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S-Glass and S2-Glass

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

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

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

Key points

- **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

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Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.