

Anatomy of the DEFENSELITE™ System:



- 1 Proprietary DefenseLite extrusion attaches to the existing glazing frame and separates clear shield from primary glass
- 2 'Unbreakable' clear shield is affixed to the extrusion
- 3 DefenseLite 'Super Bond' secures the system to the existing glazing
- 4 Customized edge banding and powder coating makes system virtually invisible upon installation

Each system is custom fabricated based on existing glazing conditions and installed by certified installers. Systems may utilize exotic plastics, polycarbonates and glass-clad shields depending on threat conditions and budgets. All-weather adhesives, high-performance films, mechanical anchors and other materials may be used. shields install on the exterior or interior of existing windows and doors. Systems have been independently tested to meet forced entry and UL752 ballistic standards.

DEFENSELITE™ PRO (DLP)

Maximum Retro-fit Forced-Entry Protection for Glazing

DLP Shield

DefenseLite™ PRO is a .375" polished surface, UV stabilized, transparent security shield. It features outstanding impact strength, superior dimensional stability, high temperature resistance and visual clarity. This lightweight thermoformable sheet is easy to fabricate and customize for any window or door opening.

DLP Anchor

Custom extruded frame system includes fasteners, high-bond adhesives, structural caulk and mounts onto the existing building glazing system.

Warranty

DefenseLite™ PRO is offered with a minimum two (2) year parts & labor warranty when installed by a certified technician. The specific terms of the warranty are available upon request.

Applications

- Commercial and industrial glazing
- Interior or exterior window and door openings
- Curtainwall

DLP Features

- Heavy gauge architecture grade polycarbonate (.375")
- "Thick walled" aluminum extrusion/framing
- Security fasteners
- Multiple trim colors

Options

- Extended warranty
- Sacrificial surface applied clear protective film
- Audible impact alarm
- Powder coating
- Architectural finished framing

TYPICAL PROPERTIES*

Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	–	1.2
Refractive Index	ASTM D 542	–	1.586
Light Transmission, Clear @ 0.118"	ASTM D 1003	%	86
Light Transmission, I30 Gray @ 0.118"	ASTM D 1003	%	50
Light Transmission, K09 Bronze @ 0.118"	ASTM D 1003	%	50
Light Transmission, I35 Dark Gray @ 0.118"	ASTM D 1003	%	18
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	–	0.38
MECHANICAL**			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Compressive Strength	ASTM D 695	psi	12,500
Compressive Modulus	ASTM D 695	psi	345,000
Izod Impact Strength, Notched @ 0.125"	ASTM D 256	ft-lbs/in	18
Izod Impact Strength, Unnotched @ 0.125"	ASTM D 256	ft-lbs/in	60 (no failure)
Instrumented Impact @ 0.125"	ASTM D 3763	ft-lbs	>47
Shear Strength, Ultimate	ASTM D 732	psi	10,000
Shear Strength, Yield	ASTM D 732	psi	6,000
Shear Modulus	ASTM D 732	psi	114,000
Rockwell Hardness	ASTM D 785	–	M70 / R118
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10-5
Coefficient of Thermal Conductivity	ASTM C 177	BTU-in/hr-ft2-°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
Brittleness Temperature	ASTM D 746	°F	-200
Shading Coefficient, clear @ 0.236"	NFRC 100-2010	–	0.97
Shading Coefficient, Gray or Bronze @ 0.236"	NFRC 100-2010	–	0.77
U factor @ 0.236" (summer, winter)	NFRC 100-2010	BTU/hr-ft2-°F	0.85, 0.92
U factor @ 0.375" (summer, winter)	NFRC 100-2010	BTU/hr-ft2-°F	0.78, 0.85
ELECTRICAL			
Dielectric Constant @ 10 Hz	ASTM D 150	–	2.96
Dielectric Constant @ 60 Hz	ASTM D 150	–	3.17
Volume Resistivity	ASTM D 257	Ohm-cm	8.2 x 1016
Dissipation Factor @ 60 Hz	ASTM D 150	–	0.0009
Arc Resistance			
Stainless Steel Strip electrode	ASTM D 495	Seconds	10
Tungsten Electrodes	ASTM D 495	Seconds	120
Dielectric Strength, in air @ 0.125"	ASTM D 149	V/mil	380
FLAMMABILITY			
Horizontal Burn, AEB	ASTM D 635	in	<1
Ignition Temperature, Self	ASTM D 1929	°F	1022
Ignition Temperature, Flash	ASTM D 1929	°F	824
Flame Class @ 0.060"	UL 94	–	HB
@ 0.394"	UL 94	–	V-0

*Typical properties are not intended for specification purposes.

**Some properties characterized using non-textured sheet.

DEFENSELITE™ BASIC (DLB)

Retro-fit Forced-Entry Protection for Glazing

DLB Shield

DefenseLite™ BASIC is a .220" polished surface, UV stabilized, transparent security shield. It features outstanding impact strength, superior dimensional stability, high temperature resistance and visual clarity. This lightweight thermoformable sheet is easy to fabricate and customize for any window or door opening.

DLB Anchor

Custom extruded frame system includes fasteners, high-bond adhesives, structural caulk and mounts onto the existing building glazing system.

Warranty

DefenseLite™ BASIC is offered with a minimum two (2) year parts & labor warranty when installed by a certified technician. The specific terms of the warranty are available upon request.

Applications

- Commercial and industrial glazing
- Interior or exterior window and door openings
- Curtainwall

DLB Features

- Architecture grade polycarbonate sheets (.220")
- Aluminum extrusion/framing
- Security fasteners
- Bronze, aluminum and white trim colors

Options

- Extended warranty
- Sacrificial surface applied clear protective film
- Audible impact alarm

TYPICAL PROPERTIES*

Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	–	1.2
Refractive Index	ASTM D 542	–	1.586
Light Transmission, Clear @ 0.118"	ASTM D 1003	%	86
Light Transmission, I30 Gray @ 0.118"	ASTM D 1003	%	50
Light Transmission, K09 Bronze @ 0.118"	ASTM D 1003	%	50
Light Transmission, I35 Dark Gray @ 0.118"	ASTM D 1003	%	18
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	–	0.38
MECHANICAL**			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Compressive Strength	ASTM D 695	psi	12,500
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Izod Impact Strength, Notched @ 0.125"	ASTM D 256	ft-lbs/in	18
Izod Impact Strength, Unnotched @ 0.125"	ASTM D 256	ft-lbs/in	60 (no failure)
Instrumented Impact @ 0.125"	ASTM D 3763	ft-lbs	>47
Shear Strength, Ultimate	ASTM D 732	psi	10,000
Shear Strength, Yield	ASTM D 732	psi	6,000
Shear Modulus	ASTM D 732	psi 1	14,000
Rockwell Hardness	ASTM D 785	–	M70 / R118
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10-5
Coefficient of Thermal Conductivity A	STM C 177	BTU-in/hr-ft2-°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
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Shading Coefficient, clear @ 0.236"	NFRC 100-2010	–	0.97
Shading Coefficient, Gray or Bronze @ 0.236"	NFRC 100-2010	–	0.77
U factor @ 0.236" (summer, winter)	NFRC 100-2010	BTU/hr-ft2-°F	0.85, 0.92
U factor @ 0.375" (summer, winter)	NFRC 100-2010	BTU/hr-ft2-°F	0.78, 0.85
ELECTRICAL			
Dielectric Constant @ 10 Hz	ASTM D 150	–	2.96
Dielectric Constant @ 60 Hz	ASTM D 150	–	3.17
Volume Resistivity A	STM D 257	Ohm-cm	8.2 x 1016
Dissipation Factor @ 60 Hz	ASTM D 150	–	0.0009
Arc Resistance			
Stainless Steel Strip electrode	ASTM D 495	Seconds	10
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Flame Class @ 0.060"	UL 94	–	HB
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