



Hygard® EX525 sheet

Blast resistant

Hygard® EX525 explosion resistant glazing is designed and engineered to meet and exceed current GSA and Department of Defense government standards for blast resistant glazing. Glazed monolithically or as the interior lite in dual glazed or IGU system with glass, Hygard EX525 is suitable for commercial and government window applications requiring the low to medium levels of transparent security protection against defined pressure loads and shock waves.

Applications

Government buildings, embassies, military buildings/facilities, chemical plants, airports, mass transit terminals, nuclear plants, power generation facilities, federal courthouse and 911 emergency centers

Regulatory code compliance and certifications

Miami-Dade NOA #12-0605.50

Florida Building Code 2010

Typical Properties

Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	-	1.2
Chemical Resistance	ASTM D 1308	-	Pass
Poisson's Ratio	ASTM E 132	-	0.38
OPTICAL			
Light Transmission @ 0.500"	ASTM D 1003	%	83
Haze	ASTM D 1003	%	<1
Distortion	C 1652	%	<1
SOUND TRANSMISSION			
Sound Transmission Class	ASTM E 90	dB	34
Outdoor/Indoor Sound Attenuation	ASTM E 1332	dB	30
MECHANICAL			
Tensile Strength, Break	ASTM D 638	psi	,500
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Izod Impact Strength, Notched @ 0.125"	ASTM D 256	ft:lbs/in	16
Izod Impact Strength, Unnotched @ 0.125"	ASTM D 256	ft:lbs/in	60 (no failure)
Instrumented Impact @ 0.125"	ASTM D 3763	ft:lbs	>46
Taber Abrasion, 100 Cycles CS-10F	ASTM D 1044		
Delta Haze		%	2
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10 ⁻⁵
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
FLAMMABILITY			
Miami-Dade County-Building Code Compliance	NOA #10-0329.03	Burn rate class	CC-1
Ignition Temperature, Self	ASTM D 1929	°F	890
Ignition Temperature, Flash	ASTM D 1929	°F	800

Physical Performance Data

Performance	Standard / Test Method	Protection Level
Blast Resistance EX500* 6 psi / 42 psi-msec	UFC 4-010-01 ASTM F 1642 GSA / ISC - TS01	No break Condition 1
Blast Resistance EX500 System ** 10 psi / 89 psi-msec	UFC 4-010-01 ASTM F 1642 GSA / ISC - GSA-TS01	No hazard Condition 2
Containment / Forced Entry	H.P. White TP 0500.03	Level 1 Sequence 8
Forced Entry and Containment	ASTM F 1915 ASTM F 1233-08	Grade 3 Class 2 Body Passage
Flammability	International Building Code	CC1

*Monolithic

**Dual Glazed System with Glass

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Glazing recommendations

EX525 is one component in a blast resistant window and must be modeled and tested in structural framing which is designed and approved for specified government blast pressure levels and impulses.

- Properly size material thickness based on window aspect ratio
- Glazing bite – recommended minimum of 1-1/2"
- Rabbet depth to allow bite + material expansion (approx. 1/16"/ft.)
- Cut and fabricate Hygard EX525 with approved equipment and techniques
- Utilize compatible structural sealants, gaskets, tapes, and setting blocks
- Approved structural frame design rated for the appropriate blast load
- Anchor type
- Computer modeling
- Mockup testing and engineering – industry standards are either shock tube or live explosives open arena testing
- Following recommended cleaning procedures per Covestro technical manual
- Remove protective masking
 - after the glazing operations are completed but not before other trades have completed their work and cleanup
 - before prolonged exposure to direct sunlight, moisture, and high temperatures

NOTE: Consult Covestro architectural manual for additional information.

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