

# 2005 ASTM Structural Performance Tests for Structural Glazing (Winwall Technology Pte Ltd – Singapore)

		Panels in 1st Test Sequence		Panels in 2nd Test Sequence		
Test Sequence	Test Method	Acrylic Foam Structural Glazing Tape Laminated Glass	One-Part Structural Silicone DGU	Acrylic Foam Structural Glazing Tape DGU	One-Part Structural Silicone 8mm Tempered	Acrylic Foam Structural Glazing Tape 8mm Tempered
Air Infiltration	ASTM E283 (at +0.3 kPa)	No air leakage from panel	No air leakage from panel	No air leakage from panel	No air leakage from panel	No air leakage from panel
Water Penetration	ASTM E331 (at +0.72 kPa)	No water leakage	No water leakage	No water leakage	No water leakage	No water leakage
Temperature Cycling	20 cycles (-25°C to 70°C)	For each cycle, temperature is maintained at -25°C for 15 minutes and +70°C for 15 minutes (±2°C)		Subjected to 40 cycles	For each cycle, temperature is maintained at -25°C for 15 minutes and +70°C for 15 minutes (±2°C)	
Air Infiltration	ASTM E283 (at +0.3 kPa)	No air leakage from panel	No air leakage from panel	No air leakage from panel	No air leakage from panel	No air leakage from panel
Water Penetration	ASTM E331 (at +0.72 kPa)	No water leakage	No water leakage	No water leakage	No water leakage	No water leakage
Windload Structural	ASTM E330 (-25°C, 32°C, 70°C, hold for 1 minute)	±2.9 kPa (60 psf, 155 mph)		±2.9 kPa (60 psf, 155 mph)	±2.9 kPa (60 psf, 155 mph)	
Air Infiltration	ASTM E283 (at +0.3 kPa)	No air leakage from panel	No air leakage from panel	No air leakage from panel	No air leakage but presence of water condensation seen on spacer tape	No air leakage from panel
Windload Structural Max.	ASTM E330 (32°C, hold 10 sec)	±6 kPa (125 psf, 225 mph)	±6 kPa (125 psf, 225 mph)	±8 kPa (167 psf, 260 mph)	±8 kPa (167 psf, 260 mph)	±8 kPa (167 psf, 260 mph)
Windload Structural Destructive	Maximum Pressure (±)	Glass burst at -8.4 kPa (175 psf, 264 mph, 426 kph)	>-8.4 kPa (175 psf, 264 mph, 426 kph)	>10 kPa (210 psf, 290 mph)	>10 kPa (210 psf, 290 mph, 465 kph)	>10 kPa (210 psf, 290 mph, 465 kph)
<div></div> = Subjected to 2X cycling tests		Construction tests demonstrated that acrylic foam structural glazing tape performs as well as conventional structural silicone sealant.				