



**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 AAMA/WDMA/CSA/101/I.S.2/A440-2

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

Unrivalled technology:  
Advanced materials providing the highest level of combined protection.





# WINDOW GARD® 78.60 Series Windows

## 'TO PROTECT AND SECURE LIFE AND PROPERTY'

### Description

The WindowGard 78.60 Series Windows provide combined protection against **Fire** and **Blast** resistance to counter terrorist attacks or accidental explosions. Its aesthetic appearance hides the advanced technological solutions to ensure effective fire protection and blast resistance.

The aluminum frame profile system is designed for internal and external use and characterized by excellent thermal + acoustic insulation, with the possibility of adding large glazed fields and Single- and Double leaf external Door partitions in the same Series for an unified design.

The WindowGard 78.60 Series Windows are specifically designed for combined levels of protection while maintaining functionality and ease of installation. These Series are an ideal solution for new construction as well as replacement windows in retrofit applications ensuring safety & thermal efficiency.

### Features

- Blast levels according GSA and US DoD conventional standoff
- GSA Performance Condition: 2-3 , Protection Level: High-Very High
- Material: Aluminum
- Profiles: Thermally insulated
- Finish: Polyester Powder Coating (PPC) / Anodized / Spec (high corrosion res.)
- Configurations: Fixed
- Laminated glass-glass configuration (IGU, tints on request)

### Protection

Blast Resistance: **GSA Level C** and **DoD Min. Antiterrorism Std.**  
Fire Resistance: **1HR (EI60)** EN 13501-2

### Technical Specification

- Frame profile width: 78mm
- Glazing thickness: max. 49mm
- Air permeability: class 2, EN 12207
- Water tightness: class 5A, EN 12208
- Thermal insulation: Uf from 1.6 W/(m<sup>2</sup>K)
- Acoustic insulation: Rw to 41 dB
- Max. partition height: up to 4m

### Compliance & Blast Analysis Methodology

Dynamic Design Analysis Method:

- Glass response analysis to the specified blast load in accordance with ASTM F2912
- Frame response analysis to the specified blast load in accordance with ASTM F2248

• Complies with the test criteria of the US (GSA) Test Protocol GSA-TS01-2003, the ASTM F1642-04 and DoD Antiterrorism Performance according UFC 4-010-01.

- Complies in accordance with AAMA/WDMA/CSA/101/I.S.2/A440

Unrivalled technology:  
Advanced technologies and protective materials to ensure combined protection.



*"best Fire & Blast resistance"  
"uniform and aesthetic frame  
profile for windows and doors."*





# 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 AAMA/WDMA/CSA/101/I.S.2/A440-2



*"highest live blast tested"  
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Advanced materials providing the highest level of combined protection.



# 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 AAMA/WDMA/CSA/101/I.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 NAFVAC.
- 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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