INSULGARD™
SECURITY PRODUCTS

PRODUCT CATALOG

Architectural security solutions built to resist ballistic, wind & impact, and forced entry threats

BULLETBLOCK™
BULLET RESISTANT WINDOWS, DOORS & GLAZING

STORMDEFEND™
STORM SHELTER WINDOWS & DOORS

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

FORCEPROTECT™
FORCED ENTRY RESISTANT GLASS

Insulgard Security Products maintains a versatile, multi-tiered product line to meet the needs of many industries. Insulgard's product line includes glazing materials, counterline systems, transaction windows, doors, windows and storefront systems designed and tested to resist ballistic, forced entry and wind an impact threats. These products can be found in a myriad of locations including banks, convenience stores, retail establishments, corporate headquarters, data centers, schools, community shelters and emergency operation centers.

BULLETBLOCK
BULLET RESISTANT WINDOWS, DOORS & GLAZING

SAFECHANGE
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

STORMDEFEND
STORM SHELTER WINDOWS & DOORS

FORCEPROTECT
FORCED ENTRY RESISTANT GLASS

BULLET RESISTANT FRAMING SYSTEMS

Insulgard Security Products offers a full line of architectural aluminum framing systems designed and tested to meet a wide range of ballistic protection. From a punched window to a sprawling storefront, from UL752 level 1 ballistic protection to UL752 level 8, Insulgard offers a framing system that, when paired with the proper BULLETBLOCK glazing, will work for your project.

BULLETBLOCK™
BULLET RESISTANT WINDOWS, DOORS & GLAZING

44/250 ARCHITECTURAL ALUMINUM SASH SYSTEM

UL 752 Level 1-3

- 1 1/2" x 2 1/2" profile
- Accepts various glazing materials from 3/4" to 1 3/8"
- Anodized or painted finishes
- Completely fabricated and shipped knocked down and ready for installation
- Can be used in new or retrofit construction

44/600 ARCHITECTURAL ALUMINUM FRAMING SYSTEM

UL 752 Level 1-3

- 2 1/2" x 6" profile
- Accepts various glazing materials from 3/4" to 1 3/8"
- Anodized or painted finishes
- Completely fabricated and shipped assembled when applicable
- Designed for new construction or retrofit applications
- Designed for conventional installation and glazing methods

HP600 BULLET RESISTANT WINDOW SYSTEM

UL 752 Levels:
1, 2, 3, 4, 5 & 8

- Meets UL752 levels 1, 2, 3, 4, 5 and 8 bullet resistance
- Accepts various glazing materials from 1 1/4" through 2 1/16"
- Anodized or painted finishes
- Completely fabricated and shipped fully assembled when applicable
- Designed for conventional installation and glazing methods

44/450 ARCHITECTURAL ALUMINUM FRAMING SYSTEM

UL 752 Level 1-3

- 2 1/2" x 4 1/2" profile
- Accepts various glazing materials from 3/4" to 1 3/8"
- Anodized or painted finishes
- Completely fabricated and shipped assembled when applicable
- Designed for new construction or retrofit applications
- Designed for conventional installation and glazing methods

TTH600 FRAMING

UL 752 Level 1-3

- 2 1/2" x 6" perimeter profile
- Mullion profile of 3 1/4"
- Accepts various glazing materials from 1 1/4" to 2 1/16"
- Thermally broken framing system
- Anodized or painted finishes
- Completely fabricated and shipped assembled when applicable
- Designed for new construction or retrofit applications
- Designed for conventional installation and glazing methods

BACKGLAZED WINDOW SYSTEM

UL 752 Level 1-3

- Hinged for ease of cleaning
- Anodized or painted finishes
- Key locking system available
- New or retrofit applications
- Interior only

BULLETBLOCK products are tested to UL752 standards by Underwriters Laboratory and listed as such.
For more information about BULLETBLOCK products visit our website at www.insulgard.com or contact us at 800-624-6315

BULLET RESISTANT DOORS

To complement our window systems, Insulgard offers a full line of architectural door systems meeting a wide range of ballistic protection. From wood doors to slab acrylic doors to hollow metal steel doors to aluminum full vision doors, Insulgard's line of BULLETBLOCK door systems offers a secure solution for your entrance while still meeting the design requirements of your project. And rest assured, just like our window systems, all of the doors or the products used to manufacture the doors have been tested and listed by UL as meeting UL752 standards.

BULLETBLOCK™
BULLET RESISTANT WINDOWS, DOORS & GLAZING

44/350 ARCHITECTURAL ALUMINUM DOOR SYSTEM

UL 752 Level 1-3

- Accepts glazing 3/4" to 1 3/8"
- Full or half vision glazing
- Available in narrow or medium stile
- Anodized or painted finishes
- Single or pair of doors
- Accepts a variety of hardware

LC DOOR SYSTEM

UL 752 Level 1-3

- Wood core construction
- Heavy duty continuous hinge
- Plastic laminate, metal laminate and prime painted finishes available
- Door and frame shipped assembled and prepped for hardware
- Wide range of sizes available
- Optional view window

HOLLOW METAL DOOR SYSTEM

UL 752 Level 1-8

- Door and frame constructed of 16 gauge steel
- Continuous heavy duty hinge
- Complete hardware outfitting
- Optional view window
- Variety of frame types available
- New construction or retrofit applications

HP500 ARCHITECTURAL ALUMINUM DOOR SYSTEM

UL 752 Levels 3, 4, 5, and 8

- Accepts glazing 1 1/4" to 2 1/16"
- Medium stile
- Heavy duty continuous hinge
- Anodized or painted finishes
- Full vision glazing
- Fabricated and shipped complete with hardware

POLYMER DOOR SYSTEM

UL 752 Level 1-3

- Transparent with full or half vision glazing
- Heavy duty continuous hinge
- Door and frame shipped assembled and prepped for hardware
- Wide range of sizes available

44/350 ARCHITECTURAL ALUMINUM SLIDING DOOR SYSTEM

UL 752 Level 1-3; Blast GSA, UFC

- Available as bi-parting, bi-passing, or single sliding
- Accepts various glazing materials from 3/4" to 1 3/8"
- Available in narrow or medium stile
- Full or half vision glazing
- Manual or automatic with operator
- Anodized or painted finishes
- Complete line of hardware options
- Safety breakaway option available

BULLETBLOCK products are tested to UL752 standards by Underwriters Laboratory and listed as such.

For more information about BULLETBLOCK products visit our website at www.insulgard.com or contact us at 800-624-6315.

BULLET RESISTANT GLAZING MATERIAL

Insulgard's line of BULLETBLOCK glazing products offers a wide variety of glazing makeups meeting various levels of ballistic protection for use in an unlimited number of security applications. From interior to exterior applications, low level to the highest level of ballistic protection or enclosures to framed windows and doors, BULLETBLOCK Glazing products can offer the solution you're looking for.

BULLETBLOCK™
BULLET RESISTANT WINDOWS, DOORS & GLAZING

ACRYLIC

BULLETBLOCK Acrylic products are ideal for interior applications such as customer service windows and enclosures where a lower level of ballistic protection is required. These products offer a lighter weight option than glass while providing optimal clarity for a seamless appearance and ease of fabrication such as cutting, routing or polishing. These products are also available with or without an abrasion resistant coating.

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
Acryshield™ MP 1.25	UL 752 Level 1	Acrylic sheet	1.25 in	7.7 lbs/sq ft
Acryshield™ HP 1.25	UL 752 Level 2	Acrylic sheet	1.378 in	8.5 lbs/sq ft
Acryshield™ SP 1.25	UL 752 Level 3	Acrylic sheet	1.25 in	7.7 lbs/sq ft

Acryshield™ is a trademark of Spartech LLC.

LAMINATED POLYCARBONATE

BULLETBLOCK Laminated polycarbonate is an all plastic product available for lower levels of ballistic protection that is ideal for interior applications such as transaction windows. Because laminated polycarbonate is stocked in standard sheet sizes and easily fabricated it is readily available for quick turn projects. Laminated polycarbonate comes standard with a mar-resistant coating on both exposed surfaces to protect against scratching.

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
MP750	UL 752 Level 1	LEXGARD™ Laminate	0.750 in	4.6 lbs/sq ft
HP875	UL 752 Level 2	LEXGARD™ Laminate	0.86 in	6.4 lbs/sq ft
MP1000	UL 752 Level 2; H.P. White HPW-TP-0500.02 Forced Entry Level 4; ASTM F1233 Class 5	LEXGARD™ Laminate	1.030 in	6.4 lbs/sq ft
SP1250	UL 752 Level 3; H.P. White HPW-TP-0500.02 Forced Entry Level 5; ASTM F1233 Class 5; ASTM F1915 Grade 1	LEXGARD™ Laminate	1.240 in	7.7 lbs/sq ft
RS1250	UL 752 Level 6	LEXGARD™ Laminate	1.250 in	7.7 lbs/sq ft

GLASS-CLAD POLYCARBONATE

BULLETBLOCK glass-clad polycarbonate products combine the strength of polycarbonate and the rigidity of glass to produce multiple layered products that consist of glass to the exterior (threat side) and polycarbonate to the interior (safe side). Glass-clad polycarbonate products are available in UL752 levels 1-8 and are ideal for exterior applications where the exposed glass surface better protects against weathering. Glass-clad polycarbonate products can also be insulated providing much better thermal performance.

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
BALULN21	UL 752; Level 1	Glass-clad polycarbonate	0.860 in	9 lbs/sq ft
BALULN21 IG	UL 752; Level 1	Glass-clad polycarbonate	1.692 in	12.92 lbs/sq ft
BALULN23	UL 752; Level 2	Glass-clad polycarbonate	0.960 in	10.34 lbs/sq ft
BALULN23 IG	UL 752; Level 2	Glass-clad polycarbonate	1.587 in	14.44 lbs/sq ft
BALULN25	UL 752; Level 3	Glass-clad polycarbonate	0.980 in	11.3 lbs/sq ft
BALULN25 IG	UL 752; Level 3	Glass-clad polycarbonate	1.716 in	14.56 lbs/sq ft
SP412	UL 752; Level 4	Glass-clad polycarbonate	1.22 in	14.5 lbs/sq ft
SP412 IG	UL 752; Level 4	Glass-clad polycarbonate	1.954 in	17.719 lbs/sq ft
BALULN32	UL 752; Level 5	Glass-clad polycarbonate	1.280 in	14.4 lbs/sq ft
BALULN32 IG	UL 752; Level 5	Glass-clad polycarbonate	2.010 in	17.67 lbs/sq ft
BALULN50	UL 752; Level 7	Glass-clad polycarbonate	1.930 in	22.22 lbs/sq ft
SP820	UL 752; Level 8	Glass-clad polycarbonate	2.072 in	22.34 lbs/sq ft

ALL GLASS LAMINATE

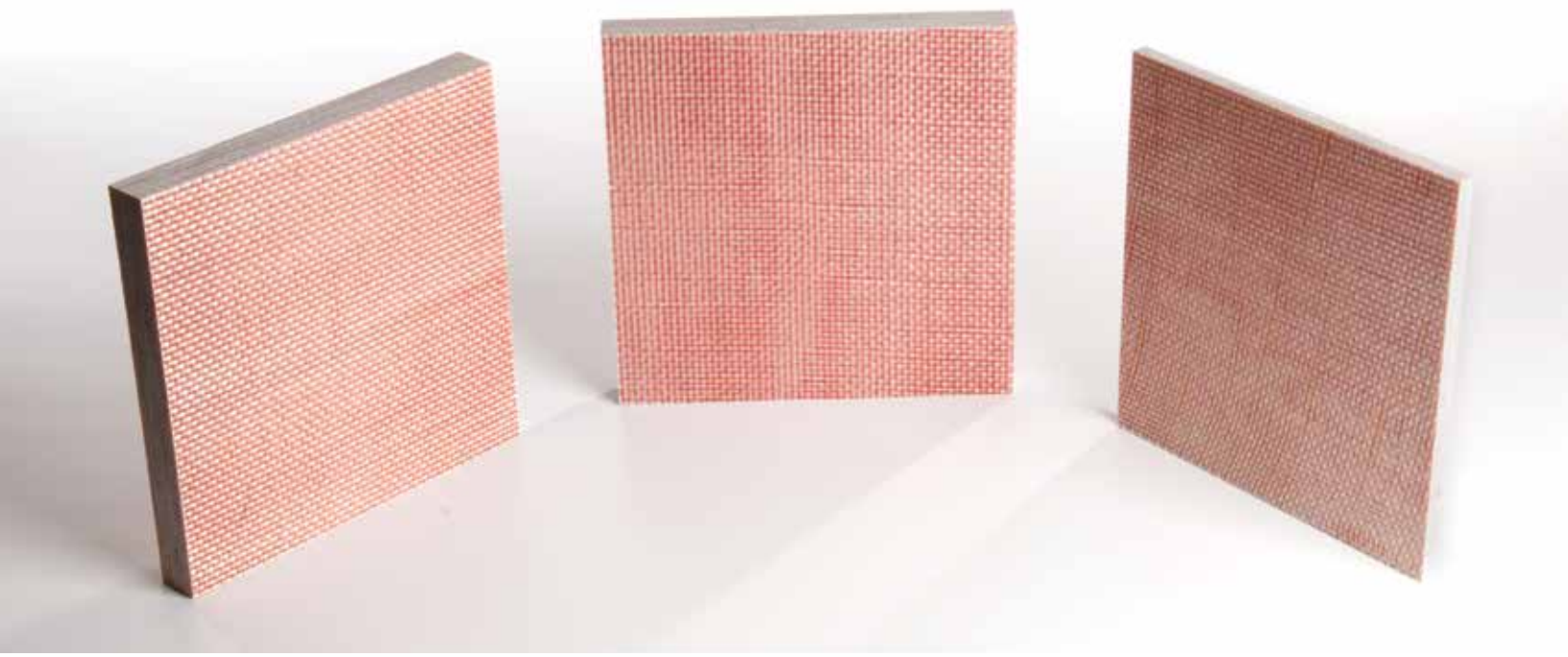
BULLETBLOCK All Glass Products contain multiple layers of glass laminated together to create ballistic makeups. These products contain no polycarbonate and therefore provide exceptional resistance to weathering as well as harsh chemicals that can be found in some cleaners. All Glass Products are available in lower levels of ballistic protection (1-3) and must be manufactured to size.

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
BR-113	UL 752 Level 1	All glass laminate	1.295 in	16.05 lbs/sq ft
BR-155	UL 752 Level 2	All glass laminate	1.812 in	22.51 lbs/sq ft
BR-233	UL 752 Level 3	All glass laminate	2.136 in	26.38 lbs/sq ft

BULLETBLOCK products are tested to UL752 standards by Underwriters Laboratory and listed as such.

For more information about BULLETBLOCK products visit our website at www.insulgard.com or contact us at 800-624-6315.

BULLET RESISTANT OPAQUE ARMOR



Insulgard Security Products' BULLETBLOCK FG Series fiberglass-reinforced structural polyester laminate exhibits unique bullet resisting characteristics. The layers of the bullet-resistant wall panel are designed to delaminate or separate from each other when struck by a projectile. The bullet then becomes trapped within the woven fiberglass.

BULLETBLOCK™
BULLET RESISTANT WINDOWS, DOORS & GLAZING

FIBERGLASS

This BULLETBLOCK FG Series fiberglass structural armor is available in UL752 levels 1-8 ballistic protection and comes in both stock sheets (3 ' x 8 ', 4 ' x 5 ', or 4 ' x 8 ') and custom sizes.

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
FG-100	UL 752 Level 1	Fiberglass Bullet Resisting Opaque Armor	0.250 in	2.9 lbs/sq ft
FG-200	UL 752 Level 2; NIJ Type II	Fiberglass Bullet Resisting Opaque Armor	0.375 in	4.1 lbs/sq ft
FG-300	UL 752 Level 3; NIJ Type IIIA	Fiberglass Bullet Resisting Opaque Armor	0.500 in	5.3 lbs/sq ft
FG-400	UL 752 Level 4	Fiberglass Bullet Resisting Opaque Armor	1.188 in	13.7 lbs/sq ft
FG-500	UL 752 Level 5	Fiberglass Bullet Resisting Opaque Armor	1.375 in	14.9 lbs/sq ft
FG-600	UL 752 Level 6	Fiberglass Bullet Resisting Opaque Armor	0.375 in	4.1 lbs/sq ft
FG-700	UL 752 Level 7	Fiberglass Bullet Resisting Opaque Armor	1.063 In	12.1 lbs/sq ft
FG-800	UL 752 Level 8; NIJ Type III	Fiberglass Bullet Resisting Opaque Armor	1.438 in	15.5 lbs/sq ft

RATINGS OF BULLET RESISTANT MATERIALS AS IDENTIFIED BY UL 752 (DECEMBER 11, 2015)

RATING	AMMUNITION	GRAIN	(G)	MINIMUM VELOCITY (FPS)	MINIMUM VELOCITY (MPS)	NO. OF SHOTS
Level 1	9mm full metal copper jacket with lead core	124	8.0	1175	358	3
Level 2	.357 magnum jacketed lead soft point	158	10.2	1250	381	3
Level 3	.44 magnum lead semi-wadcutter gas checked	240	15.6	1350	411	3
Level 4	.30 caliber rifle lead core soft point	180	11.7	2540	774	1
Level 5	7.62mm rifle lead core full metal copper jacket, military ball	150	9.7	2750	838	1
Level 6	9mm full metal copper jacket with lead core	124	8.0	1400	427	5
Level 7	5.56mm rifle full metal copper jacket with lead core	55	3.56	3080	939	5
Level 8	7.62mm rifle lead core full metal copper jacket, military ball	150	9.7	2750	838	5
Supplementary Shotgun	12-gauge rifled lead slug	437	28.3	1585	483	3
Supplementary Shotgun	12-gauge 00 lead buckshot (12 pellets)	650	42	1200	366	-

RATINGS OF BULLET RESISTANT MATERIALS AS IDENTIFIED BY NATIONAL INSTITUTE OF JUSTICE (NIJ) 0108.01 (SEPTEMBER, 1985)

RATING	AMMUNITION	GRAIN	(G)	VELOCITY (MPS)	VELOCITY (FPS)	NO. OF SHOTS
Level II	.38 special round nose lead	158	10.2	259 +/- 15	850 +/- 50	5
Level IIA	357 mag. jacketed soft point	158	10.2	381 +/- 15	1250 +/- 50	5
Level IIA	9mm full metal jacket	124	8.0	332 +/- 15	1090 +/- 40	5
Level II	357 mag. jacketed soft point	158	10.2	425 +/- 15	1395 +/- 50	5
Level II	9mm full metal jacket	124	8.0	358 +/- 12	1175 +/- 40	5
Level IIIA	.44 mag. lead semi-wadcuttergas checked	240	15.55	426 +/- 15	1400 +/- 50	5
Level IIIA	9mm full metal jacket	124	8.0	426 +/- 15	1400 +/- 50	5
Level III	7.62mm (308 Winchester) full metal jacket	150	9.7	838 +/- 15	2750 +/- 50	5
Level IV	.30-06 armor piercing	166	10.8	868 +/- 15	2850 +/- 50	1

COUNTERLINE SYSTEMS

Counterline systems, often referred to as bandit barriers, offer excellent aesthetics and voice transmission characteristics. Crafted using high quality bullet resistant fiberglass panels, glass or acrylic, our SAFECHANGE counterline systems act as an excellent protective barrier and theft deterrent to protect employees and assets. Transactions can be performed in complete safety, protecting both the customer and employee with the use of a secure bandit barrier.

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

ARCHED COUNTERLINE WINDOW

SQUARE TOP COUNTERLINE WINDOW

BAFFLE COUNTERLINE WINDOW

HORIZONTAL BAFFLE COUNTERLINE WINDOW

FEATURES

- Fabricated from UL 752 level 1, 2 or 3 Acrylic or LEXGARD™
- Acrylic is available with or without SAR Coating
- Custom sizes and configurations available
- Shipped complete with all fasteners

APPLICATIONS

- Banks
- Credit unions
- Check cashing facilities
- Payment centers
- Passport offices
- Customer service centers

CONSTRUCTION

Counterline systems can be customized in a number of ways to meet your security needs and match your business requirements. The design will incorporate speak-thru options, currency trays, package passers, and bullet resistant transaction windows to ensure complete safety and security.

BULLET RESISTANT TRANSACTION WINDOWS

Insulgard designs bullet resistant transaction windows with natural voice transmission for various applications, including secure passage of currency and documents. Our SAFECHANGE bullet resistant transaction windows are offered in a variety of material options, sizes, and ballistic levels.

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

AVT TRANSACTION WINDOW

UL 752 Level 1-3

- Extruded aluminum voice rails
- Interior or exterior applications
- Stainless steel or solid surface deal tray
- High pressure laminate, stainless steel, or solid surface base
- Assembled and ready for installation
- Deep base optional

SVT TRANSACTION WINDOW

UL 752 Level 1-3

- Vertical stainless steel armored voice rails
- Interior or exterior applications
- Stainless steel or solid surface deal tray
- High pressure laminate, stainless steel or solid surface base
- Assembled and ready for installation

SVPT TRANSACTION WINDOW

UL 752 Level 1-3

- Offers same features as a SVT Transaction window with a package passer included

SLH TRANSACTION WINDOW

UL 752 Level 1-3

- Manual horizontal slide operation with locking hardware
- Custom fabricated to meet application requirements
- Anodized or painted finishes
- Delivered complete and ready for installation
- Framed unit available

SLV TRANSACTION WINDOW

UL 752 Level 1-3

- Manual vertical lift operation with locking hardware
- Custom fabricated to meet application requirements
- Anodized or painted finishes
- Delivered complete and ready for installation

BULLET RESISTANT PACKAGE PASSERS/DRAWERS

Shipping agents, post offices, retail counters, convenience stores, and more must often transfer parcels between customers and staff. In many of these applications, bullet-resistant enclosures are required as a safe way to make this transfer while remaining secure. A SAFECHANGE package passer or package receiver is essential to prevent a breach in security in both exterior and interior scenarios.

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

PE PACKAGE PASSER

UL 752 Level 1-3

- Designed to pass items up to 12” x 14” x 15” (width x height x depth)
- Black laminate base is standard
- Fabricated from UL listed ballistic transparent material
- Delivered assembled and ready for installation
- Automatic door closers
- Mechanically interlocking doors

LARGE PACKAGE PASSER

UL 752 Level 1-3

- Designed to pass items up to 24” x 22” x 26” (width x height x depth)
- Mechanically interlocking vertical lifting doors
- Fabricated from UL listed ballistic transparent material
- Completely fabricated with minimal field assembly required

BULK PASSER

UL 752 Level 1-3

- Designed to handle large parcels up to 33” x 83” x 32” (width x height x depth)
- Fabricated from UL listed ballistic material
- Completely fabricated with minimal field assembly required
- Mechanically interlocking doors

STEEL PACKAGE PASSER

UL 752 Level 1-3

- Steel box construction
- Adjustable flange allows installation in walls to 12” thick
- Mechanically interlocking doors
- Delivered assembled and ready for installation
- Doors lined with ballistic material
- Exterior keyed latch included
- Optional view window

TURNSTILE PACKAGE PASSER

UL 752 Level 1-3

- Available in 24” x 18” or 24” x 24” sizes
- Delivered assembled and ready for installation
- Fabricated from UL listed ballistic transparent material

SHURESAFE SECURITY DRAWER

UL 752 Level 3

- Internal speaker included
- Removable deal tray for passing larger objects
- Interior or exterior applications
- Optional intercom

SAFECHANGE bullet-resistant passers are the best way to protect your staff from ballistic threats during the exchange of items.

For more information about SAFECHANGE products visit our website at www.insulgard.com or contact us at 800-624-6315.

PASS THRU TRAYS

Insulgard offers a range of SAFECHANGE currency trays or pass-thru trays for highly secure exchanges. Available in countertop and recessed options, our stainless steel finish deal trays easily install into a fixed security barrier or window providing secure passage of documents or money. The countertop deal tray requires no counter-cut out, and is installed simply on your existing work surface.

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

COUNTER TOP DEAL TRAY

- No counter cut-out required
- Brushed stainless steel finish
- Standard widths of 12”, 14”, or 16” wide x 2” high x 8” deep
- Custom sizes available

COUNTER RECESSED DEAL TRAY

- Installed flush with countertop
- Brushed stainless steel or solid surface finish
- Standard widths of 12”, 14”, or 16” wide x 1 1/2” high x 8” deep
- Custom sizes available

COUNTER RECESSED WITH BULLET TRAP DEAL TRAY

- Offers same features as the Counter Recessed Deal Tray including bullet traps made of UL 752 Level 1-3 ballistic material

SAFECHANGE products are tested to UL752 standards by Underwriters Laboratory and listed as such.

For more information about SAFECHANGE products visit our website at www.insulgard.com or contact us at 800-624-6315.

ACCESSORIES

Insulgard offers several SAFECHANGE accessories for use in our counterline systems or your existing workspace, including overhead louvers and speak-thru systems.

SAFECHANGE™
BULLET RESISTANT TRANSACTION WINDOWS & BARRIERS

OVERHEAD LOUVERS

- Allows air flow – does not restrict heating and cooling systems
- Provides physical attack resistance above counterline barrier systems
- Fabricated and ready for installation
- Hardware included
- Available between 6” and 36” in height

BACKER PLATE SPEAK-THRU

- Round, square, or rectangular options
- Made of transparent ballistic material
- Excellent sound transmission
- Acrylic spacers and hardware included

STAINLESS STEEL ROUND SPEAK-THRU

- Available as interior or exterior model
- Adjustable to fit various glazing thicknesses
- Requires 5-inch diameter hole
- UL 752 Level 3 or non-rated unit available

SAFECHANGE products are tested to UL752 standards by Underwriters Laboratory and listed as such.

For more information about SAFECHANGE products visit our website at www.insulgard.com or contact us at 800-624-6315.

WIND & IMPACT RESISTANT WINDOW SYSTEM

Insulgard's STORMDEFEND TTH600 Window system has been tested and certified by Underwriters Laboratory to meet ICC 500-20 and FEMA P-361–2021 requirements for use in a tornado or hurricane safe room in the 250mph wind zone. As a part of this certification smallest and largest sizes of multiple configurations of windows have been tested and listed by UL. The TTH600 window system also meets UL752 Level 3 for bullet resistance.

STORMDEFEND™
STORM SHELTER WINDOWS & DOORS

STORMDEFEND TTH600

This window system is designed and certified for use in tornado and hurricane safe rooms/storm shelters meeting FEMA P361-2021 and ICC 500-20 standards. It is critical this system be used in conjunction with equivalent performance substrate/wall areas.

FRAME DIMENSIONS

- 6” framing system
- Head, jamb, sill 2 1⁄2”x 6”
- Mullion and intermediate horizontal members 3 1⁄4” x 6”

AVAILABLE CONFIGURATIONS

- Single Lite – UL Certification ZHLA.52
- Ribbon Window with Vertical or Horizontal Mullions – UL Certification ZHLA.55
- Four-Lite with Horizontal and Vertical Mullion – UL Certification ZHLA.56

CONSTRUCTION

- Fasteners to be stainless steel type 302 or 304
- Interior/Exterior glazing gaskets to be EPDM sponge and wedge
- All joints and connections will be tight, providing hairline joints and true alignment of adjacent members.
- Weep design to allow for water to exit the exterior at the sill
- Anchors to be fully concealed

FEATURES

- UL Listed and labeled in accordance with ICC 500-20
- Glazed with 2” thick TOR-GARD® 30 IG glass
- Thermally broken framing system
- UL Level 3 bullet resistance
- Anodized or painted finishes
- Completely fabricated and shipped fully assembled for ease of installation
- Job specific anchorage requirements provided
- Designed for conventional installation and glazing methods

TESTING / CERTIFICATION

- Tested and certified by UL to meet ICC 500-20 and FEMA P-361-2021 requirements for use in tornado and hurricane safe rooms and shelters, including in the 250mph wind zone. UL Certification ZHLA.52.
- Tested by UL for bullet resistance meeting UL 752 Level 3. Proof of testing can be found at www.ul.com under on-line listings.
- Thermal analysis conducted by UL utilizing NFRC test methods including ANSI/ NFRC 100-2014, ANSI/NFRC 200-2014, NFRC 500-2014 and Therm 7 / Windows7 NFRC. Results available upon request.

APPLICATIONS

- Schools
- Law enforcement facilities
- Fire and rescue facilities
- Emergency operations centers
- Community shelters
- Corporate headquarters
- Storm shelters
- Safe rooms

WIND & IMPACT RESISTANT DOOR SYSTEM

Insulgard's STORMDEFEND TTH350 door system has been tested and certified by Underwriters Laboratory to meet ICC 500-20 and FEMA P-361–2021 requirements for use in tornado and hurricane safe rooms in the 250mph wind zone.

As part of this certification, the largest and smallest single and pairs of doors have been tested and listed by UL. The TTH350 doors also meet UL752 level 3 for bullet resistance.

STORMDEFEND™
STORM SHELTER WINDOWS & DOORS

TTH350 DOORS

This door system is designed and tested for use in tornado and hurricane safe rooms/storm shelters meeting FEMA P361-2021 and ICC 500-20 standards. It is critical this system be used in conjunction with equivalent performance substrate/wall areas.

DIMENSIONS

- Top rail: 7" X 2⅜"
- Bottom rail: 8½"x 2⅜"
- Glazing stops: 1¾" face
- Medium stile: 5" x 2⅜"
- Mid Rail: 4½" x 2⅜"
- Door Frame: 3¼" x 6"

AVAILABLE CONFIGURATIONS

- Single Min Size 3' x 7', Max Size 3'6" x 8'
- Pairs Min Size 6' x 7', Max Size 7' x 8'

FEATURES

- UL Listed and labeled in accordance with ICC 500-20
- Glazed with 1.286" TOR-GARD® 30 glazing
- UL Level 3 bullet resistance
- Anodized or painted finishes
- Completely fabricated and shipped fully assembled for easy installation
- Job specific anchorage requirements provided
- Designed for conventional installation and glazing methods

REQUIRED HARDWARE

- Sargent FM8713 Non-Electrified Surface Vertical Rod Exit Device
- Sargent 351 Surface Door Closer
- Pemko FMSLF Continuous Gear Hinge
- Pemko 172A Threshold
- Pemko 18061 Door Bottom Sweep
- Rockwood BFLG1050 Latch Guard Cover
- Sargent HC980 Removable Mullion (pairs)

CONSTRUCTION

- Internal fasteners to be stainless steel type 18-8
- Interior/Exterior glazing gaskets to be EPDM sponge and wedge
- All joints and connections will be tight, providing hairline joints and true alignment of adjacent members
- Anchors to be fully concealed

OPTIONAL HARDWARE

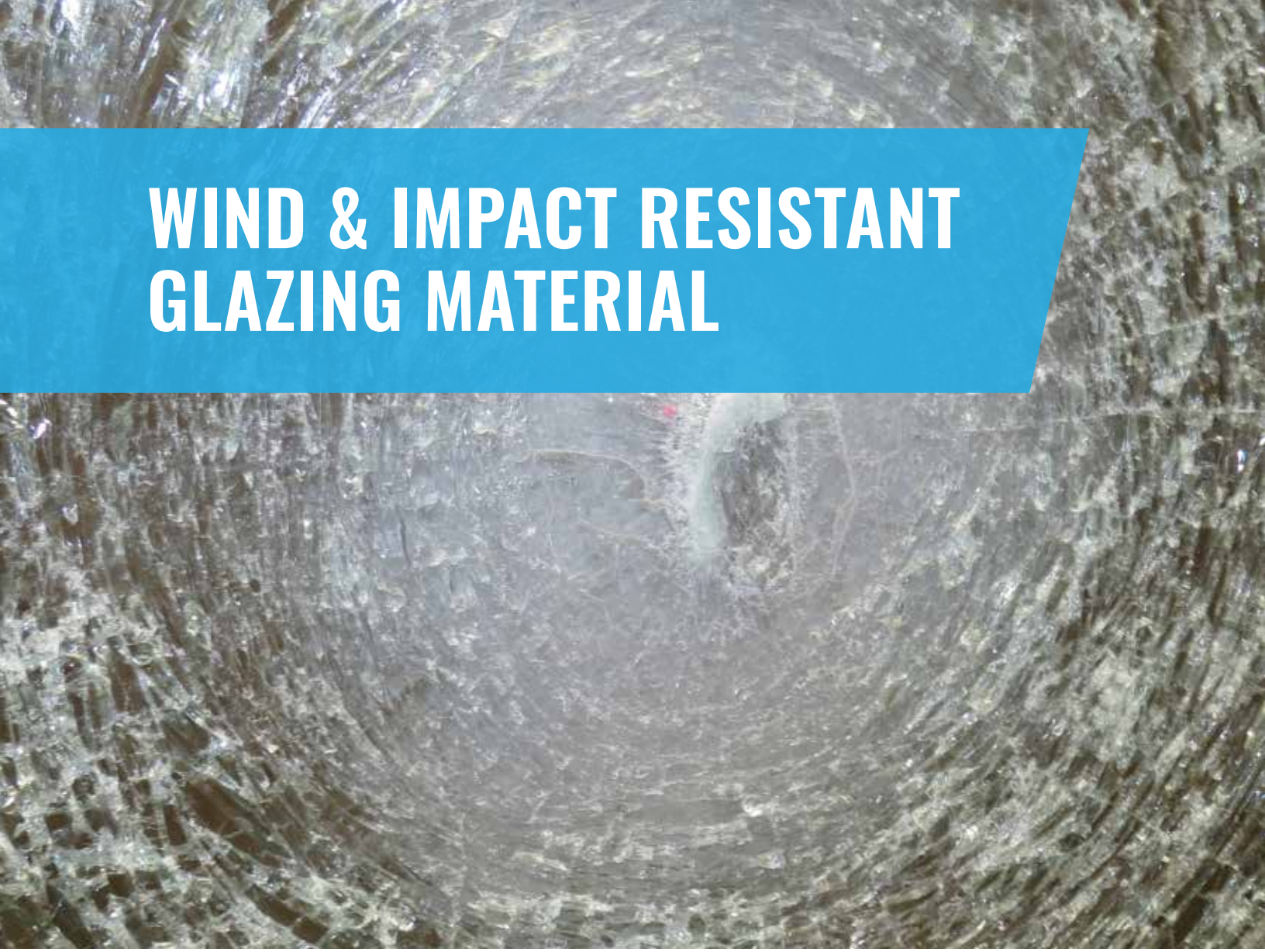
- Sargent FM8774 Electrified Surface Vertical Rod Exit Device with…
- 306 Auxiliary Control
- Electrolynx Harness QC-C1500P Hinge to Power) Electrolynx Harness QC-C012 (Bar to Hinge)
- Securitron DPS-M-GY Door Position Switch
- Norton 6061 Auto Operator

TESTING / CERTIFICATION

- Tested and certified by UL to meet ICC 500-20 and FEMA P-361-2021 requirements for use in tornado and hurricane safe rooms and shelters including in the 250mph wind zone. UL Certification ZHLA.71
- Tested by UL for bullet resistance meeting UL752 Level 3. Proof of testing can be found at www.ul.com under on-line listings.

APPLICATIONS

- Schools
- Law enforcement
- Fire and rescue facilities
- Emergency operations centers
- Community shelters
- Corporate headquarters
- Storm shelters
- Safe rooms



WIND & IMPACT RESISTANT GLAZING MATERIAL

As a part of our STORMDEFEND tested assemblies Insulgard offers innovative glazing materials that can withstand the wind pressures and debris impacts associated with an EF-5 tornado.

Insulgard's TOR-GARD® 30 and TOR-GARD® 30 IG glazing makeups which are incorporated into the TTH350 door system and TTH600 window system have been tested and certified by UL to meet ICC 500-20 and FEMA P-361 2021 requirements for use in tornado and hurricane safe rooms.

STORMDEFEND™
STORM SHELTER WINDOWS & DOORS

TOR-GARD® 30 IG

TOR-GARD® 30 IG glazing was tested in the STORMDEFEND TTH600 window system which is certified, listed and labeled for use in tornado and hurricane safe rooms/storm shelters meeting FEMA P361-2021 and ICC 500-20 standards.

TECHNICAL DATA

- Nominal Thickness 2.000”
- Thickness Tolerance 1.873” / 2.125”
- Maximum sheet size 60” x 96”
- Weight 13.76 lbs/sqft
- Standard with Pilkington Low E Coating Light transmittance 55%
- U-Value .27
- Solar Heat Gain Coefficient .57
- Shading Coefficient .66

PERFORMANCE TESTING

- FEMA P361-2021
- ICC 500-20
- UL Level 3 Bullet Resistance

INSTALLATION

- Glazing to be installed in accordance with the guidelines set forth in the current edition of the GANA Glazing and Sealant Manuals.

WARRANTY (SHORT VERSION)

- TOR-GARD® series glass clad polycarbonate is warranted against defects in material and workmanship resulting in edge separation or delamination for a period of five (5) years from date of manufacture. (See Warranty Sheet for complete warranty information and specifications).

TOR-GARD® 30

TOR-GARD® 30 glazing was tested in the STORMDEFEND TTH350 door system which is certified, listed, and labeled for use in tornado and hurricane safe rooms/storm shelters meeting FEMA P361-2021 and ICC 500-20 standards.

TECHNICAL DATA

- Nominal Thickness 1.286”
- Dimensional Tolerance +/- .250” Maximum sheet size 60” x 96”
- Weight 10.84 lbs/sqft
- Light transmittance 65%
- U-Value .58
- Solar Heat Gain Coefficient .67 Shading Coefficient .78

PERFORMANCE TESTING

- FEMA P361-2021
- ICC 500-20
- UL752 Level 3 Bullet Resistance

INSTALLATION

- Glazing to be installed in accordance with the guidelines set forth in the current edition of the GANA Glazing and Sealant Manuals.

WARRANTY (SHORT VERSION)

- TOR-GARD® series glass clad polycarbonate is warranted against defects in material and workmanship resulting in edge separation or delamination for a period of five (5) years from date of manufacture. (See Warranty Sheet for complete warranty information and specifications).

GUIDANCE FOR COMMUNITY AND RESIDENTIAL SAFE ROOMS

FEMA P-361, APRIL 2021

TEST MISSILE CRITERIA FOR COMMUNITY TORNADO SAFE ROOMS

(REFERENCE: ICC 500 SEC 305.1.1)

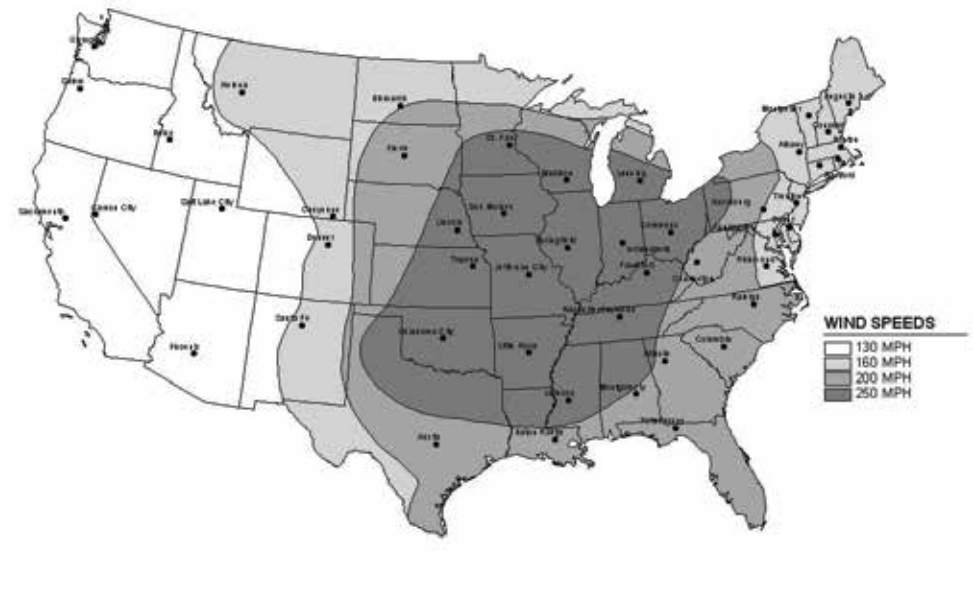
For tornado hazards, the safe room missile impact criteria for large missiles vary with the safe room design wind speed. Specifically, the representative missile for the missile impact test for all components of the building envelope of a safe room should be a 15-pound 2x4 (dimensional lumber) stud. The speed of the test missile impacting vertical envelope surfaces varies from 100 mph to 80 mph, and the speed of the test missile impacting horizontal surfaces varies from 67 mph down to 53 mph. Table B3-3 presents the missile impact speeds for the different wind speeds applicable for tornado safe room designs.

TABLE B3-3. TORNADO MISSILE IMPACT CRITERIA

SAFE ROOM DESIGN WIND SPEED	MISSILE SPEED (OF 15-POUND 2X4 BOARD MEMBER) AND SAFE ROOM IMPACT SURFACE
250 MPH	Vertical Surfaces: 100 mph / Horizontal Surfaces: 67 mpg
200 MPH	Vertical Surfaces: 90 mph / Horizontal Surfaces: 60 mpg
160 MPH	Vertical Surfaces: 84 mph / Horizontal Surfaces: 56 mpg
130 MPH	Vertical Surfaces: 80 mph / Horizontal Surfaces: 53 mpg

Note: Walls, doors, and other safe room envelope surfaces inclined 30 degrees or more from the horizontal should be considered vertical surfaces. Surfaces inclined less than 30 degrees from the horizontal should be treated as horizontal surfaces.

B3-1. SAFE ROOM DESIGN WIND SPEED ZONES FOR TORNADOES



Notes:

1. Values are nominal three-second gust wind speeds in miles per hour at 33 feet above ground for Exposure Category C.
2. Multiply miles per hour by 0.447 to obtain meters per second.
3. Location-specific storm shelter design wind speeds shall be permitted to be determined using the ATC Hazards by Location website https://hazards.atcouncil.org/.

TEST MISSILE CRITERIA FOR COMMUNITY HURRICANE SAFE ROOMS

(REFERENCE: ICC 500 SEC 305.1.2)

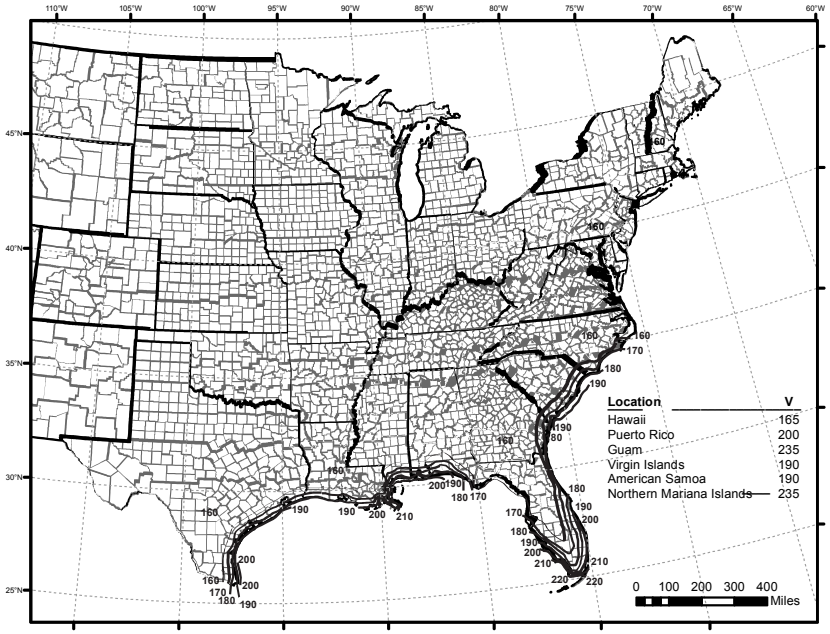
For hurricane hazards, the safe room debris impact criteria for large missiles are a function of the hurricane safe room design wind speed. Specifically, the representative missile for the debris impact test for all components of the building envelope of hurricane safe rooms should be a 9-pound 2x4. The speed of the test missile impacting vertical safe room surfaces should be a minimum of 0.50 times the safe room design wind speed. The speed of the test missile impacting horizontal surfaces should be 0.10 times the safe room design wind speed. Table B3-4 presents the missile impact speeds for the different wind speeds applicable for hurricane safe room designs.

TABLE B3-4. HURRICANE MISSILE IMPACT CRITERIA

SAFE ROOM DESIGN WIND SPEED	MISSILE SPEED (OF 9-POUND 2X4 BOARD MEMBER) AND SAFE ROOM IMPACT SURFACE
235 MPH	Vertical Surfaces: 118mph / Horizontal Surfaces: 24 mpg
230 MPH	Vertical Surfaces: 115 mph / Horizontal Surfaces: 23 mpg
220 MPH	Vertical Surfaces: 110 mph / Horizontal Surfaces: 22 mpg
210 MPH	Vertical Surfaces: 105 mph / Horizontal Surfaces: 21 mpg
200MPH	Vertical Surfaces: 100mph / Horizontal Surfaces: 20 mpg
190 MPH	Vertical Surfaces: 95 mph / Horizontal Surfaces: 19 mpg
180 MPH	Vertical Surfaces: 90 mph / Horizontal Surfaces: 18 mpg
170 MPH	Vertical Surfaces: 85 mph / Horizontal Surfaces: 17 mpg
160 MPH	Vertical Surfaces: 80 mph / Horizontal Surfaces: 16 mpg

Note: Walls, doors, and other safe room envelope surfaces inclined 30 degrees or more from the horizontal should be considered vertical surfaces. Surfaces inclined less than 30 degrees from the horizontal should be treated as horizontal surfaces.

B3-2. SAFE ROOM DESIGN WIND SPEEDS FOR HURRICANES



SOURCE: ICC 500 (2020) FIGURE 304.2(2);
Used with permission - Part B

Notes:

1. Values are nominal 3-second gust wind speeds in miles per hour at 33 feet above ground for Exposure C.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Multiply miles per hour by 0.447 to obtain meters per second.
5. Location-specific storm shelter design wind speeds shall be permitted to be determined using the ATC Hazards by Location website https://hazards.atcouncil.org/.

FORCED ENTRY GLAZING MATERIAL

Insulgard Security Products offers a line of FORCEPROTECT glazing products that are designed and tested to protect against various levels of forced entry. Applications for these products including retail establishments, Department of Corrections, financial institutions, and government facilities. Anywhere that requires some level of protection against attack can benefit from the use of our FORCEPROTECT products.

FORCEPROTECT™
FORCED ENTRY RESISTANT GLASS

LEXGARD™

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
MPC375	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 30 min forced entry; ASTM F1915 Security Grade 3; ASTM F1233 Class 3	LEXGARD™ Laminated Polycarbonate	0.370 in	2.3 lbs/sq ft
MPC500	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 60 min forced entry; ASTM F1915 Security Grade 2; ASTM F1233 Class 3	LEXGARD™ Laminated Polycarbonate	0.500 in	3.1 lbs/sq ft
RC750	H.P. White HPW TP-0500.02 Forced Entry Level 3; WMFL 60 min forced entry; ASTM F1915 Security Grade 1; ASTM F1233 Class 4	LEXGARD™ Laminated Polycarbonate	0.750 in	4.6 lbs/sq ft
MP1000	UL 752 Level 2; H.P. White HPW-TP-0500.02 Forced Entry Level 4; ASTM F1233 Class 5	LEXGARD™ Laminated Polycarbonate	1.030 in	6.4 lbs/sq ft
SP1250	UL 752 Level 3; H.P. White HPW-TP-0500.02 Forced Entry Level 5; ASTM F1233 Class 5; ASTM F1915 Grade 1	LEXGARD™ Laminated Polycarbonate	1.240 in	7.7 lbs/sq ft

SURE-GARD®

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
ICGCP716	H.P. White HPW-TP-0500.02 Forced Entry Level 1	SURE-GARD® Glass-Clad Polycarbonate	0.468 in	4.4 lbs/sq ft
ICGCP916	H.P. White HPW-TP-0500.02 Forced Entry Level 1; ASTM F1915 Security Grade 4	SURE-GARD® Glass-Clad Polycarbonate	0.570 in	5.1 lbs/sq ft
ICGCP1116	H.P. White HPW-TP-0500.02 Forced Entry Level 2	SURE-GARD® Glass-Clad Polycarbonate	0.725 in	5.9 lbs/sq ft
ICGCP1216	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 30 min forced entry; ASTM F1915 Security Grade 3	SURE-GARD® Glass-Clad Polycarbonate	0.721 in	6.1 lbs/sq ft
ICGCP1316	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 30 min forced entry	SURE-GARD® Glass-Clad Polycarbonate	0.754 in	6.3 lbs/sq ft
ICGCP1516	H.P. White HPW-TP-0500.02 Forced Entry Level 3; WMFL 60 min forced entry; ASTM F1915 Security Grade 2	SURE-GARD® Glass-Clad Polycarbonate	0.864 in	7.5 lbs/sq ft
ICGCP2416	WMFL 60 min forced entry; ASTM F1915 Security Grade 1	SURE-GARD® Glass-Clad Polycarbonate	1.230 in	10.1 lbs/sq ft

FIRE-GARD®

PRODUCT	RATING	MATERIAL	NOMINAL THICKNESS	WEIGHT
ICGCP916WW	H.P. White HPW-TP-0500.02 Forced Entry Level 1; UL 9 Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	0.820 in	7 lbs/sq ft
ICGCP916WW90	H.P. White HPW-TP-0500.02 Forced Entry Level 1; UL 10C Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	0.820 in	7 lbs/sq ft
ICGCP1216WW	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 30 min forced entry; ASTM F1915 Security Grade 3; UL 9 Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	0.950 in	9.5 lbs/sq ft
ICGCP1216WW90	H.P. White HPW-TP-0500.02 Forced Entry Level 2; WMFL 30 min forced entry; ASTM F1915 Security Grade 3; UL 10C Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	0.950 in	9.5 lbs/sq ft
ICGCP2416WW	WMFL 60 min forced entry; ASTM F1915 Security Grade 1; UL 9 Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	1.261 in	10.1 lbs/sq ft
ICGCP2416WW90	WMFL 60 min forced entry; ASTM F1915 Security Grade 1; UL 10C Fire Test	FIRE-GARD® Glass-Clad Polycarbonate	1.261 in	10.1 lbs/sq ft

AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM F1233-08) TESTING SEQUENCE

	SEQUENCE				
TEST IMPLEMENTS	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
BLUNT IMPACTING (IMPACTS)					
Sledge Hammer (25)	N/A	5	10,16	19,22,27	30,33,36,39
4” (10cm) Diameter Pipe/ Sledge (25)	N/A	N/A	9	18	29
Ram(10)	N/A	N/A	8	17	28
Ball-peen Hammer (10)	1	2	N/A	N/A	N/A
SHARP TOOL (IMPACTS)					
Ripping Bar (10)	N/A	7	12	23	N/A
Chisel/Hammer (25)	N/A	N/A	13	25	35,40
Angle Iron/Sledge (25)	N/A	N/A	15	N/A	N/A
1 1/2” (4cm) Diameter Pipe Sledge (25)	N/A	3	N/A	N/A	N/A
Fire Axe (25)	N/A	N/A	N/A	24	32,38
Wood Splitting Maul (25)	N/A	N/A	N/A	21	34,41

AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM F1233-08) TESTING SEQUENCE

	SEQUENCE				
TEST IMPLEMENTS	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
THERMAL STRESS (MINUTES)					
Extinguisher, CO2 (1)	N/A	4	N/A	N/A	N/A
Propane Torch (5)	N/A	6	11	20	31
CHEMICAL DETERIORATION (AMOUNT)					
Gasoline (1/2 pint) (1/4 liter)	N/A	N/A	14	N/A	N/A
Acetone (1/2 pint) (1/4 liter)	N/A	N/A	N/A	26	37
TOTAL FORCED ENTRY SEQUENCES	**1**	**7**	**16**	**27**	**41**

AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM F1915-05)

SECURITY GRADE	TIME RATING	SEQUENCE 1 BLUNT IMPACTOR	SEQUENCE 2 SHARP IMPACTOR	SEQUENCE 3 BLUNT IMPACTOR	TOTAL IMPACTS
1	60 Mins.	150	300	150	600
2	40 Mins.	100	200	100	400
3	20 Mins.	50	100	50	200
4	10 Mins.	25	50	25	100

HP WHITE-TP-0500.03 (FORCED ENTRY TEST PROCEDURE) TESTING SEQUENCE

	LEVEL I	LEVEL II	LEVEL III	LEVEL IV	LEVEL V
TEST IMPLEMENTS: BLUNT IMPACTING (IMPACTS)					
Sledgehammer/Wedge (25)	1,4	8, 10	18, 24, 26	29, 32, 39	42, 45, 48, 51, 54
4" Diameter pipe/Sledge (25)	2	7	17	28	41
Ram (10)	N/A	6	16	27	40
Pinch Bar (a)					

(a) Pinch or ripping may be substituted for any portion of Blunt Impacting Sequence at rate of 1 minute for each 5 impacts (Test Director Option)

(b) Additional sequences of one minute intervals in conjunction with all Sharp Tool Sequences except sequences 5 and 15 (re: Test Protocol HPW-TP-0500.03 paragraphs 3.5.7 and 3.5.8)

	LEVEL I	LEVEL II	LEVEL III	LEVEL IV	LEVEL V
TEST IMPLEMENTS: SHARP TOOL (IMPACTS)					
Chisel/Hammer (25)	N/A	12	21, 23	33, 36, 38	47, 52
Angle Iron/Sledge (25)	N/A	13	22	N/A	N/A
1 1/2" Diameter Pipe/Sledge (25)	5	N/A	N/A	N/A	N/A
Fire Axe (25)	N/A	N/A	N/A	35	44, 50
Wood Maul (25)	N/A	N/A	N/A	21	34, 41
Compass Saw (b), Hacksaw (b)					

HP WHITE-TP-0500.03 (FORCED ENTRY TEST PROCEDURE)
TESTING SEQUENCE (CONTINUED)

	LEVEL I	LEVEL II	LEVEL III	LEVEL IV	LEVEL V
TEST IMPLEMENTS: THERMAL STRESS (MINUTES)					
Extinguisher, CO2 (1)	3	9	N/A	N/A	N/A
Propane Torch (5)	N/A	11	19	30	N/A
Acetylene Torch (5)	N/A	N/A	N/A	N/A	43
TEST IMPLEMENTS: CHEMICAL DETERIORATION (AMOUNT)					
Gasoline (8 oz)	N/A	14	N/A	N/A	N/A
Windshield Washer (8 oz)	N/A	N/A	25	34	N/A
Acetone (8 oz)	N/A	N/A	N/A	37	49
TOTAL FORCED ENTRY SEQUENCES	**5**	**15**	**26**	**39**	**54**

F.WALKER, MCGOUGH, FOLTZ AND LYERIA (WMFL) TEST PROCEDURE (BALLISTIC/ PHYSICAL/FLAME ATTACK)

ATTACK SEQUENCE SUMMARY	LEVEL I BALLISTIC AND 60 MINUTES PHYSICAL ATTACK	LEVEL II 60 MINUTES PHYSICAL ATTACK	LEVEL III 30 MINUTES PHYSICAL ATTACK
.44 Magnum, 240 Grain	25 rounds	N/A	N/A
2 lb. Claw Hammer	5 minutes	5 minutes	5 minutes
10 lb. Sledgehammer	5 minutes	5 minutes	5 minutes
Cold Chisel/Screwdriver	5 minutes	5 minutes	5 minutes
1-1/2" x 3' pipe with 2"x 2" x 3' angle iron	5 minutes	5 minutes	N/A
#8 Reinforcing Bar, 3' long	5 minutes	5 minutes	N/A
4" x 4" x 3' Long (oak) leg	5 minutes	5 minutes	N/A
Fire extinguisher (chemical dry)	5 minutes	5 minutes	5 minutes
10 lb. Sledgehammer	5 minutes	5 minutes	N/A
Clothes Hanger/Knife, Heated 10" Blade 1/4" Thick	5 minutes	5 minutes	N/A
Propane Burner, (2,200°F)	5 minutes	5 minutes	5 minutes
4 lb. Hammer	5 minutes	5 minutes	5 minutes
3" x 3' Pipe with 1" x 1" x 3' Angle Iron	5 minutes	5 minutes	N/A

INSULGARD
SECURITY PRODUCTS

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