



**AT/FP**

**BLAST MITIGATION**

**BULLET RESISTANCE**

**FORCED ENTRY RESISTANCE**





# WINDOW GARD® 9.X Series Windows

## 'TO PROTECT AND SECURE LIFE AND PROPERTY'

### Description

The WindowGard 9.X Series Windows are protecting lives worldwide against terrorist attacks or accidental explosions. Our blast mitigating solutions that combine Ballistic and FE/BR Resistance upon request protects the best. Based on patented Energy Absorbing Technology, it enables all components of the blast resistant windows to absorb the energy released from the explosion. The blast mitigation design is lighter, user-friendly, more cost effective, absorbs up to 90% of the energy through deformation of special anchors and results in the 'Highest Blast Protected Windows' available.

The WindowGard 9.X Series Windows are specifically designed for the highest level of protection while maintaining functionality, ease of installation and aesthetic appearance. The product is an ideal solution for new construction as well as replacement windows in retrofit applications.

### Features

- Blast levels according EN 13123 -1/-2 : EPR1-EPR4, EXR1-EXR5 (and beyond)
- GSA Performance Condition: 2-3 , Protection Level: High-Very High
- Material: Aluminium / Steel
- Profiles: Thermally broken aluminium / steel
- Finish: Polyester Powder Coating (PPC) / Anodized / Galvanized / other
- Configurations: Fixed, Tilt, Tilt & Turn, Awning, Sliding, custom
- Laminated glass-glass configuration or glass-polycarbonate (tints on request)

### Protection

Blast Resistance: **EPR1-EPR4** and **EXR1-EXR5** (and beyond)  
Ballistic Resistance: **FB-4** to **FB-7**  
EN Forced Entry Protection: **RC-3** to **RC-5** (6 upon request)  
DOS Forced Entry/Ballistic Resistance: **5, 15 min. FEBR**

### Compliance

- Complies with the test criteria of the US General Services Administration (GSA) Test Protocol GSA-TS01-2003 "Standard Test Method for Glazing and Window Systems Subjected to Dynamic Overpressure Loadings."
- Complies with the test criteria of the US Department of Defense (DoD) Anti-terrorism standards: UFC 4-010-01.
- Complies with American Society for Testing and Materials (ASTM) standard: F1642-04
- Complies with EN standards: 13123 -1/-2, 1627, 1522-1063
- Complies with AAAMA/WDMA/CSA/101/I.S.2/A440-2

*"superior blast protection"*  
*" - ... custom designs."*  
*" - ... best in the industry."*

Unrivalled technology:  
Energy Absorbing technology providing the highest level of combined protection.





# WINDOW GARD® BlastLine Catch System

## ‘TO PROTECT AND SECURE LIFE AND PROPERTY’

### Description

Standard glazing that is subject to violent explosive forces such as terrorist attacks and industrial explosions, will result in lethal flying glass fragments entering a room. When glass is solely treated with Safety Window Film and the blast pressure exceeds the tensile & break strength of the film, the majority of the glass shards will likely remain attached or adhered to the film as 1 sheet. Such flying glass sheets cause large numbers of serious injuries.

WINDOW GARD offers solutions that upgrade the protection performance of standard glazing and combines energy absorbing WG BlastLine Catch Systems to prevent complete glass panel/sheets from entering a room at higher blast.

### Features

In combination with Safety Window Film or laminated glass, it is designed to ‘catch’ the complete glass panels/sheets in a blast event. When the filmed or laminated glass hits the ropes, the Energy Absorbing properties enables the ‘catching’ ability and significantly increase the Protection Level.

- Safety Window Film: polyester multilayer transparent laminate
- Energy Absorbing BlastLine: Dyneema® (minimum breaking load 42kN)
- Anchoring: Omega-shape rope retaining element
- Configuration: Horizontal / Vertical custom engineering

### Protection

Blast Resistance: exceeds ISO 16933 EXV45 (E)  
Dynamic Analysis: Peak Pressure: 68 kPa, Impulse 439 kPa-ms  
Protection Level: GSA 3A, High  
Hazard Level: Low

### Custom Engineering

Depending on the blast load, the wall construction type and window opening, the WINDOW GARD® WG BlastLine Catch System can be engineered to fit any practical window opening size. Consulting us during the evaluation process will allow you to determine the correct model and configuration of the blast mitigation system and its proper installation design.

### Compliance

- Complies with the test criteria of the US General Services Administration (GSA) Test Protocol GSA-TS01-2003 “Standard Test Method for Glazing and Window Systems Subjected to Dynamic Overpressure Loadings.”
- Complies with and exceeds the test criteria of ISO 16933 EXV45 (E)
- Complies with American Society for Testing and Materials (ASTM) standard: F1642-04 / ASTM F2912



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# WINDOW GARD® 9.X Series Doors

## ‘TO PROTECT AND SECURE LIFE AND PROPERTY’

### Description

The WindowGard 9.X Series Doors are a multi-protection product. The doors can withstand Blast, Ballistic and Forced Entry threats combined in one product upon request, or can be designed for one or more of the above threats. In case of a Blast event, the door incorporates the innovative and patented Energy Absorbing System, enabling all components of the door to absorb the energy released from the blast. The result is minimal load transfer to the wall structure.

The WindowGard 9.X Series Doors can be installed either in a stand-alone mode or within a glass wall, storefront or curtain wall. In both new construction and retrofit applications, the innovative Energy Absorbing technology allows for architectural design flexibility.

### Features

- Blast levels according EN 13123 -1/-2 : **EPR1-EPR4** and **EXR1-EXR5**
- GSA Performance Condition: 2-3 , Protection Level: High-Very High
- Material: Aluminium / Steel
- Glazing: Custom to project spec
- Profiles: Thermally broken aluminium / steel
- Door Hardware: Custom to project spec
- Finish: Polyester Powder Coating (PPC) / Anodized / Galvanized / other
- Configuration: Single, double, fixed/removable center mullion, emergency egress

### Protection

Blast Resistance: **EPR1-EPR4** and **EXR1-EXR5**  
Ballistic Resistance: **FB-4** to **FB-7**  
EN Forced Entry Protection: **10 min. RC-4** (5/6 upon request)  
DOS Forced Entry/Ballistic Resistance: **5, 15, 60 min. FEBR**

### Compliance

- Complies with the test criteria of the US General Services Administration (GSA) Test Protocol GSA-TS01-2003 "Standard Test Method for Glazing and Window Systems Subjected to Dynamic Overpressure Loadings."
- Complies with the test criteria of the US Department of Defense (DoD) Anti-terrorism standards: UFC 4-010-01.
- Complies with American Society for Testing and Materials (ASTM) standard: F1642-04
- Complies with EN standards: 13123 -1/-2, 1627, 1522-1063
- Complies with AAAMA/WDMA/CSA/101/1.S.2/A440-2



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# WINDOW GARD® 9.X Series Facades

## 'TO PROTECT AND SECURE LIFE AND PROPERTY'

### Description

The WindowGard 9.X Series Facades are a multi-protection product. The facades can withstand Blast, Ballistic and Forced Entry threats combined in one product upon request, or can be designed for one or more of the above threats. In case of a Blast event, the facade incorporates the innovative and patented Energy Absorbing System, enabling all components of the curtain wall to absorb the energy released from the blast. The result is minimal load transfer to the wall structure.

The WindowGard 9.X Series Facades are used where curtain walls, window walls or storefronts are required. This curtain wall can be designed for any required architectural shape including arches, sloped glazing and three dimensional envelopes.

### Features

- Blast levels according EN 13123 -1/-2 : EPR1-EPR4 and EXR1-EXR5
- GSA Performance Condition: 2-3 , Protection Level: High-Very High
- Material: Aluminium / Steel
- Glazing: Custom to project spec
- Profiles: Thermally broken aluminium / steel
- Finish: Polyester Powder Coating (PPC) / Anodized / Galvanized / other
- Dimensions: Custom engineered to fit any practical rough opening size
- Optional: Concealed windows to allow for egress, smoke evacuation or ventilation

### Protection

Blast Resistance: EPR1-EPR4 and EXR1-EXR5  
Ballistic Resistance: FB-4 to FB-7  
Forced Entry Protection: RC-3 to RC-5 (6 upon request)

The Energy Absorbing mechanisms allow the aluminium members to "give" when struck by the blast pressure, therefore allow for use in a weak wall without the need for costly structural reinforcement. This curtain wall may be installed in new construction or in existing buildings.

### Compliance

- Complies with the test criteria of the US General Services Administration (GSA) Test Protocol GSA-TS01-2003 "Standard Test Method for Glazing and Window Systems Subjected to Dynamic Overpressure Loadings."
- Complies with the test criteria of the US Department of Defense (DoD) Anti-terrorism standards: UFC 4-010-01.
- Complies with American Society for Testing and Materials (ASTM) standard: F1642-04
- Complies with EN standards: 13123 -1/-2, 1627, 1522-1063
- Complies with AAAMA/WDMA/CSA/101/1.S.2/A440-2

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# PROJECT REFERENCES

## Ongoing & Completed

- Medical Clinic, Marshall Islands: Blast resistant Storefronts, Doors & Windows, USACE.
- World Bank Abuja, Nigeria: FEBR Blast Curtain Walls & Windows.
- British High Commission, Nairobi: force protection upgrades, FCDO.
- National Bank of Belgium, Zellik (NBB): Ballistic & Forced Entry rated louvers.
- Romania Campia Turzii Air Base: Blast resistant windows to Squadron Facility, USACE.
- Int. Airport: Blast Mitigation Measures detail engineering, terminal bridge & facade.
- Qatar Al Udeid Air Base: Blast resistant doors & windows, USACE.
- Belgium: Blast resistant sliding Entrance System - Brussels Airport.
- Incirlik Air Base: Blast resistant doors + wall, LJYC 16-1064, US Air Force.
- HKIA Kabul Airport: Berm Gate Guard Tower Blast & Ballistic sliding windows, NSPA NATO.
- Int. Airport: Cable Catch Systems + Anti-Shatter Films, Control Center.
- Int. Airport: Blast Vulnerability Analysis for VIP, facades, columns, slabs, roofs, bridges
- Int. Airport: Blast Vulnerability Analysis for Power Substation + Parking Deck + bridge
- Djibouti: Blast resistant windows + doors to Camp Lemonnier, US NAVFAC.
- Brunei: Blast resistant windows, Phase II to BMC Brunei Methanol Com.
- Kabul: Blast & Bullet resistant sliding windows + hatch to HKIA Base Guard Tower, NATO.
- Nigeria: Blast & Bullet resistant windows, NLNG Security Posts, Port Harcourt Head Office.
- Canada: >27.000ft<sup>2</sup> Safety Films + Anchoring Systems to Vancouver International Airport.
- Bangladesh: Gate Entry Doors + interior partitions, American Int. School Dhaka.
- Jordan: Bullet resistant curtain walls + bullet resistant doors, Kuwait Embassy.
- Kabul: FEBR & Blast resistant Doors, Louvers, Hatch for Group Office Building.
- Kabul: FEBR & Blast resistant Windows for Group Office Building.
- Ethiopia: Blast & Bullet resistant windows, Commercial Bank of Ethiopia, Addis Abeba.
- Kabul: Design & Supervision of Overwatch Security Guard Towers for Group Office Building.
- West-Africa: Blast mitigation solutions for the Embassy of Canada, Global Affairs.
- Brunei: Blast resistant windows + blast resistant double door, BMC Brunei Methanol Com.
- North-Africa: Blast mitigation solutions for the Embassy of Canada, Global Affairs.
- Greece: Blast resistant operable windows including insect screens, US NAVFAC.
- Greece: Blast + bullet resistant doors and counter windows assembly incl. trays, US NAVFAC.
- Netherlands: Bullet + Forced Entry resistant doors and windows to Community Center.
- Curaçao: Bullet resistant bank teller counters + transaction trays + intercoms, PSB Bank.
- Abuja, Nigeria: Blast + forced entry resistant windows to Swiss/DK Embassy.
- Lillestrom, Norway: Anti-Shatter Films + Anchoring Systems to Government Building.
- Jakarta, Indonesia: Blast resistant double-doors to New Australia Embassy.
- Lagos, Nigeria: Cable Catch System + Anti-Shatter Films to MoFa, Denmark.
- Curaçao: Bullet resistant windows and doors to Min. of Finance, Netherlands, Phase 2.
- St. Maarten: Forced entry resistant windows to Ministry of Interior, Netherlands.
- United Nations, Rwanda: Anti-shatter films to UNDP buildings.
- Malatya, Kurecik: Blast & Bullet resistant windows and doors to USACE - NATO.
- Curaçao: Bullet resistant windows and doors to Min. of Finance, Netherlands, Phase 1.
- Balgat, Turkey: Blast resistant windows and doors to USACE facility.
- Kabul, Afghanistan: Blast & Bullet resistant Sliding windows to Guard Towers.
- Antwerp: Blast Resistant Windows and Blast Resistant Doors to a Petro-Chemical facility.
- Oslo, Norway: Anti-Shatter Films + Anchoring Systems to Government Buildings.
- Lagos, Nigeria: Anti-Shatter Films to the VIP Airport Lounge.
- South Sudan: Blast Resistant Windows & Doors to the Government's President Offices.
- Jordan: Bullet & Forced Entry Resistant Windows to the Ministry of Security & Crisis Man.
- Royal Netherlands Embassy: Energy Absorbing Blast Windows + Cable Catch Systems
- Kabul, Afghanistan: Blast Resistant Windows to KAIA ISAF HQ's
- Kabul, Afghanistan: Bullet Resistant Sliding windows to Entry Control Point Guard Towers
- Kandahar, Afghanistan: Blast Resistant Doors to Kandahar Airfield
- Kunduz, Afghanistan: Blast resistant windows & doors to ISAF - Netherlands Forces
- Turkey: Cable Catch Systems + Anti-Shatter Films to corporate Intel HQ

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[www.windowgard-security.com](http://www.windowgard-security.com)