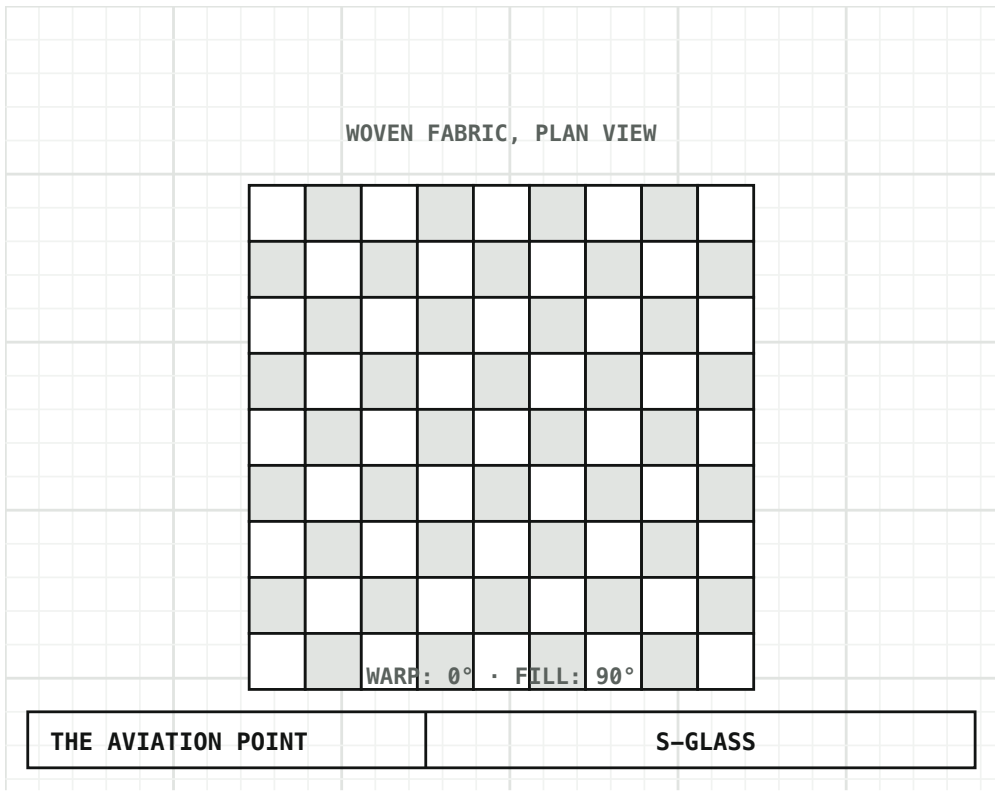
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S-glass — high strength glass fiber

S-glass is the structural grade of fiberglass: higher strength and stiffness than E-glass, at a higher price.



Schematic

Designation

Item	Value
Designation	S-glass
Class	Composites
Type	high strength glass fiber

Glass types compared

Item	E-glass	S-glass / S2-glass	Source
Role	Electrical grade, low cost	Structural fiberglass of higher strength	FAA-H-8083-31B, p. 7-5
Composition	Borosilicate	Magnesia-alumina-silicate	FAA-H-8083-31B, p. 7-5
Impregnated-strand tensile strength	Reference	15% higher than conventional glass fiber	AGY, S-2 Glass page
Elastic modulus	Reference	25% higher than conventional glass fiber	AGY, S-2 Glass page
Stability at temperature	—	Strength and stability at elevated temperatures up to 760 °C (1,400 °F), fiber level	AGY, S-2 Glass page
Colour and forms	White; dry fabric or prepreg	White; dry fabric or prepreg	FAA-H-8083-31B, p. 7-5

The AGY percentages compare S2 Glass with conventional glass fiber and are manufacturer claims on the fiber, not laminate values. AGY does not state the test method on its product page.

One style pair: 6781 (S-type yarn) against 7781 (E-type yarn)

Property	6781	7781
Warp / fill yarn	SCG 75 1/0 SC9 68	ECDE 75 1/0
Weave	8 harness satin	8 harness satin
Weight, oz/yd² (g/m²)	8.92 (302)	8.81 (299)
Dry thickness	9.50 mil (0.24 mm)	8.6 mil (0.22 mm)
Count, warp × fill per in	57 × 54	57 × 54
Breaking strength warp / fill, lbf/in	550 / 450	570 / 450

Hexcel HexForce data sheets for 6781 and 7781. The dry fabric breaking strengths printed here do not show an S-glass advantage; the strength benefit AGY describes is in the fiber and the impregnated laminate, so a laminate comparison needs resin-specific data.

Notes

- **Fiber claims, not laminate allowables.** AGY's percentages are for the fiber against conventional glass.
- **Not a substitution.** The cloth and finish come from the SRM.
- **No quartz here.** Quartz fabric is not covered because no publishable data sheet could be verified.

SOURCES · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7 · AGY, S-2 Glass fiber product page · Hexcel HexForce Style 7781 Fiber Glass Fabric Product Data · Hexcel HexForce Style 6781 Fiber Glass Fabric Product Data

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/materials/s-glass/

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.