



Commercial Series
Impact Resistant Windows & Doors



Blast resistant windows and doors

Terrorist threats force owners to protect property

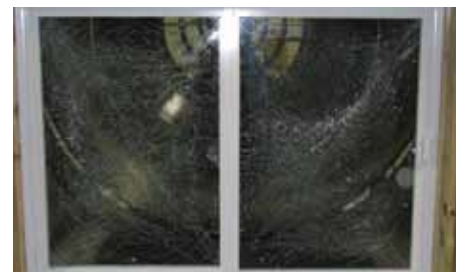


The threat from terrorist bomb explosions is one of the most difficult and challenging issues facing glazing professionals today. As the bomb has become the weapon of choice for terrorist attacks, glass fragmentation hazards have been identified as a main cause of injury in the targeted site as well as the surrounding areas. In response to this growing concern, CGI is proud to announce its Commercial Series – bomb blast product line of Casement, Project-out/Awning, Single Hung, Fixed and Horizontal Rolling Windows, as well as Swing and Sliding Glass Doors. CGI also offers pre-glazed blast resistant storefront window walls and commercial swing doors that are blast resistant. These products are available for new construction, retrofit, and historical renovation.

CGI Series 375 Horizontal Rolling window



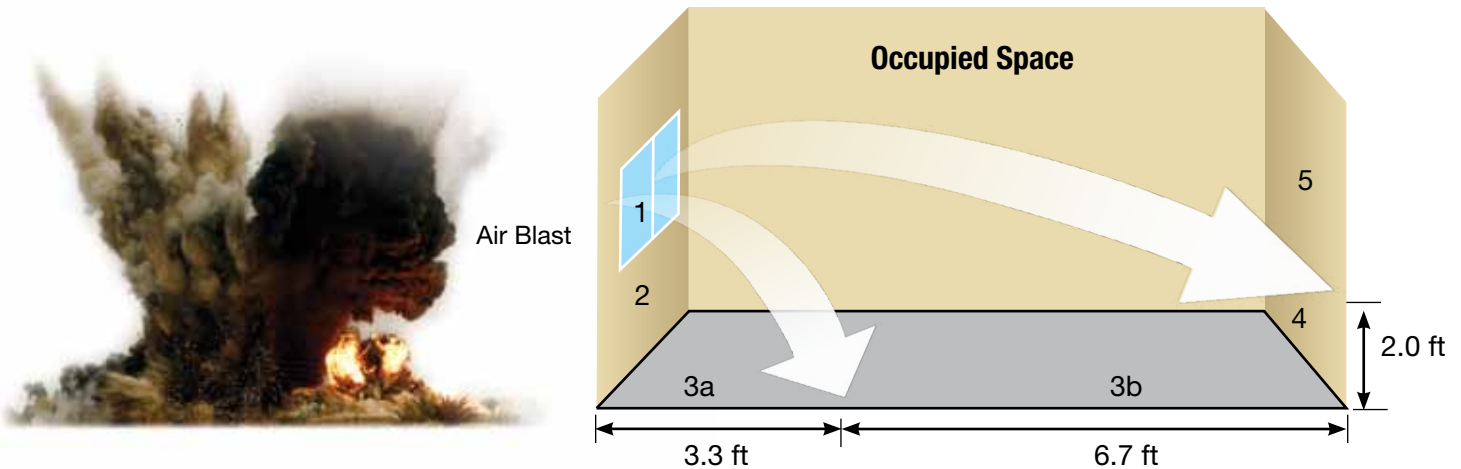
Before Blast



After 7psi/44psi ms Shock Tube Blast

**DuPont™
SentryGlas®**

GSA Performance Conditions for Window System Response



GSA Building Condition	Protection Level	Hazard Level	Description of Window Glazing Response
1	Safe	None	Glazing does not break. No visible damage to glazing or frame.
2	Very High	None	Glazing cracks but is retained by the frame. Dusting or very small fragments near sill or on floor acceptable.
3a	High	Very Low	Glazing cracks. Fragments enter space and land on floor no further than 3.3 ft. from the window.
3b	High	Low	Glazing cracks. Fragments enter space and land on floor no further than 10 ft. from the window.
4	Medium	Medium	Glazing cracks. Fragments enter space and land on floor and impact a vertical witness panel at a distance of no more than 10 ft. from the window at a height no greater than 2 ft. above the floor.
5	Low	High	Glazing cracks and window system fails catastrophically. Fragments enter space impacting a vertical witness panel at a distance of no more than 10 ft. from the window at a height greater than 2 ft. above the floor.

* In conditions 2, 3a, 3b, 4 and 5, glazing fragments may be thrown to the outside of the protected space toward the detonation location.

CGI Blast Resistant Windows and Doors — Supported by test report

Product	Series	Frame Depth	Tested Size	Blast Pressure Phase Impulse - (psi)	Positive Phase Impulse (psi-msec)	Testing Protocols	GSA Condition	ASTM Hazard
Casement	238	2 3/8"	37" x 63"	6.9	46	ASTM 1642-04 GSA TS01-2003	2	Minimal
Single Hung	360	3 5/8"	48" x 66"	6.8	45	ASTM 1642-04 GSA TS01-2003	2	Minimal
Horizontal Rolling	375	3 3/4"	66" x 48"	7	44	ASTM 1642-04 GSA TS01-2003	2	Minimal
Fixed	238	2 3/8"	48" x 66"	6.5	43	ASTM 1642-04 GSA TS01-2003	2	Minimal
Fixed	410	4 1/8"	60" x 84"	7.1	46	ASTM 1642-04 GSA TS01-2003	2	Minimal
Swing Door	450	4 5/8"	84" x 84"	6.9	48	ASTM 1642-04 GSA TS01-2003	2	Minimal
Sliding Glass Door	560	6 1/2"	84" x 84"	6.8	44	ASTM 1642-04 GSA TS01-2003	2	Minimal

Contact CGI for additional specification and project support regarding blast resistant products and options.



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