

HITEX

S-GLASS

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**Hitex - The Strength to Innovate:
Unveiling the Future with Advanced
Composites.**

Catalog 2024



ABOUT HITEX

Welcome to Hitex Composites, your premier destination for top-quality composites and exceptional service. Our company has been providing high-quality composites to customers for many years, and we take great pride in our ability to consistently deliver excellence in both product quality and customer service.

At Hitex Composites, we specialize in the design, development, and manufacture of advanced composites for a wide range of industries, including aerospace, automotive, marine, and construction. We take advantage of our location in China to provide our customers with a competitive edge in terms of pricing, quality, and lead times. We have extensive experience in sourcing the highest quality raw materials from trusted suppliers, ensuring that we can offer our products at a competitive price without sacrificing quality.

Moreover, our state-of-the-art manufacturing facilities are equipped with the latest technology and staffed by skilled workers who are dedicated to producing the highest quality composite materials and products. This enables us to deliver products that meet or exceed the expectations of our customers.

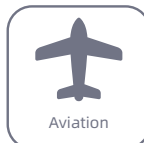
In addition to our manufacturing capabilities, we offer fast turnaround times and flexible production schedules to accommodate the needs of our customers. Whether you need

a small batch of custom products or a large-scale production run, we can deliver your order quickly and efficiently.

We believe that customer satisfaction is key to our success, and we go above and beyond to ensure that our clients receive the best possible service. Our team of experienced professionals is dedicated to providing personalized solutions tailored to your specific needs, and we work closely with you to ensure that your project is completed on time and within budget.

Whether you are looking for custom composite materials, high-quality composite products, or expert advice on composite design and engineering, Hitex Composites is your trusted partner. We are committed to providing you with the perfect service, high quality, and professionalism you deserve. Contact us today to learn more about our services and how we can help you take your project to the next level.

MAIN APPLICATION AREAS OF S-GLASS





Here is an introduction to **the characteristics and applications of s-glass products:**

Tensile Strength

S-glass fibers possess a higher tensile strength than E-glass fibers. The tensile strength of S-glass is typically about 4,500 MPa (650 ksi), which is approximately 40% higher than that of E-glass, which has a tensile strength of about 3,450 MPa (500 ksi). This makes S-glass fibers more suitable for applications where high strength is critical.

Modulus of Elasticity (Stiffness)

S-glass has a higher modulus of elasticity compared to E-glass, indicating that S-glass is stiffer. S-glass's modulus is typically around 87GPa(12.6Msi), while E-glass has a modulus of about 72 GPa (10.5 Msi). The higher modulus means that S-glass fibers are less likely to deform under load, making them ideal for high-performance applications.

Temperature Resistance

S-glass fibers retain their high strength and modulus at higher temperatures compared to E-glass. S-glass can be used at temperatures up to about 1000° F (540°C), significantly higher than E-glass, which starts to lose its mechanical properties above 600°F (315°C). This makes S-glass a better option for applications involving high thermal loads.

Impact Resistance

S-glass has better impact resistance due to its high-energy absorption capability. This means that structures made with S-glass composites can withstand more impact before failure, which is crucial for applications such as military vehicles, aerospace, and sporting goods.

Items	Virgin Fiber Tensile Strength(MPa)	Impregnated Strand Tensile Strength(MPa)	Modulus of Elasticity (GPa)	Elongation at Break (%)
HS2	4200	3000-3400	87-91	5.3
HS4	4600	3200-3600	90-94	5.3
HS6	4800	3600-4000	92-96	5.7

S-glass Yarn

S-glass yarns offer superior performance compared to E Glass fibers. These fibers provide 30-40% higher tensile strength, 16-20% higher modulus of elasticity, 10 times better fatigue resistance, and can endure temperatures up to 100-150 degrees higher than E Glass fiber. Additionally, they boast excellent impact resistance, high ageing and corrosion resistance, and quick resin wet-out properties. With features like high tensile strength, superior temperature endurance, enhanced fatigue resistance, excellent impact resistance, and quick resin wet-out properties, In aerospace, they are used in lightweight fuselages, space structures, and rotor blades. In the marine sector, they enhance boat hulls, mast components, and underwater structures. For defense applications, S-GLASS fibers provide unmatched protection in armored vehicle panels, body armor, and military vehicle components.

Code	Tex	Twist(t/m)	Breaking Strength(N)
SC8-12×1	12	55	>7.2
SC8-24×1	24	55	>14.4
SC8-24×1×2	48	55	>28.8
SC8-24×1×3	72	55	>43.2
SC8-28×1×4	112	100	>67.2
SC9-33×1×2	66	55	>39.6
SC9-66×1	66	55	>39.6

S-glass Roving

S-glass roving, a high-performance reinforcement material made of untwisted continuous glass filaments, boasts superior tensile strength and modulus compared to E-glass. Widely applied in aerospace, automotive, marine, and sports equipment industries, it enhances the strength and durability of components such as aircraft parts, automotive body panels, boat structures, and sports gear like tennis rackets. Its versatility makes S-glass roving a key player in creating advanced composite structures across various sectors.

Tex	240	400	480	600	660	735	800	1200	1980	2400
Yield	2067	1250	1034	827	750	675	606	423	250	206

S-glass Fabric

S-glass fabrics are made of direct-sized yarns which can be compatible with epoxy or vinyl ester with out heat-cleaning process. This versatile fabric finds extensive applications in industries such as aerospace, automotive, marine, and sports equipment. Specifically engineered for use in prepreg manufacturing, laminating processes, and vacuum infusion techniques, S-glass fabric enhances the structural integrity and durability of composite components. Its compatibility with various production methods makes it an ideal choice for creating advanced composite structures with superior mechanical properties and enhanced

Code	Thickness(mm)	Count(ends/cm)		Breaking Strength(N/25mm)		Weight(g/m ²)	Compatible Resin	Weaving Pattern
		Warp	Weft	Warp	Weft			
SE60A-100a	0.06	12	12	500	500	60	Epoxy	Plain
SW80B-90b	0.08	16	16	500	500	80	Vinyl	Twill
SW80B-90a	0.08	16	16	500	500	80	Epoxy	Twill
SW100A-100a	0.10	20	20	550	550	100	Epoxy	Plain
SW110C-100a	0.11	22	22	600	600	110	Epoxy	4HS
SW140B-90a	0.14	14	14	900	900	140	Epoxy	Twill
SW160C-100a	0.16	18	12	2000	400	160	Epoxy	4HS
SW180D-100a	0.18	18	18	1200	1200	180	Epoxy	5HS
SW210B-100a	0.21	16	12	1600	1350	200	Epoxy	Twill
SW210A-92a	0.21	16	12	1600	1350	200	Epoxy	Plain
SW220B-90a	0.22	18	14	1900	1600	240	Epoxy	Twill
SW220B-90b	0.21	18	14	1900	1600	240	Vinyl	Twill
SW220C-90a	0.22	18	14	2000	1600	240	Epoxy	4HS
SW220D-90a	0.22	18	14	2000	1600	240	Epoxy	5HS
SW220C-100a	0.21	18	14	1900	1600	240	Vinyl	4HS
SW280F-100a	0.25	20	18	2000	1700	280	Epoxy	8HS
SW600B-105a	0.60	14	11	3500	3000	600	Epoxy	Twill

S-glass Woven Roving

S-glass fiber woven roving is a premium composite fabric known for its elevated mechanical properties when compared to standard E-glass woven roving. With its higher tensile strength and stiffness, S-glass provides an enhanced structural performance, making it a go-to choice for industries where superior strength and reduced weight are critical. Unlike the more commonly utilized E-glass, which is sufficient for general-purpose applications, S-glass is sought after for advanced applications in aerospace, defense, marine, and high-performance sporting equipment where the demands on material durability and resistance to stress are greater. The use of S-glass woven roving facilitates the creation of components that not only bear heavier loads but also withstand harsher conditions, solidifying its role in the production of high-end, resilient composite structures.

Code	Warp and Weft	Count(ends/cm)		Weight(g/m ²)	Breaking Strength(N/25mm)
SWR400	660	W3.0	F3.0	400	W2700 F2700
SWR800	1980	W2.0	F2.0	810	W4950 F4950

Multi-Axial S-glass Fiber Fabric

These fabrics are made from S-glass, which is a high-strength and high-modulus glass fiber. It is superior to E-glass, which is the most common glass fiber, in terms of tensile strength, modulus, and temperature resistance. Multi-Axial S-glass fabrics have multiple layers of fibers oriented at different angles, which are stitched or bonded together. This multi-directional reinforcement provides enhanced strength and stiffness in various directions, making it ideal for applications requiring improved impact resistance and durability.

Usages:

- High-performance sporting goods (surfboards, hockey sticks, racing shells)
- Military and defense applications (ballistic armor, helmets)
- Aerospace components (aircraft structural parts, panels)
- Marine applications (boat hulls, masts where high strength and impact resistance are critical)

Unidirectional Fabrics

Code	Warp Tex	Weft Tex	Count(ends/cm)		Weight(g/m ²)	Thickness(mm)
SUDL414	660	Heat Set Yarn	W6.1	F1.6	414	0.34
SUDL173	400	Heat Set Yarn	W3.9	F1.6	173	0.14

Stitched Fabrics

Code	0°	90°	-45°	45°	Weight(g/m ²)
SLT350	175	175	-	-	350
SBX600	-	-	300	300	600

Satin Weave Fiberglass Fabrics

Satin weave fiberglass fabrics are used in aerospace for their combination of high strength and smooth finishing. The unique weave pattern allows the fabric to conform to complex shapes, making it ideal for creating precise aircraft parts. This fabric provides a superior surface finishing, which is essential for aerodynamic efficiency and reduces preparation time for painting or coatings. Its excellent strength-to-weight ratio contributes to the structural integrity of the aircraft while maintaining a lightweight design crucial for high-performance aviation applications.

Code	Weaving Yarn	Count(ends/cm)	Weaving Patten	Strength (N/25mm)	Weight(g/m ²)	Thickness (mm)
EW301F(7781)	EC6-68×1	22×21.5	8HS	1500×1500	295±10	0.275±0.025
EW105C(220)	EC7-22.5×1	24×24	4HS	500×450	105±5	0.090±0.009
EW150C1(120)	EC5-11×1×2	24×24	4HS	500×450	105±5	0.090±0.009
SW301F(6781)	SC9-68×1	22×21.5	8HS	1900×1800	295±10	0.275±0.025
S6W250F(6581HT)	S6C9-34×1×2	22×21.5	8HS	2500×2400	295±10	0.275±0.025

S-glass Chopped Strand

S-glass chopped strand, comprised of short S-glass fibers known for their exceptional tensile strength, is a high-performance reinforcement material. It is instrumental in reinforcing composite structures, such as aircraft components, automotive parts, and construction materials, contributing to enhanced durability and strength. Its versatility and high-performance features make S-glass chopped strand a crucial element in various applications requiring superior mechanical properties.

Resin Matrix	Filament Diameter(μm)	Chopped Length(mm)	Weight(kg/bag)
EP/UP/PE/VE/PF/PU/PP/PC/PA/ABS	8, 9	3, 6, 9, 12	20

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