HULK FR SRT®
BASALT GEOTEXTILE

PRODUCT DESCRIPTION

Hulk FR SRT® (Basalt) is a structurally reinforcing geotextile made from flameretardant surfacetreated basalt fiber in a +45°/-45° stitched architecture. It is designed for hightemperature, fireresistant, and structural reinforcement applications where conventional fiberglass may not provide sufficient thermal stability.

When combined with Hulk WP® or other compatible resin systems, Hulk FR SRT® (Basalt) forms a seamless composite "cast" over substrates such as foundation walls, fireresistant panels, and thermal/impactresistant assemblies.

Key advantages vs. fiberglass SRT:

- Higher thermal stability and strength retention at elevated temperature
- Noncombustible inorganic mineral reinforcement
- Excellent inplane shear performance due to ±45° architecture

KEY FEATURES & BENEFITS

- **Rot Proof / Chemically Stable**
  Inorganic mineral fibers; resistant to rot, most acids, solvents, and chemicals.
  Dimensionally stable; does not corrode.

- **NonCombustible Reinforcement**
  Basalt fibers are noncombustible and do not support flame spread. The reinforcement retains integrity at much higher temperatures than organic fibers.

- **HighTemperature Capability (Fiber Only)**
  - Continuous service (fiber): up to 500 °C (932 °F)
  - Shortterm peak (fiber): up to 700 °C (1292 °F)
  - Softening point: ~900–950 °C (1650–1740 °F)
  - Melting range: ~1050–1250 °C (1920–2280 °F)

- **Pest Deterrent**
  Dense basalt fabric strongly deters pests from chewing through assemblies.

- **Extreme Strength & Durability**

  High abrasion and vibration resistance, excellent impact resistance, and flexibility in sheardominated ±45° laminates.

- **Low Smoke / Low Fuel Contribution (Fiber)**
  Inorganic basalt fiber itself does not contribute fuel to fire. Smoke and toxicity are determined by the chosen resin.

Note: Maximum service temperature of the laminate is governed primarily by the resin system, not the fiber alone (see "Thermal Performance").

TYPICAL APPLICATIONS

- Fireresistant and hightemperature structural panels
- Exhaust and enginebay heat shields
- Rocket/engine compartment linings and thermal barriers
- Commercial and industrial oven linings (with suitable hightemp resin)
- Battery enclosures / thermal propagation barriers
- Belowgrade waterproofing reinforcement with Hulk WP®
- Antifracture reinforcement for tile, stucco, and mortar in firerated assemblies

HULK SYSTEMS

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PHYSICAL PROPERTIES (NOMINAL PRODUCTION VALUES)

PROPERTY	VALUE (TYPICAL)
Fiber Type	Basalt fiber (inorganic mineral fiber)
Color	Dark basalt (brown/greenblack)
Architecture	+45° / -45° Double Bias (stitched)
Thickness	**0.046 in** (≈ 1.15 mm)
Areal Weight	**0.182 lb/ft²** (≈ 610 g/m² total)
Fiber Density	2.65–2.80 g/cm³ (basalt fiber)

FIBER ARCHITECTURE DATA (BASED ON ~600 G/M² ±45° BASALT BIAXIAL)

ANGLE / COMPONENT	WEIGHT (LB/FT²)	NOTES
0°	N/A	No 0° fiber
+45°	0.061	Basalt fiber
-45°	0.061	Basalt fiber
Chopped Mat	0.056 (optional)	If specified
Stitching Yarn	~0.004	Polyester or FR
TOTAL	**0.182**	Nominal

Custom architectures (other weights, mat inclusion, or additional orientations) are available on request.

PACKAGING DATA (STANDARD ROLL FORMAT)

ATTRIBUTE	VALUE (TYPICAL)
Roll Width	**50 in** (1270 mm)
Roll Weight	**≈ 60 lb**
Coverage	**≈ 330 ft² per roll** (nominal)
Roll Length (approx.)	**≈ 79 ft** at 0.182 lb/ft²

- Supplied as rolls wound on 3" cores, wrapped in protective film, and palletized.
- Other widths and lengths available upon request.

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THERMAL PERFORMANCE

BASALT FIBER REINFORCEMENT (DRY FABRIC)

PROPERTY	TYPICAL VALUE
Continuous service (fiber only)	up to 500 °C (932 °F)
Shortterm peak (fiber only)	up to 700 °C (1292 °F)
Softening point	~900–950 °C (1650–1740 °F)
Melting range	~1050–1250 °C (1920–2280 °F)
Thermal conductivity (fiber, 20–200 °C)	~0.031–0.038 W/m·K (informational)

Typical Composite Temperature Limits (Informational)

For laminates using Hulk FR SRT® (Basalt) with common resins:

- **Basalt + standard epoxy / polyester / vinyl ester**
  - Continuous: **80–120 °C (176–248 °F)**
  - Shortterm excursions: **150–180 °C (302–356 °F)**
- **Basalt + hightemperature epoxy or phenolic**
  - Continuous: **180–250 °C (356–482 °F)**
  - Shortterm excursions: up to **~300 °C (572 °F)**

Values above are typical guidance ranges only. The end user must qualify their selected resin and laminate design for the intended service environment.

MECHANICAL PROPERTIES (INFORMATIONAL – FIBER)

TYPICAL BASALT FIBER PROPERTY RANGES (FOR REFERENCE; NOT LAMINATE DESIGN VALUES):

PROPERTY	TYPICAL VALUE
Tensile Strength	2400–4800 MPa
Tensile Modulus	85–95 GPa
Elongation at Break	2.5–3.1 %
Fiber Density	2.65–2.80 g/cm³

Laminate properties (Ex, Ey, Gxy, tensile/compressive strengths, inplane shear) depend on resin, fiber volume fraction, curing, and layup. Projectspecific testing is strongly recommended.

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RESIN COMPATIBILITY

Hulk FR SRT® (Basalt) is compatible with most thermoset systems including:

- Epoxy
- Vinyl ester
- Unsaturated polyester
- Phenolic
- Selected hightemperature and FR resin systems

For fireresistant / hightemperature assemblies, **hightemperature epoxy or phenolic** systems are recommended.

STORAGE & HANDLING

- Store indoors in a cool, dry, wellventilated area.
- Recommended storage temperature: **10–30 °C (50–86 °F)**
- Recommended relative humidity: **50–75 %**
- Keep rolls in original packaging until use to limit contamination and moisture uptake.
- Handle with appropriate PPE (gloves, sleeves, eye protection) to minimize skin irritation from mineral fibers.

DISCLAIMER

All data are typical values, provided for information only, and do not constitute a specification or guarantee. Actual performance depends on resin system, processing, fiber volume fraction, design, and service conditions. Users are responsible for testing and validating the suitability, safety margin, and regulatory compliance of Hulk FR SRT® (Basalt) in their specific application.

For the latest technical documents and support, visit: www.hulksystem.com

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