**Basalt Composite Fiber Mix**

*Non-Corrosive, Chopped Fiber Concrete Reinforcement*

**Description**

**Basalt Composite Fiber Mix - (BFRP) Chopped Fiber**

Basalt Fiber Mix, is the next generation of composite fiber for use as reinforcement in cementitious materials. Basalt Fiber Mix is an extremely fine, high tenacity fiber with a similar chemical composition as fiberglass, but with better strength characteristics. Unlike most glass fibers, it's naturally resistant to alkaline, acidic and salt attack - making it an excellent candidate for applications subjected to harsher environments and shoreline structures.

Basalt Composite Fiber Mix provides a three-dimensional, isotropic reinforcement and a consolidation of the fresh concrete matrix. When introduced into any cementitious mix, the fibers provide “Built In” reinforcement as they rapidly and uniformly disperse throughout the entire mix - when mixed according to ASTM C94.

Compared with other high-end fibers like carbon and aramid, Basalt Fiber Mix features a wider working temperature range, from -452°F to 1,200°F (-269°C to >650°C); with higher oxidation resistance, higher radiation resistance, better compressive strength and a higher shear strength. All of this at a much lower cost.

Additionally, the coefficient of thermal expansion and contraction of Basalt Composite Fiber Mix, made with basalt, volcanic rock is more similar to the Concrete and its internal aggregates than that of steel or other polymer-based fibers; making Basalt Composite Fiber Mix a more homogenous reinforcing product within the concrete matrix.

When combined with the Basalt Fiber Reinforced Polymer Composite Rebar - (BFRP), you receive a 100% non-corrosive reinforcement system; delivering a 100+ year concrete lifecycle!

**Typical Applications**

- Residential & Industrial Slabs on Grade & Warehouse Flooring
- Precast Products, Prefabricated Concrete Homes
- Engineered Cementitious Composites; BFRC
- Coatings, Overlays and White Toppings
- Architectural and Lightweight Concrete
- Shotcrete and Sprayed Applications
- Stucco and Plastered Cement; Exposed Aggregate, Colored and Stamped Concrete
- Harsh Environments: Wastewater Treatment, Chemical Plants & Hydraulic Structures
- Asphalt, Micro-Surfacing & Slurry Seal; Patch and Repair

**Benefits**

- High chemical resistance - including resistance to strong concentrated acids
- High thermal resistance and stability
- Excellent mechanical strength, abrasion resistance and elasticity
- High thermal and acoustic insulation properties
- Excellent adhesion to polymer resins and rubbers
- High electrical insulating properties
- Ecologically clean and non-toxic to the end user;
- Non-corrosive; basalt fibers will never rust

*Prevent damage and costly maintenance to concrete structures and infrastructure with non-corrosive, sustainable basalt reinforced composites.*

www.basaltreinforcedcomposites.com
Approvals & Use:
Basalt Fiber Mix - (BFRP) Chopped Fibers, are manufactured in compliance with building codes and ASTM C-1116 “Standard specification for fiber reinforced concrete and shotcrete.” One of their primary engineered attributes is for the purpose of preventing and managing cracking issues.

Preventing & Managing Cracking Issues - SOG & Precast Elements
• Effectively Prevents the Cracking Mechanism from propagating (PSCR - Plastic Shrinkage Crack Reduction and Plastic Settlement Cracking) by intersecting the micro-crack and absorbing that energy. This happens 100's of millions of times throughout the entire matrices within the first 24 hours.
• By rendering the crack “Ineffective”, the fibers allow the composite behavior to carry even more load – beyond the concrete's original design strength.
• By reduces the post-crack opening and helping to transfer the load – they’re increasing the Concrete's Tensile Capacity, Ductility and Toughness (a.k.a. Residual Strength).
• Basalt Fiber Mix use helps the concrete to better absorb and dissipate the external stresses associated with impact, fatigue, freeze/thaw changes, cyclical loading, handling and transportation.

Key Values & Advantages
• Rust Proof; 100+ Year Reinforcement
• Naturally resistant to alkali and acids
• Wider working temperature range
• Higher oxidation resistance
• Higher radiation resistance
• Greater compressive strength
• Higher shear strength
• Does not conduct electricity; non-magnetic
• No interference with RF signals; UV Stable
• Excellent for harsh environments

Performance Properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Density</td>
<td>2.63 g/cm³</td>
</tr>
<tr>
<td>Filament Diameter (μm)</td>
<td>17</td>
</tr>
<tr>
<td>Moisture Content</td>
<td>&lt; 0.1%</td>
</tr>
<tr>
<td>Tensile Strength (ASTM D2343)</td>
<td>3000 MPa</td>
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<tr>
<td>Tensile Modulus (ASTM D2343)</td>
<td>86 to 90 GPa</td>
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<tr>
<td>Tenacity</td>
<td>&gt;60 cN/tex</td>
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<tr>
<td>Elongation at Break (%)</td>
<td>3.5</td>
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</tbody>
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