

ClearFRP™ Transparent GFRP Film


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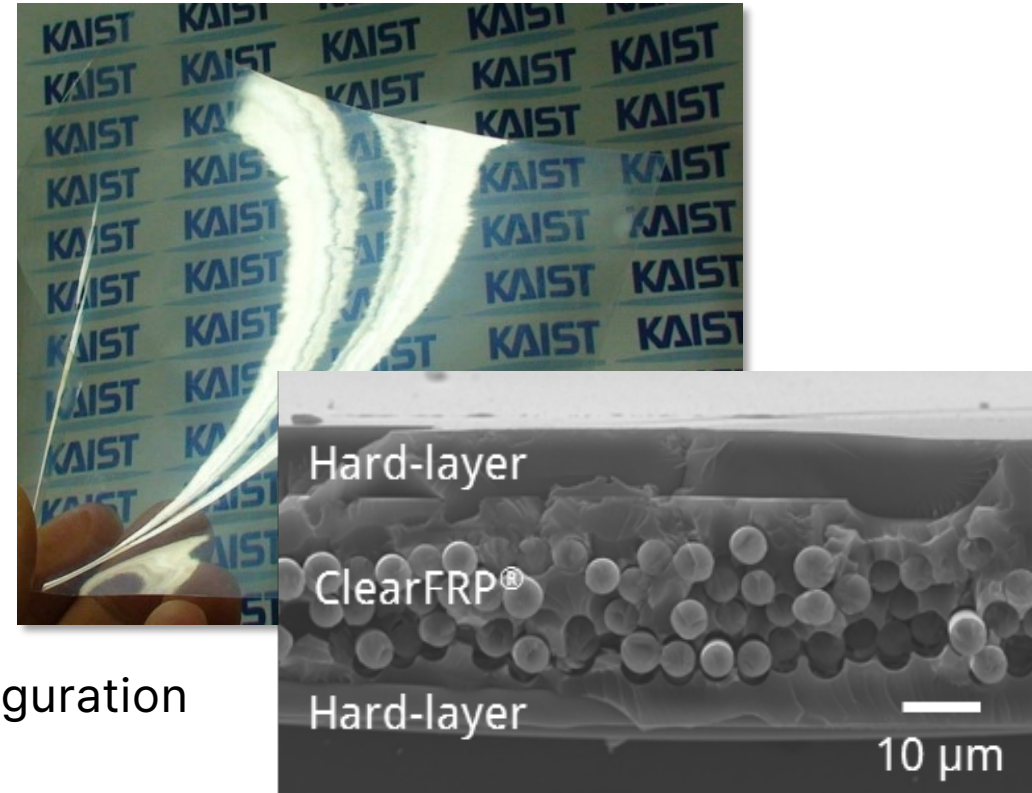
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ClearFRP™ Transparent FRP Film

Siloxane resin impregnated transparent glass-fabric reinforced plastic (GFRP) films with high strength and modulus, and low thermal expansion coefficient. Optical transparency is obtained by precise refractive index matching between glass-fabric and cured siloxane matrix.

■ Features

- Optically transparent film
- High strength and elastic modulus
- Low thermal expansion coefficient
- High impact resistance to protect glass
- Feasibility of high thermal resistance
- Feasibility of high elongation or stretchability
- All performances depend on siloxane matrix/glass-fabric configuration



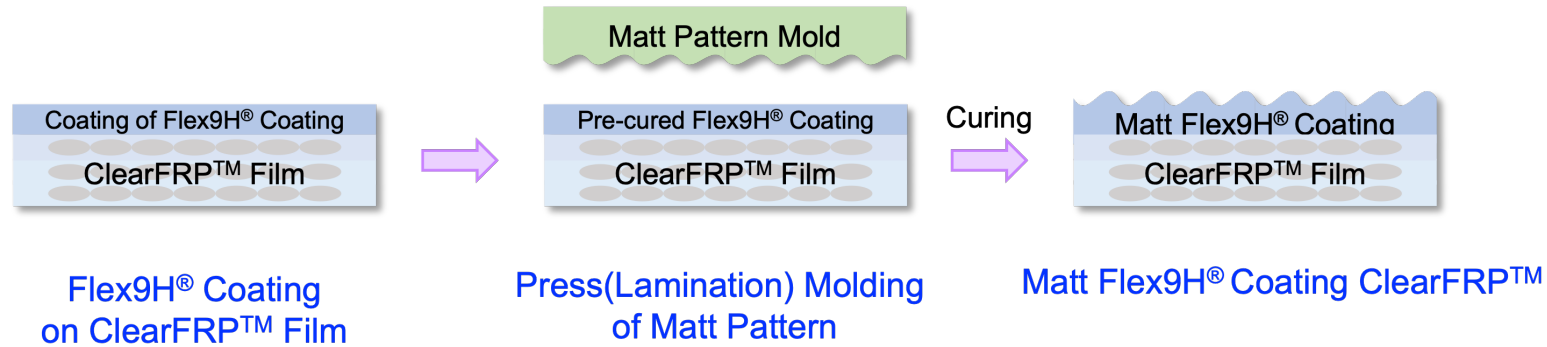
Hard Coating ClearFRP™ Film

High hardness and scratch resistance on high modulus ClearFRP™ film

Application: Protective film on UTG etc.

Film	Coating Thickness	Hardness (750gf)	Optical Property			Initial WCA	Steel-wool Scratch Resistance (2x2cm ² , 1kgf)	Elongation
			T	Haze	Y			
ClearFRP (30μm)	5μm	4H	91.1%	2.5	2.2	>115°	>5,000 cycles	> 4%
	10μm	6H	91.0%	2.5	2.5	>115°	>5,000 cycles	> 3%
ClearFRP (50μm)	5μm	5H	91.1%	3.8	2.5	>115°	>5,000 cycles	> 4%
	10μm	8H	91.0%	3.8	2.8	>115°	>5,000 cycles	> 2%

AG (Anti-Glare) Hard Coating ClearFRP™ Film



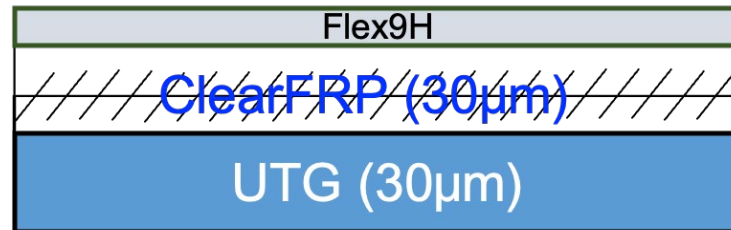
Film Thickness	Matt Coating Thickness	Hardness (1kgf)	Optical Property			Initial WCA	Steel-wool Scratch Resistance (2x2cm ² , 1kgf)	Elongation
			T	Gloss	Haze			
30μm	5μm	6H	< 89%	< 60	< 10	>115°	> 5,000 cycles	> 4%
	20μm	8H	< 89%	< 60	< 10	>115°	> 5,000 cycles	> 2%

* Use of AG etched glass mold (Gloss: 55)

Protective ClearFRP™ Film on UTG

- High modulus protective film on UTG
- Excellent adhesion with UTG
- No additional adhesive (OCA) to bond to UTG
- No shatter of broken glass pieces
- High optical transparency
- AF function and high scratch resistance with hard coating

Hard Coating ClearFRP™ UTG



8H Hardness

2.5R In-folding[#]

20cm Pen-drop*

Foldable ClearFRP™ Film on UTG

UTG bonded with composite structured protective film in which transparent glass-fabric reinforced plastic (ClearFRP™) film in the non-folding (reinforced) part and siloxane resin coating film in the folding (flexible) part. High modulus in the reinforced non-folding part makes high strength and impact resistance but low modulus in the flexible folding part represents better foldability.

