Fiber Reinforced Concrete (FRC) is not a new expansion and new fiber materials are also seen. Applications with concrete fibers have reduction or elimination of reinforcing weaknesses. Concrete fibers reduce shrinkage and mortars as a method for improving these weaknesses. Concrete fibers reduce shrinkage cracking and mortars as a method for improving these weaknesses. Applications with concrete fibers have the potential to be effective if designed exactly what fiber is required for a given application. Examples of common applications utilizing FRC include guidance support slabs, composite metal deck, load cells, paver joints, bridge decks, tunnel segments, and various pavements applications.

In 2016, Sika® has acquired the global Concrete Fibers business from Propex Holding, LLC. Fibermesh® a strong reinforcement, sales operations across Sika’s product portfolio, Sika® can better supply the needs of concrete customers, engineers, general contractors, owners, and architects. SikaFiber® & FIBERMESH® is a strong reinforcement, sales operations across Sika’s product portfolio, Sika® can better supply the needs of concrete customers, engineers, general contractors, owners, and architects.

Characteristics benefits & selection guides:

**Characteristics Benefits & Selection Guides**

**SikaFiber® & FIBERMESH® CHARACTERISTICS GUIDE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Brand</th>
<th>Length</th>
<th>Image</th>
<th>Standards</th>
<th>Characteristics</th>
<th>Benfit</th>
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<tbody>
<tr>
<td>BULK</td>
<td>SikaFiber® AC 100</td>
<td>0.25&quot;, 0.375&quot;, 0.5&quot;</td>
<td><img src="image1.png" alt="Image" /></td>
<td>ASTM C1116 - Type II</td>
<td>Steel</td>
<td>Integral Reinforcement</td>
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<td>BULK</td>
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<tr>
<td>BULK</td>
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<td><img src="image3.png" alt="Image" /></td>
<td>ASTM C1116 - Type II</td>
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<td>Integral Reinforcement</td>
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<td>Polypropylene</td>
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<tr>
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<td><img src="image6.png" alt="Image" /></td>
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<td>Integral Reinforcement</td>
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<tr>
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<td>Integral Reinforcement</td>
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<td><img src="image9.png" alt="Image" /></td>
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<td>Integral Reinforcement</td>
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<tr>
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<td>Polypropylene</td>
<td>Integral Reinforcement</td>
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**SikaFiber® & FIBERMESH® PERFORMANCE BENEFITS GUIDE**

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**SikaFiber® & FIBERMESH® APPLICATION GUIDE**

**SikaFiber® & FIBERMESH® APPLICATION GUIDE**

**SikaFiber® & FIBERMESH® APPLICATION GUIDE**
Transmission of external forces
28 days hardening or more
1–2 days
Reduction of cracks induced by restraint or temperature
28 days hardening or more
Improvement of fire-resistance
Micro-PP fibers
Up to 24 Hours
Early-age cracking reduction
Fresh Homogeneity improvement
Fresh
Reduce Rebound of Shotcrete
State of concrete or mortar

BEST USE OF THE DIFFERENT TYPES OF FIBERS
- Crack prevention in shotcrete or concrete (ASTM D7357-11)
- Steel fibers reinforced concrete or shotcrete (ASTM A820)
- Glass fibers reinforced concrete or shotcrete (ASTM D7508)
- Synthetic fibers reinforced concrete or shotcrete (ASTM D7626)
- Natural fibers reinforced concrete or shotcrete (ASTM D7626)

FIBER PERFORMANCE
- Fiber performance is influenced by three characteristic: tensile strength, aspect ratio (calculated as the length/diameter) and anchorage (hooked, crimp, emboss, fibrillation, etc.). One characteristic does not outweigh another; all three items have to work together for optimal performance.
- Fiber reinforced concrete is a composite material and therefore, all fibers are tested in the concrete to prove their performance.
- Steel fibers may be colored (painted together or dyed). The reduction of the fibers does not improve performance at the fiber reinforced concrete. Colored fibers can improve the tensile mixing of high aspect ratio fibers. Colored fibers are added to the concrete mix. The bundles are spread throughout the concrete. Continued mixing while breaks apart the tips to lift the individual fibers separate quickly throughout the mix.
- Fibers begin to function in a structural manner when the concrete matrix starts to crack. Just like traditional reinforcement, the cracks fail to occur for the load to switch from the concrete to the reinforcement. The fibers then provide ductility and support by bridging cracks and thus providing post crack strength to the concrete.

FIBER TYPE
- Steel - fiber reinforced concrete or shotcrete (ASTM D7357-11)
- Glass - fiber reinforced concrete or shotcrete (ASTM D7508)
- Synthetic - fiber reinforced concrete or shotcrete (ASTM D7626)
- Natural - fiber reinforced concrete or shotcrete (ASTM D7626)

Macro-PP & Steel fibers
Micro-PP fibers
SikaFiber® & FIBERMESH®
Micro & Macro-PP fibers

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