Testing and Certifications

FALL PROTECTION
OSHA 29 CFR
In this test, a 200 lb bag of lead shot, 12 inches in diameter, was placed on our skylight in the middle of the glass for 60 seconds. When the glass held firm, the weight was then lifted and dropped from 5 feet up, 13" from the edge of the glass. The bag bounced without penetrating the skylight.

ASTM Draft E06.51.25
After passing the difficult OSHA safety requirements with ease, we increased the load to 300 lbs, and dropped it from 3 feet above the glass a total of three times: in the center, on the corner, and at the edge of glass. Again, it bounced right off. The glass cracked, but the weight stayed on the top side, where it belongs.

Extreme Fall Protection
With expectations always rising, we went and put our skylight up against a test that doesn't technically exist yet. It works like the other fall protection tests that we already passed with flying colors, but increases the weight to 600 lbs. Gently set on the glass, the weight fails to crack the glass. Not until it's dropped from a three-foot height does the glass break, but the laminate holds fast and the skylight bears the full weight.

FEMA STORM SHELTER
Safe Rooms for Tornadoes
Federal Emergency Management Agency (FEMA) has established rigid design specifications for the construction of residential and community safe rooms. With the requirement to safeguard occupants in the fiercest of storms, FEMA P-361 calls for the most durable of building materials and practices provided by those who are FEMA certified. First, it had to withstand two strikes from a 15 lb lumber 2×4 fired at a rate of 100 MPH. It struck once in the center of the glass, and once in the corner, which broke the glass but failed to penetrate the accompanying laminate layers. The skylight was then subjected to 250 MPH winds, which didn't break the integrity of the seal. FEMA certified.

EXTREME WEATHER
Class 4 Large Hail Test
Class 4 Large Hail test, which emulates an unusually severe hail storm. Balls of solid ice, two inches in diameter and weighing 64 grams each, were shot from a cannon at speeds of 75 mph, directly at the glass. Two shots were fired at each test location: the center, the corner, and the edge of the frame. Our skylight was unscathed.

HURRICANE
Miami-Dade County Large Missile Impact Test
In this test, our skylight was installed – air-tight – over the opening of a pressure chamber. An 8' wooden 2×4 was then shot twice at speeds of over 50 feet per second, emulating the debris that's blown around in a hurricane. It struck once in the center and once in the corner, but didn't penetrate. After the glass was cracked, the air chamber was pressurized to +55 PSF, putting internal pressure on the skylight, but the laminate seal held strong. The pressure was then reversed to -55 PSF, applying external pressure. This pressure cycle was repeated 4,500 times over the course of several hours, simulating wind forces during a powerful hurricane. Our skylight never sprung a single leak.

FIRE
UL 790 (ASTM E 108) Class B
The flame source in this test is a burning brand, which gives off a 1,400°F flame when ignited. The brand was set against the edge of the skylight, which was resting on a 5:12 pitch, much like it would on a roof. A 12 mph wind fanned the flame against the skylight's rim. After the first brand burned out, a second brand was placed to repeat the test. When the second brand burned out after 80 minutes, the inspectors observed for damage and concluded that there was no danger of fire penetrating into the building, or spreading of flame.

ICE & SNOW LOADS
AAMA/WDMA/CSA 101/I.S.2/A440-05
Tested to 504 psf = 8,064 lbs., the skylights performed equally on both sloped and flat roof systems.

VTECH INDUSTRIES

For questions or comments regarding your VTECH testings and certifications please email info@vtechindustries.com or call us toll free at 866.491.0843. VTECH Industries would like to thank you for your business.

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