



GLASS vs. POLYMERS COMPARISON CHART

PROPERTY		GLASS	ACRYLIC	POLYCARBONATE
SPECIFIC GRAVITY	DW/(DW-WW)	2.48	1.19	1.2
OPTICAL TRANSMISSION	Snell's Law	85-91%	92%	90%
UV BLOCK	UV-A SPECTRUM	25%	UP TO 98%	99.99%
INFRA-RED BLOCK	NIR SPECTRUM	0%	35%	UP TO 40%
SCRATCH RESISTANCE	Moh	4 to 7	3 to 4 Raw; 7+Coated	3 to 4 Raw; 7+Coated
PRODUCTION COSTS	GLASS AS A BASE	100%	70%	80%
IMPACT RESISTANCE	Drop Ball Test, 0.5 lb	0.7 ft-lbs / 7,200 psi	1.75 ft-lbs/18,000 psi	No Break
	.25"			
WEIGHT AS A CONSTANT TO SHATTER	4'x8' Sheet w/ supports at 4'	64 lbs	Up to 700 lbs	No Break
COLD BEND	Bend Radius	Not Possible	180 X material thickness	100 X material thickness
SHEET WEIGHT	0.125"	1.60 lb/ft ²	0.75 lb/ft ²	0.78 lb/ft ²
THERMAL EXPANSION RATE	—	5.0 X 10 ⁻⁶ in/in/°F	4.10 X 10 ⁻⁵ in/in/°F	3.75 X 10 ⁻⁵ in/in/°F
SHADING COEFFICIENT	0.25" clear sheet	1.03	1.01	1.02
U-FACTOR - SUMMER	0.25"	0.92 btu/HR-FT ² —°F	0.83 btu/HR-FT ² —°F	0.83 btu/HR-FT ² —°F
U-FACTOR - WINTER		1.02 btu/HR-FT ² —°F	0.91 btu/HR-FT ² —°F	0.91 btu/HR-FT ² —°F
SOUND TRANSMISSION CLASS	0.25"	27	30	31