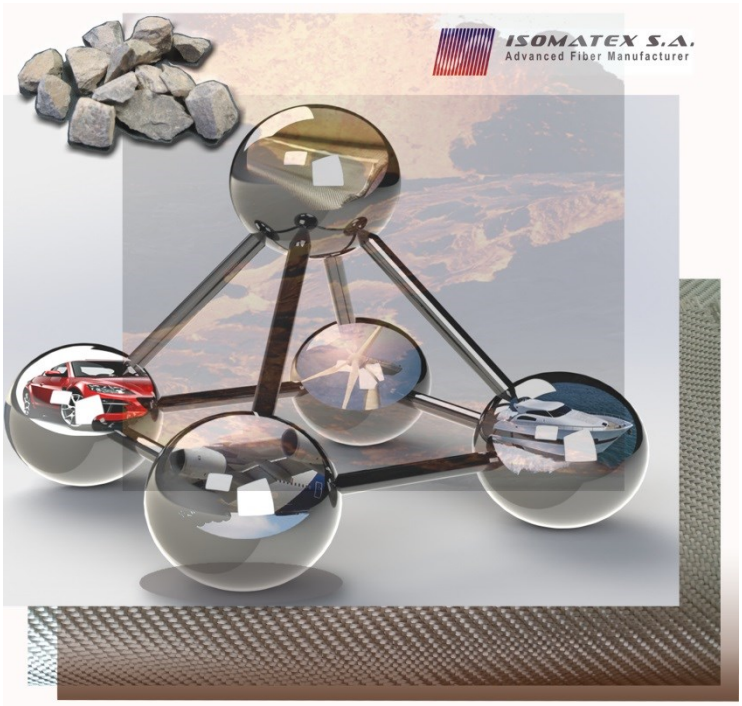

Woven fabric incorporating high mechanical properties with thermal resistance plays an important role in the impact resistance of the composites as they interact with the crack formation in the matrix and act as stress-transfer medium in any thermally variable environments. Thanks to the technical performance and functional properties (notably the high tensile strength, elongation and high thermal resistance) of **FILAVA™** constituent yarns in both (warp and weft) direction, the composite reinforced by this structures deliver an outstanding resistance to impact stress.

As a result of its especially engineered construction patterns, ISOMATEX's woven fabrics possess flawless properties allowing to achieve successfully the project demands for specific end-use applications. Our industrial textiles, woven fabrics and associated product range offer various solutions to solve and address the high strength and stability requirements combined with thermal, electrical and acoustical insulation needs. High mechanical properties of constituent yarns FILAVA™ as Tensile Strength and Young modulus and resistance to high temperature, chemical and alkali-resistance offers a unique combination of properties making FILAVA™ completely compliant to the technical requirements of such high-end applications.

Our woven fabrics can be used on many applications such as protective fireproof barriers, filtration, belting, welding protection, corrosive liquid protection and/or chemical resistant blankets, insulation blankets, heat protective covers, high temperature resistant barriers in various industrial sectors as aerospace and automotive, defense, building and construction, windmills, marine, …etc.

Furthermore, the woven fabrics made of FILAVA™ are nearly incombustible producing low amounts of smoke and toxic fumes, which make them a flawless solution in aircraft, bus and train seating. They provide a firewall barrier between the outer layer fabric and the inner foam, to prevent flame reaching the foam in the event of a fire. This will gives occupants time to escape safely the vehicle (or other enclosed space) before the accumulation of toxic, dense smoke.

As reminder, FILAVA™ is a direct roving made of enhanced volcanic rock filaments and manufactured in the melt spinning process, where the fibers are formed via a batch melt, followed by the lava which flow through bushing plates with nozzles and then vitrified by cooling.

FILAVA™ roving is a unique product thanks to a genuine and innovative treatment of the raw material, basalt, which being the major ingredient, is enriched with various mineral additives with the aim to increase and guarantee its original mechanical and chemical properties. The components used in the batch aggregation and the fabrication process are ISOMATEX's know-how and constitute its exclusive expertise.

Single-End and Multi-End assembly direct rovings consist of thousands of continuous filaments with elementary diameters from 9,0 to 11,0 µm. bonded into a single strand and wound onto cardboard sleeves. A specially developed by matrices' type sizing is applied on the fibers, which assures an excellent infusion and resin-to-reinforcement adhesion.

Storage and usage conditions. ISOMATEX recommends storage of all its articles in a cool and dry warehouse into the original packaging. For an optimal processing we recommend to use the product in ambient conditions (20 - 23°C, 60 - 65% Relative Humidity).

Articles need to be kept in the workshop at least 24 hours prior usage.

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Product description: Woven fabrics made of FILAVA™ continuous filament for technical textiles and high-performance composites (see ISOMATEX Sales department for more information)

Article reference: **WF** (Woven fabric), ex.: WF BSB3_210.150.0127.T2/2.14/14.IS65T

- Specific surface weight (gr/m²)
- Length of roll (m)
- Roll's width (cm.)
- Weaving pattern
- Number of ends per cm in Warp and Weft
- Sizing reference of constituent yarns (*)

(*) *see ISOMATEX Sales department for more information*

Properties:

Volume density of constituent yarns (according to ASTM C693): 2.600 gr/cm³
Specific surface weight: from 210 up to 1.050 gr/m²

Construction (weaving pattern or architectures): plain, twill, satin

Packaging:

Width (m): 1.270 mm.
Length (m): full package is about 400 m. roll

The rolls are individually labelled and wrapped with stretched plastic film for protection and improved handling.

Sizing: Engineered for high temperature applications and compliant to different organic (epoxy, polyester, vinyl ester, PA, PP, PEEK, BMI, …etc.) and/or ceramic matrix materials being considered especially as alternative fiber reinforcement to carbon or alumina.

Content, % weight (loss of ignition, LOI): 0,4 – 1,0 % (according to customer's request)

Moisture content, % weight: less than 0,1 %

Thermal properties (according to DIN ISO 7884):

- Melting point: 1.560 °C
- Transition temperature: 730 °C
- Softening point: 940 °C
- Annealing point: 740 °C

Thermal resistance (% of residual values (after 24 h ageing):

- - 200 °C: 100%
- 200 °C: 100%
- 850°C: 40%

Fabric reference	Surface weight, gr/m²	Weaving pattern	Thread count, ends/10 cm.		Nominal linear density of constituent yarns, TEX	Diameter of elementary (pristine) fibres, µm.	Thickness, mm. (COV)	Breaking force, nominal value N/ 2,5cm.		Fabric roll's width, cm.	Loss of ignition * (LOI), %	Sizing type, matrices compliance
			Warp	Weft				Warp	Weft			
Applied norms or methods	EN 12127		EN 1049-2		EN ISO 1889	ISO 2078	EN ISO 5084	EN ISO 1421		EN 1773	EN ISO 1887	(*)
WF BSB3_120.XXX.0127.T2/2.ISAA	120 ±5,0	Twill	120 ±1	120 ±1	52	8,00	0,15 ±0,03	1.320	1.320	127±3	0,75 … 1,0	Textile, Polyester, Vinylester, Epoxy, PA
WF BSB3_160.XXX.0127.T2/2.ISAA	160 ±5,0	Twill	155 ±1	155 ±1	54	8,00	0,18 ±0,03	1.460	1.460	127±3		
WF BSB3_0200.XXX.0127.T2/2.ISAA	200 ±5,0	Twill	140 ±1	140 ±1	68	9,00	0,20 ±0,03	2.100	2.100	127±3		
WF BSB3_0300.XXX.0127.T2/2.ISAA	300 ±10,0	Twill	150 ±1	150 ±1	100	11,00	0,30 ±0,03	2.500	2.500	127±3		
WF BSB3_0300.XXX.0127.P.ISAA	300 ±10,0	Plain	64 ±1	63 ±1	240	10,00	0,45 ±0,05	2.600	2.560	127±3		
WF BSB3_0360.XXX.0127.P.ISAA	360 ±12,0	Plain	44 ±1	45 ±1	400	11,00	0,45 ±0,05	2.970	3.050	127±3		
WF BSB3_0400.XXX.0127.T2/2.ISAA	400 ±12,0	Twill	62 ±1	62 ±1	320	10,00	0,60 ±0,05	3.470	3.470	127±3		
WF BSB3_0600.XXX.0127.T2/2.ISAA	600 ±12,0	Twill	61 ±1	61 ±1	500	11,00	0,70 ±0,05	5.180	5.180	127±3		
WF BSB3_0800.XXX.0127.T2/2.ISAA	800 ±12,0	Twill	57 ±1	57 ±1	700	11,00	0,60 ±0,06	6.800	6.800	127±3		
WF BSB3_0800.XXX.0127.P.ISAA	800 ±12,0	Plain	57 ±1	57 ±1	700	11,00	0,60 ±0,07	6.800	6.800	127±3		

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