

## Product Features and Benefits

- Combination safety / solar control window film
- Micro-layered film designed for tear resistance
- Virtually clear film with heat rejection properties
- Helps protect from broken glass hazards
- Increase comfort and help reduce air conditioning costs
- Helps extend the life of furnishings by significantly reducing harmful UV rays

## Applications

- Bomb Blast Mitigation
- Building Envelope Protection
- Helping to Deter Break & Entry
- Safety Glazing
- Seismic Preparedness
- Spontaneous Glass Breakage

## Performance Testing

Method	Glass Substrate	Film Attachment	Rating	
<b>Safety Glazing</b>				
16 CFR 1201	¼" annealed	--	Category 2, 400 ft-lbs	
ANSI Z97.1			Class A (Unlimited), 400 ft-lbs	
<b>Impact Resistance</b>				
ASTMs E1886 / E1996	¼" tempered	IPA	Missile Level C	
<b>Blast Mitigation</b>				
			Blast Load	Rating
GSA TS01-2003 / ASTM F1642	¼" tempered	IPA	6 psi, 42 psi*msec	GSA Level 2 / ASTM "No Hazard"
	1" double pane (annealed)	IPA	8 psi, 60 psi*msec	GSA Level 2 / ASTM "No Hazard"

\*Glazing systems vary. Contact 3M for more information.

## Film Properties (nominal)

Film Thickness	8 mils	
Film Construction	Micro-layered Laminated	
Tensile Strength	24,000 psi (MD) /26,000 psi (TD)	
Break Strength	200 lbs/in (MD) /215 lbs/in (TD)	
Elongation at Break	104% (MD) /118% (TD)	
Yield Strength	16,000 psi (MD)	
Elongation at Yield	8%	
Modulus	600 kpsi	
Abrasion Resistance (ASTM D1044)	3% Δ Haze	
Peel Strength (ASTM D3330)	4.5 lb/in	
Flammability (ASTM E84)	Class A	
Graves Area Tear Resistance (ASTM D1004)	1,100 lbs%	
Puncture-Propagation-Tear (ASTM D2582)	10 lbf	

Puncture Strength (ASTM D4830)		185 lbf		
<b>Solar Properties – film applied to ¼" glass</b>				
	¼" Clear	¼" Tint	Dual Clear	Dual Tint
<b>VLT</b>	68%	41%	61%	36%
<b>VLR-Int</b>	8%	7%	12%	11%
<b>VLR-Ext</b>	9%	6%	16%	9%
<b>SHGC</b>	0.51	0.44	0.56	0.42
<b>TSER</b>	49%	56%	44%	58%
<b>UV Block</b>	99.9%	99.9%	99.9%	99.9%
<b>Glare ↓</b>	23%	36%	14%	29%
<b>U-Value</b>	1.01	1.01	0.48	0.48
<b>Solar Heat ↓</b>	38%	31%	21%	19%

### IMPORTANT NOTICE:

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### Commercial Solutions Division

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