

PRODUCT DESCRIPTION:

Basalt fiber is a mineral fiber made from a one-stage process and from a single material, basalt rock. Basalt is the generic term for solidified volcanic lava.

The manufacture of basalt fiber requires heating clean crushed basalt to around 1500°C (2730°F). The molten rock is then extruded through small nozzles to produce continuous filaments of fiber.

Basalt “Chopped” fiber is a continuous filament cut to predetermined lengths to suit specific applications or use.

Basalt reinforcement is similar to carbon fiber and fiberglass technologies, having better properties than that of fiberglass, but being significantly cheaper than carbon fiber.

Here are some key benefits and superiority of basalt fiber over traditional reinforcements:

- Improved tensile strength
- Thermal stability
- Non-reactive with air or water
- Non-corrosive
- Alkali resistant
- Advanced heat and sound insulating properties
- Non-combustible
- Explosion Proof
- Non-toxic
- Chemical resistant
- High Elastic Modulus resulting in excellent specific tenacity, three times that of steel fiber



Packaging:

3 lb. Bag
 Special Order quantities available (please call)

Available Sizes:		
Product SKU:	Length:	Diameter:
FIB-BA-CHOP-12	12mm (1/2")	16 µm (±1 µm)
FIB-BA-CHOP-18	18mm (3/4")	16 µm (±1 µm)
FIB-BA-CHOP-25	25mm (1")	17 µm (±1 µm)
FIB-BA-CHOP-36	36mm (1-1/2")	17 µm (±1 µm)
FIB-BA-CHOP-50	50mm (2")	17 µm (±1 µm)

Sizing (Binder) Compatibility:	
Type of Sizing:	Silane
Sizing Content:	≥ 0.4 (% wt)
Resin Compatibility:	Cement, Concrete, Premix Technologies, Shotcrete
Moisture Content:	< 0.1 (% wt)

Dosage Rates:	
Low	1 - 1.5 lbs. per cubic yard
Medium	2 - 2.5 lbs. per cubic yard
High	3 lbs. per cubic yard

*Dosage rate requirements can vary depending on overall material selection and material mix design.

Thermal Properties

Max Application Temp	982°C (1800°F)
Sustained Operating Temp	820°C (1508°F)
Min Operating Temp	-260°C (-436°F)
Thermal Conductivity	0.031 – 0.038 W/m K
Melting Temp	1450°C (2642°F) ±150°C
Virtification Conductivity	1050°C (1922°F)
Glow Loss	1.91 %
Thermal Expansion Coefficient	8.0° ppm/ °C

Physical / Mechanical Properties

Density	2.63 - 2.75 g/cm ³
Filament Diameter	16 – 17 µm
Tensile Strength	4840 M pa
Compression	550,000 psi
Elastic Modulus	89 G pa
Linear Expansion Coefficient	5.5 x10 /K
Elongation at Break	3.15 %
Absorbion of Humidity	< 0.1 % (65%RAH)
Stability at Tension (+20°C)	100 %
Stability at Tension (+200°C)	95 %
Stability at Tension (+400°C)	82 %

Acoustical Properties

Sound Absorption Coefficient	0.9 – 0.99 %
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Electrical Properties

Specific Volume Resistance	1*10 ¹² ohm.m
Loss Angle Tangent Frequency	0.005 (1 MHz)
Relative Dielectric Permiability	2.2 (1 MHz)

Chemical Resistance Properties

% weight loss after 3 hrs boiling in:

H ₂ O	0.2 %
2n NaOH (Sodium Hydroxide)	5.0 %
2n HCl (Hydrochloric Acid)	2.2 %

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