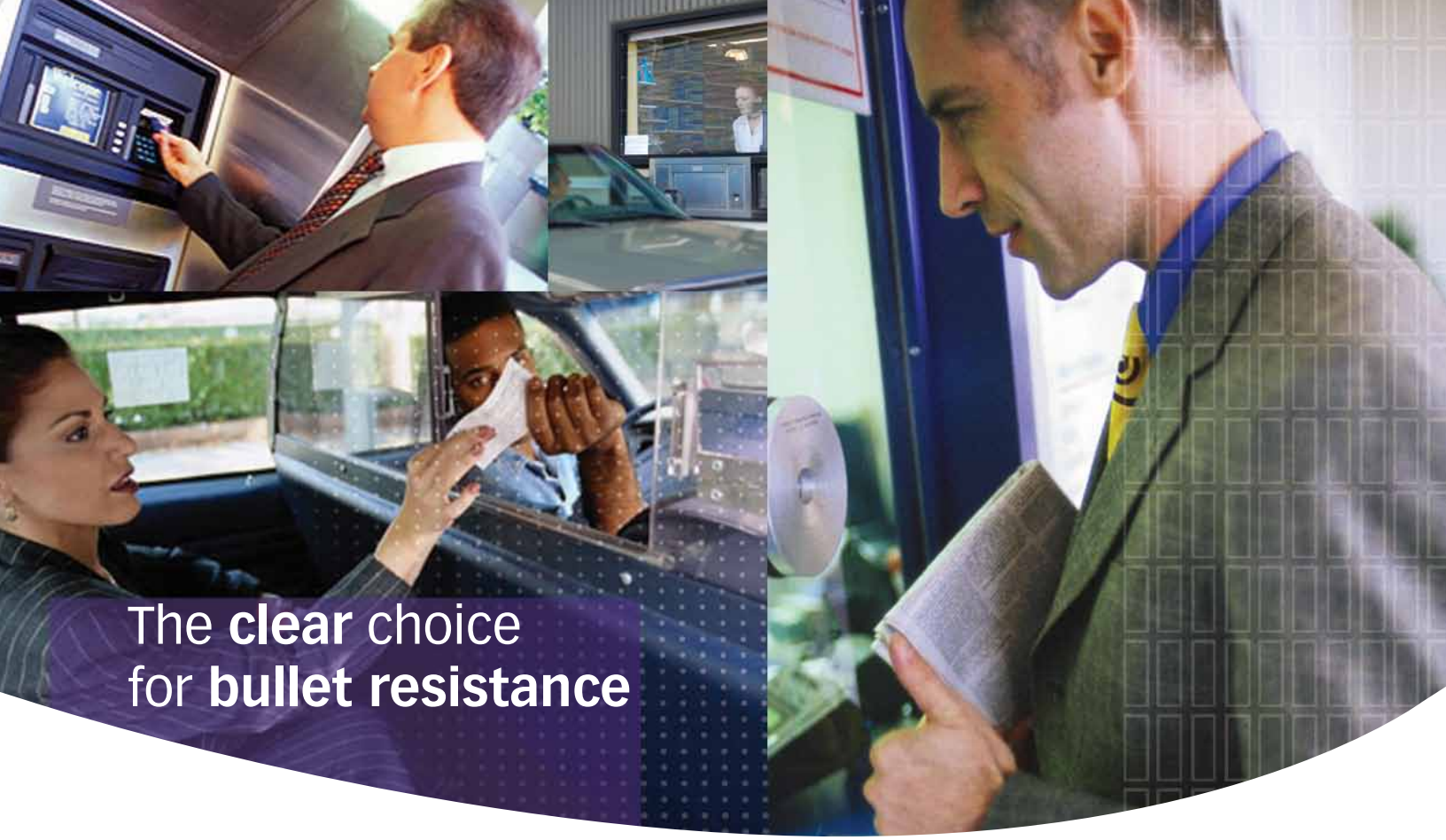

The **clear** choice for **bullet resistance**

PLEXIGLAS® BY ARKEMA

Plexiglas® **SB**
Plexiglas® **SBAR**

CELL CAST ACRYLIC SHEET

The world can be a dangerous place. That's why so many glazing and security professionals make the safe choice with Plexiglas® SB acrylic sheet bullet-resistant glazing material. Its patented protection serves every day in high security environments — wherever weapons, violence, or vandalism are a risk.

Plexiglas® SB acrylic sheet offers a lightweight, crystal-clear, non-laminated alternative for your protective barrier designs and it's half the weight of bullet-resistant glass of the same UL class rating. When clarity and security are important, no material outshines it.

Plexiglas® SB acrylic sheet meets UL 752-Level I and II requirements for use in bullet-resistant applications involving small firearms. It is also available with an abrasion resistant coating. Plexiglas® SBAR acrylic sheet offers 40 times the abrasion resistance of uncoated acrylic.

APPLICATIONS

- **For banks, government buildings, convenience stores.**
- **Kiosks, ATMs, drive-up windows, bus shelters.**
- **Prisons, jails, detention centers, psychiatric hospitals.**
- **Front/back seat dividers in police vehicles, taxicabs.**
- **Counter barrier windows, under counters, access doors.**
- **Patented technology within the scope of one or more claims of US patent 8,119, 231.**

ALTUGLAS INTERNATIONAL ARKEMA GROUP

Plexiglas® SB
Plexiglas® SBAR

CELL CAST ACRYLIC SHEET

KEY FEATURES

- **Lightweight without Laminating**
  Plexiglas® SB acrylic sheet provides the same level of protection without lamination and is half the weight of glass laminates with the same UL ratings.

- **Radiant Clarity & Aesthetics**
  Plexiglas® SB acrylic sheet looks great. Its clear edges, which shine when polished, provide a frameless, clean and continuous look creating an aesthetically pleasing yet unyielding barrier. Plexiglas® SB acrylic sheet resists yellowing, hazing and degradation while allowing excellent light transmittance.

- **Design Flexibility & Application Versatility**
  Plexiglas® SB acrylic sheet can be custom cut to any size and is prepared and installed with conventional tools. Plexiglas® SB acrylic sheet is easier and less expensive to ship and provides a cost-saving benefit to installers.

- **Abrasion Resistant**
  Plexiglas® SB acrylic sheet meets the ASTM 4802 abrasion resistant requirement. Our coated acrylic sheet, Plexiglas® SBAR, offers 40 times the abrasion resistance of uncoated acrylic for applications where greater wear protection is required.

- **Exceptional Value**
  Plexiglas® SB acrylic sheet is a monolithic, lightweight and crystal clear protective-barrier material that offers performance benefits and cost savings versus polymer or glass laminates with the same UL class rating.

Ballistic Protection Ratings of Bullet Resistant Material per UL-752 Standards

	Level 1	Level 2
Weapon	9mm	.357 Magnum
Ammunition Full Metal Copper Jacket, Lead Core	Full Metal Copper Jacket, Lead Core	Jacketed Lead Soft Point
Weight (Grains / Grams)	124 / 8.0	158 / 10.2
Muzzle Energy	380 to 460 ft-lb.	548 to 663 ft-lb.
Min. Bullet Velocity	1,175 ft/sec.	1,250 ft/sec.
Max. Bullet Velocity	1,293 ft/sec.	1,375 ft/sec.
Area of use	Indoor/Outdoor	Indoor

SB/SBAR	Thickness	Max. Size Availability	Weight
Level 1	1.25" (32mm)	6' x 8'	7.7 lbs/sf
Level 2	1.375" (35mm)	6' x 8'	8.8 lbs/sf

TYPICAL PROPERTIES

Plexiglas® SB and SBAR Level I and II

Property	Method	Unit	Value
Physical			
Nominal Thickness for data unless otherwise noted		in	1.250"
Specific Gravity	ASTM D-792	—	1.19
Optical			
Refractive Index (ND @ 73°F)	ASTM D-542	—	1.49
Luminous Transmittance[1]	ASTM D-1003	%	90 min
Haze[1]	ASTM D-1003	%	< 1.0
Yellowness Index[1]	ASTM E-313	Y_i	< 0.7
Mechanical			
Tensile Strength, Maximum	ASTM D-638	psi	9,600
Tensile Modulus of Elasticity	ASTM D-638	psi	450,000
Flexural Modulus of Elasticity	ASTM D-790	psi	400,000
Thermal			
Coefficient of Thermal Expansion at 60ºF	ASTM E-831	in / in / ºF x 10^{-5}	3.9
U-value (summer gain)	N/A	BTU / (hr) (ft^2)(ºF/in)	0.73
Indoor Use Temperature Rating	UL 752	ºF	55º – 95º
Outdoor Use Temperature Rating	UL 752	ºF	-26º - 120º
Abrasion Resistance			
Haze Change after Taber Abrasion on Plexiglas® SBAR (100 cycles, 500g load, CS10F wheel)	ASTM D-1044	%	< 2.0
Flammability[2] & Specification Compliance			
Self Ignition Temperature	ASTM D 1929	°F	992
Bullet Resistant Glazing	UL 752 File BP8815	—	Level I – 1.25" (Indoor/Outdoor) Level II – 1.375" (Indoor only)
American National Standard for Safety Glazing	ANSI Z97.1	—	PASS

- Data given are average values and should not be used for specification purposes.
- Conditioned for 24 hours at 122ºF
  1. This property will change with thickness. The value given is for the thickness indicated in the column heading unless otherwise noted.
  2. Flammability tests are small scale tests and may not be indicative of how materials will perform in an actual situation.

Plexiglas® acrylic plastic is a combustible thermoplastic. Observe fire precautions appropriate for comparable forms of wood and paper. For building uses, check code approvals. Impact resistance is a factor of thickness. Avoid exposure to heat or aromatic solvents. Clean with soap and water. Avoid abrasives.

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See MSDS for Health & Safety Considerations.
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