

Product Features and Benefits

- Combination safety / solar control window film
- Micro-layered film designed for tear resistance
- Moderately tinted for privacy with low interior reflectivity
- 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	
Safety Glazing / Impact Rating				
16 CFR 1201	¼" annealed	--	Category 2, 400 ft-lbs	
ANSI Z97.1			Class A (Unlimited), 400 ft-lbs	
Blast Mitigation			Blast Load	Rating
GSA TS01-2003 / ASTM F1642	¼" annealed	IPA	6 psi, 42 psi*msec	GSA Level 2 / ASTM "No Hazard"
	1" double pane (annealed)	IPP	6 psi, 42 psi*msec	GSA Level 2 / ASTM "No Hazard"
	¼" tempered	IPP	4 psi, 28 psi*msec	GSA Level 3B / ASTM "Minimal Hazard"
	1" double pane (tempered)	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	28,000 psi (MD) / 27,000 psi (TD)
Break Strength	235 lbs/in (MD) / 230 lbs/in (TD)
Elongation at Break	120% (MD) / 85% (TD)
Yield Strength	17,000 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% (MD) / 900 lbs% (TD)

Puncture-Propagation-Tear (ASTM D2582)	10 lbf
Puncture Strength (ASTM D4830)	140 lbf

Solar Properties – film applied to ¼" glass				
	¼" Clear	¼" Tint	Dual Clear	Dual Tint
VLT	27%	16%	24%	14%
VLR-Int	7%	7%	8%	8%
VLR-Ext	17%	9%	22%	11%
SHGC	0.42	0.38	0.51	0.39
TSER	58%	62%	49%	61%
UV Block	99.9%	99.9%	99.9%	99.9%
Glare ↓	70%	75%	66%	72%
U-Value	1.00	1.00	0.48	0.48
Solar Heat ↓	49%	40%	27%	24%

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Commercial Solutions Division

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