.

Uses

STRUX® BT50 is engineered for ease of use, excellent dispersion and finishability in slab-on-ground flooring applications. STRUX® BT50 can be used in commercial, industrial and manufacturing floors, along with other select flat and form work applications. STRUX® BT50 is also ideal for use in precast tunnel segments and other select precast applications, pavements and soil stabilization projects, shotcrete and blast resistance. Please consult your GCP sales representative to discuss your specific application.

Addition Rates

STRUX® BT50 addition rates are dependent on the specific application and desired properties and will typically vary between 7 to 15 lbs/yd³ (4.0 to 9.0 kg/m³).

Product Advantages

- Unique packaging provides superior dispersion
- Savings from reduced labor costs and shorter construction time
- Enhances safety by eliminating handling of steel fibers, welded wire fabric or rebar
- Eliminates proper reinforcement positioning concerns
- Provides superior crack control due to the geometry and elastic modulus
- Non corroding
- Controls both plastic and drying shrinkage
- Increased crack resistance, ductility and energy absorption or toughness
- Improved impact resistance
Guidelines for Usage and Compatibility with Other Admixtures

STRUX® BT50 is fully compatible with the complete line of GCP admixtures. STRUX® BT50 action in concrete is mechanical and will not affect the cement hydration process. Slight mix design modifications including increases in fine aggregate contents and high range water reducer dosage rates may be required when incorporating STRUX® BT50 into a mix design. Each additional 3 – 4 lbs/yd³ (1.8 – 2.4 kg/m³) of STRUX® BT50 may reduce the slump of the concrete approximately 1 in. (25 mm). Up front addition of STRUX® BT50 into empty drums prior to batching provides optimal STRUX® BT50 dispersion in the concrete mixture. However, STRUX® BT50 may be added to the concrete at any point during the batching or mixing process. STRUX® BT50 should be mixed a minimum of 70 revolutions as specified in ASTM C94. Please consult with your GCP representative and refer to Technical Product Advantages Bulletin TB-1205 for further detail.

Packaging

STRUX® BT50 is available in 10 lb (4.5 kg) bags.

STRUX® BT50 Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>0.91</td>
</tr>
<tr>
<td>Absorption</td>
<td>None</td>
</tr>
<tr>
<td>Modulus of elasticity</td>
<td>1,000 ksi (7 GPa)</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>80 ksi (550 MPa)</td>
</tr>
<tr>
<td>Melting point</td>
<td>320 °F (160 °C)</td>
</tr>
<tr>
<td>Ignition point</td>
<td>1,050 °F (570 °C)</td>
</tr>
<tr>
<td>Alkali, acid &amp; salt resistance</td>
<td>High</td>
</tr>
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