

Pultruded GFRP for PV Module Frames

The anodised-aluminium module frame carries the grounding path, galvanic corrosion at the clamp, scrap-metal theft value and a thermal expansion far from the glass laminate. F1 Composite pultruded GFRP frames are intrinsically non-conductive, immune to galvanic and salt corrosion, have no resale theft value, and expand closer to glass — while holding the edge stiffness the laminate needs under snow and wind load.



PV modules with pultruded GFRP frame in place of anodised aluminium



Utility-scale array — dielectric frame cuts PID path & galvanic

CORE PERFORMANCE REQUIREMENTS

Dielectric Frame

Non-conductive; no frame grounding; cuts PID leakage path

No Galvanic Corrosion

No galvanic cell at frame / clamp; salt & humid service

No Scrap-Metal Theft

No aluminium resale value; deters field frame theft

Thermal Match to Glass

CTE closer to glass laminate than aluminium

Edge Load Strength

Stiff laminate edge for snow & wind load

UV & 25-yr Outdoor

UV-stable veil; 25+ yr; no anodise or repaint

STANDARDS & CODES

EN 13706 Structural pultruded profiles (E23)

ASTM D3917 Pultruded profile dimensional tolerance

ISO 14125 Composite flexural properties

ASTM D149 Dielectric strength

ASTM D570 Water absorption

IEC 61730 PV module safety — frame insulation context

Nil

Frame Grounding / Bonding

0

Galvanic · Salt Corrosion

25+ yr

Outdoor Service Life

Insulator

Dielectric Module Frame

RELATED F1 PRODUCTS · SPEC EXCERPT

Product	Form / Size	Key Spec	Standard
Frame Section	Custom U / box	CTE near glass; dielectric	EN 13706
Corner Spline	Keyed / bonded	Sealed mitre joint	EN 13706
Clamp Profile	Mid / end seat	Non-conductive clamp seat	EN 13706
Custom Pultrusion	To drawing	Bespoke section; tooling	EN 13706