

Product Features and Benefits

- Micro-layered film designed for tear resistance
- Optically clear
- Applies to interior glass surfaces
- Helps protect from broken glass hazards
- Helps extend the life of furnishings by significantly reducing harmful UV rays

Applications

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

Performance Testing

Method	Glass Substrate	Film Attachment	Rating	
Safety Glazing				
16 CFR 1201	¼" & 1/8" annealed	--	Category 2, 400 ft-lbs	
ANSI Z97.1			Class A (Unlimited), 400 ft-lbs	
Impact Resistance				
ASTMs E1886 / E1996	¼" tempered	IPA	Missile Level A, +/- 75 psf	
ASTM E330	3/16" tempered		+/- 100 psf	
Blast Mitigation			Blast Load	Rating
GSA TS01-2003 / ASTM F1642	¼" annealed	IPA	9 psi, 60 psi*msec	GSA Level 2 / ASTM "Minimal Hazard"
		IPP	7 psi, 42 psi*msec	GSA Level 2 / ASTM "Minimal Hazard"
	¼" tempered	IPA	9 psi, 60 psi*msec	GSA Level 2 / ASTM "No Hazard"
		IPP	7 psi, 42 psi*msec	GSA Level 2 / ASTM "Minimal Hazard"
	1" double pane (annealed)	IPA	10 psi, 80 psi*msec	GSA Level 2 / ASTM "No Hazard"
		IPP	9 psi, 60 psi*msec	GSA Level 2 / ASTM "Minimal Hazard"

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

Film Properties (nominal)

Film Thickness	8 mils
Film Construction	Micro-layered
Tensile Properties (ASTM D882)	
Tensile Strength	32,000 psi
Break Strength	245 lbs/in (MD) /265 lbs/in (TD)
Elongation at Break	130%
Yield Strength	15,000 psi
Elongation at Yield	9%
Modulus	473 kpsi
Graves Area Tear Resistance (ASTM D1004)	1,100 lbs% (MD) /1,300 lbs% (TD)
Puncture-Propagation-Tear Resistance (ASTM D2582)	9 lbf (MD) /10 lbf (TD)

Puncture Strength (ASTM D4830)	185 lbf
Abrasion Resistance (ASTM D1044)	3% Δ haze
Peel Strength (ASTM D3330)	6 lb/in
Flammability (ASTM E84)	Class A
Solar Properties – film applied to ¼" clear glass	
Visible Light Transmitted	87%
UV Light Rejected	99.9%

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Commercial Solutions Division

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