



SOLARSHIELD

VULCAN POLYCARBONATE SHEETS

IR
Blocks 70% IR

Exceptional Heat Reduction

Same Visible light transmission as glass
Reflect infrared induced heat by 70%
Reduce temperatures by max. 15 °C / 59 °F.

UV
Blocks 99% UVA/UVB

99% UV Block

Long Lasting Sheet Protection
Increased Life Expectancy (15yrs ↑)
Retain Light Transmission Rate

40% or 25%

High Clarity

High Transparency (Green: 40%)
High Gloss (Grey: 25%)
Low Haze

EE
Energy Efficient

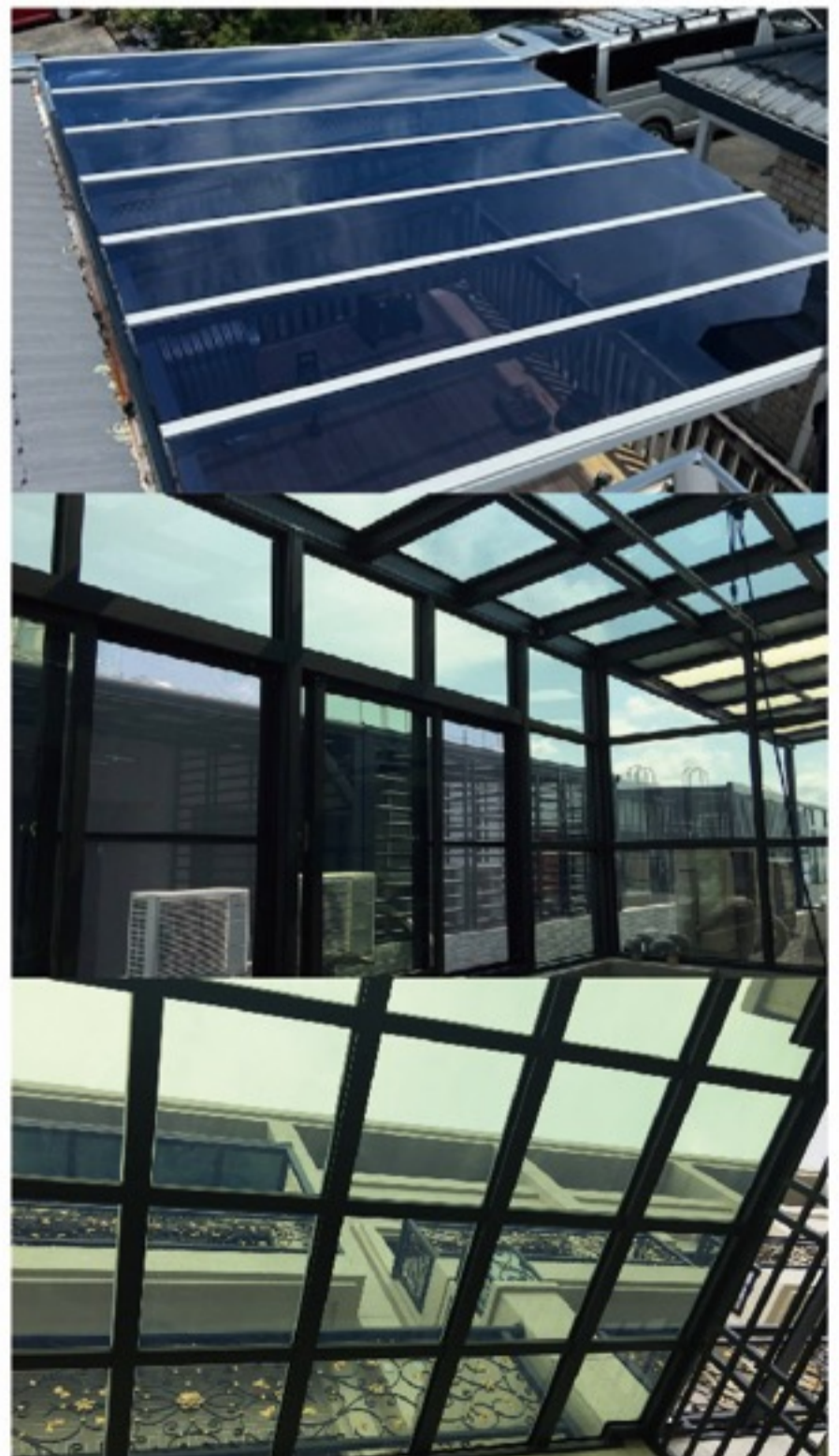
Energy Efficient

Cost Effective Upgrade from Clear Glazing
Decreased Energy Consumption
Reduced Material and Labor Cost
Better Insulation Properties

Impact Resistant

Lightweight & Safe

Lightweight : ½ Weight of Glass
Ultra High Impact Resistance :
x 250 > Glass,
x 10 > FRP / Acrylic



VUCLAN SOLARSHIELD

– Transparent IR Protection



Weathering Resistance

Solarshield is protected by double layered, co-extruded Clariant CESA light and UV Stabilizers.

Solarshield will be able to last for 15 years or more due to excellent UV protection and lower surface temperatures.

Clear but Cool

Solarshield keeps visible light transmission rates same as clear glass but reflect infrared induced heat by 70% and reduce temperatures by max.15 °C / 59 °F.

Exceptional Impact Resistance

250 times the impact strength over glass and 10 times over FRP and Acrylic.

Polycarbonate is the safest of all glazing materials in that it will not shatter and cause damage to anything underneath and is the item of choice.

Cost Saving

IR Reflection (Lowered Heat) – Less air conditioning required and lower power consumption.

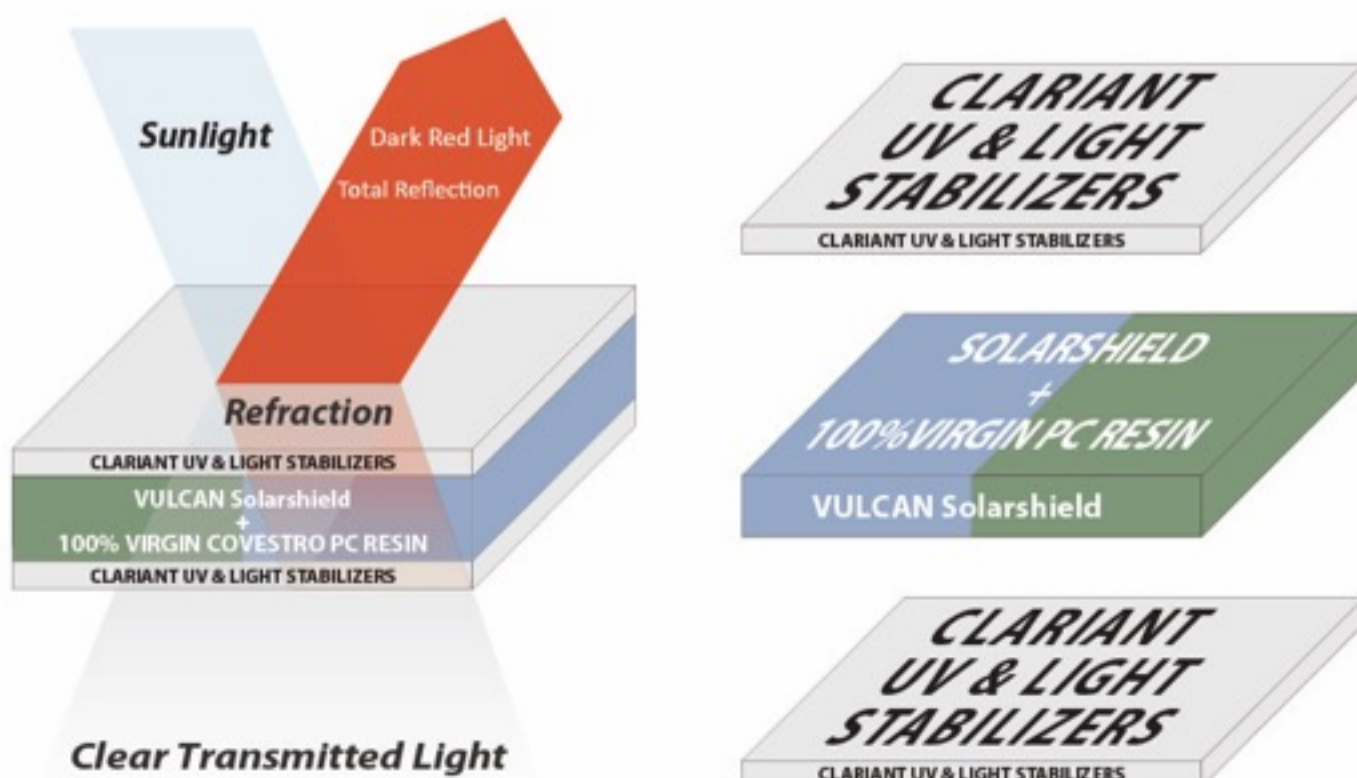
Light Weight – 1/2 the weight of glass means lighter support structures, easier transportation, less labor time and costs.

Best Bang for the Buck

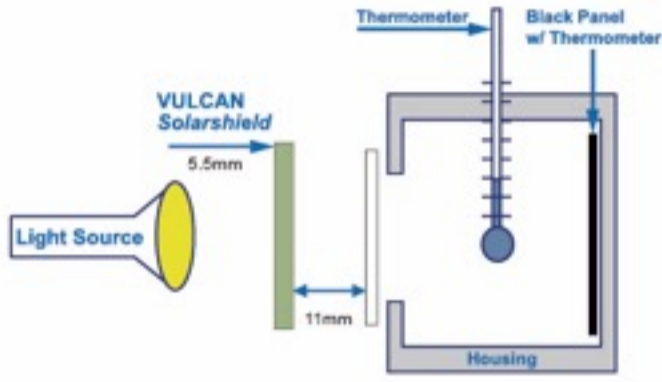
Vulcan Solarshield provides the same clarity and heat reduction properties as Low-E (Emissivity) glass, but costs 1/2 less.

Solar Heat Gain Coefficient

SHGC 0.26 - 26% of the solar radiation will pass through and 74% excluded. Excellent Passive Solar Cooling Properties.

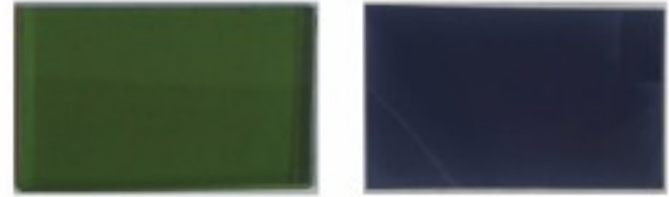


Measurement apparatus



- Practically relevant set-up chosen
- No standardized (ISO) procedure available

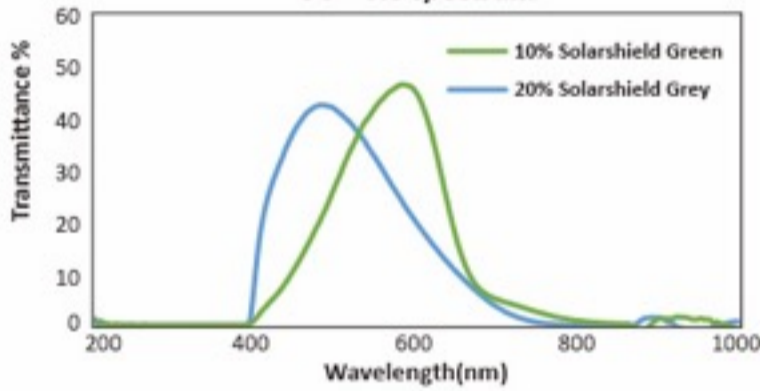
VULCAN Solarshield Solid Flat(5mm)



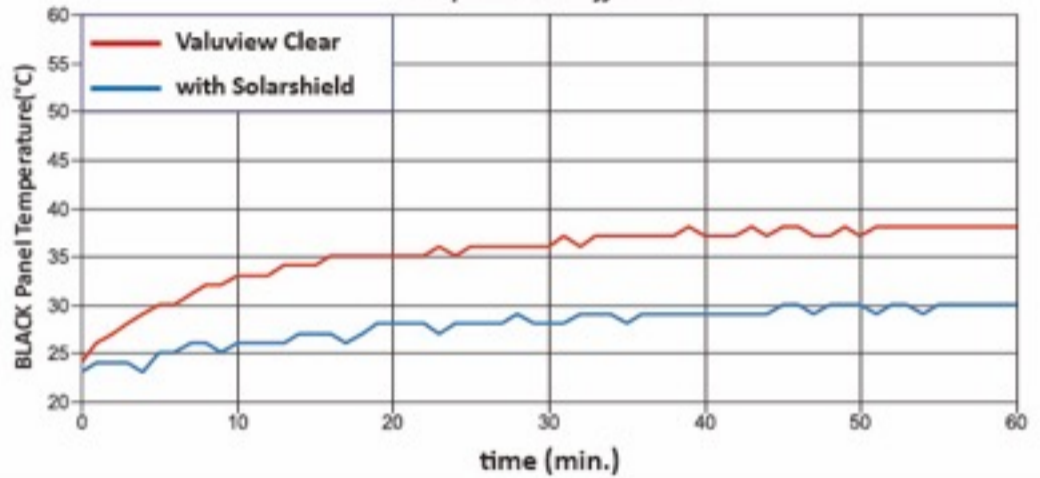
Interference Color	SOLAR Green	SOLAR Grey
Light Transmission (Ty)	40.0	25.0
Shading Coefficient (SC)*	0.30	
Energy Transmittance (g)	0.38	
Base Material	100% Virgin Covestro	
UV and Light Stabilizer	100% Clariant CESA-Light	
Dimensions	5.5mm x 1212mm x 7272mm	
Warranty	15 Years Limited Warranty	

*SC: g value Solarshield / g value 3mm glass

UV - VIS spectrum



Temperature Difference



INSPECTED ITEM	TEST METHOD	TEST STANDARD	TEST RESULT	PASS / FAIL	REMARK
APPEARANCE	CNS11335	Sheets should be flat and smooth, without bubbles, dimples, color blotches or curvature.	GOOD	PASS	
SIZE	CNS11335	Tolerance: 0 ~ +1% (mm)	1213 x 7275	PASS	
THICKNESS	CNS11335	Tolerance: ±10% (mm)	5.51	PASS	
TENSILE STRENGTH (kgf/cm ²)	ASTM D638-14	Tensile Properties of Plastics.	669	PASS	Should be >551(kgf/cm ²)
TENSILE ELONGATION (%)	ASTM D638-14	Tensile Properties of Plastics.	95	PASS	Should be >50 (%)
FLEXURAL STRENGTH (kgf/cm ²)	ASTM D790-17	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Material.	995	PASS	
COMPRESSIVE STRENGTH(kgf/cm ²)	ASTM D695-15	Compressive Properties of Rigid Plastics.	772	PASS	
LUMINOUS TRANSMITTANCE (%)	ASTM D1003-13	Haze and Luminous Transmittance of Transparent Plastics.	Green:40 Grey:25	PASS	
LUMINOUS HAZE (%)	ASTM D1003-13	Haze and Luminous Transmittance of Transparent Plastics.	1.33	PASS	
UV TRANSMITTANCE (%)	ASTM E903-12	Solar Absorptance, Reflectance and Transmittance of Materials Using Integrating Spheres.	0.001	PASS	
NEAR INFRARED CUT OFF (%)	ASTM E903-12	Solar Absorptance, Reflectance and Transmittance of Materials Using Integrating Spheres.	75.15	PASS	
IMPACT RESISTANCE (kgf-cm/cm)	ASTM D256-10	Determining the Izod Pendulum Impact Resistance of Plastics.- Method A	12	PASS	
HORIZONTAL BURNING TEST	ASTM D635-22	Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	<25	PASS	
SHADING COEFFICIENT (SC)	EDTM - WE2500	The fraction of incident solar radiation admitted through a window, both directly transmitted and absorbed and subsequently released inward.	0.3	PASS	Lower is Better for Passive Solar Cooling
Solar Heat Gain Coefficient (SHGC)	EDTM - WE2500	Ratio of the total solar radiation transmitted by a given material relative to 3mm thick clear glass, whose light transmission rate is 87%.	0.26	PASS	Lower is Better for Passive Solar Cooling
LINEAR DIMENSIONAL CHANGE(%)	ASTM D648-07	Non-Rigid thermoplastic sheet @ Elevated Temperatures(±3%)	<1	PASS	
Weather Resistance YELLOW INDEX (YI)	IN HOUSE	Less than 6.0 for colored sheets. No cracks or separation of the polymer after testing.	1.05	PASS	

Lab Environment: Ambient Temperature: 23±2°C

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