



CPFilms' Safety/Security Films have been successfully tested, and passed, following the windstorm debris protection test standards referenced in the most current versions of the ICC Building Code including the Florida Building Code – High Velocity Wind Zone (HVWZ) or Dade-County Protocols.

In summary, our safety and security films can withstand testing pressures of up to 99 psf which is equivalent* to **199 mph winds** (design pressure 66 psf). They can also withstand the **Large Missile Impact “Level C” or 4.5 lb missile with no penetration of the glazing**. Even the **Large Missile Impact “Level D” or 9 lb missile** is no longer un-achievable for a safety film**. The following table details the impressive achievements of our safety and security films:

Film	LLumar 6 mil	LLumar 8 mil	LLumar 8 mil	LLumar 8 mil Solar
Glass	3/16" Tempered	3/16" Tempered	1/4" Annealed	3/16" Tempered
Frame & Attachment	Aluminum, Wet Glaze	Aluminum, Wet Glaze	Aluminum, Wet Glaze	Aluminum, Wet Glaze
Air Infiltration Test	ASTM E283 & TAS 202	ASTM E283 & TAS 202	ASTM E283	ASTM E283
Water Infiltration Test	ASTM E331 & TAS 202	ASTM E331 & TAS 202	ASTM E331	ASTM E331
Uniform Static Load Test	ASTM E330 & TAS 202	ASTM E330 & TAS 202	ASTM E330	ASTM E330
Impact Test	TAS-201 Small Missile	TAS-201 Small Missile	ASTM E1886/1996 "C" Large Missile	ASTM E1886/1996 "A" Small Missile
Cyclic Load Test	TAS-203	TAS-203	ASTM E1996	ASTM E1996

Film	Vista 8 mil Solar	LLumar 8 mil **	LLumar 11 mil	LLumar 8 mil
Glass	1/4" Annealed	1/4" Annealed	1/4" Tempered	1/4" Tempered Dual Pane
Frame & Attachment	Aluminum, Wet Glaze	Aluminum, Wet Glaze	Aluminum, Wet Glaze	Aluminum, Wet Glaze
Air Infiltration Test	ASTM E283	ASTM E283	ASTM E283	ASTM E283
Water Infiltration Test	ASTM E331	ASTM E331	ASTM E331	ASTM E331
Uniform Static Load Test	ASTM E330	ASTM E330	ASTM E330	ASTM E330
Impact Test	ASTM E1886/1996 "C" Large Missile	ASTM E1886/1996 "D" Large Missile	ASTM E1886/1996 "C" Large Missile	ASTM E1886/1996 "C" Large Missile
Cyclic Load Test	ASTM E1996	ASTM E1996	ASTM E1996	ASTM E1996

* *7/16" Plywood

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Other details of these tests are contained in the complete test reports from the Hurricane Test Laboratory (see www.llumartech.com).

This testing DOES NOT indicate that our film is Dade County approved. Only complete window systems, including details such as the frame type and method of securing the frame to the building can obtain approval. However, this testing clearly indicates that LLumar Magnum film, when used in conjunction with the LLumar Edge Grip Attachment System (wet glaze), offers significant protection from property damage in the event of a wind storm or hurricane.

* Note: Wind speed equivalents referenced above are true only for a "perfect shape" body, such as a cylinder, in homogeneous flow. In other words, the calculation assumes the direction of the wind is perpendicular to the window and there are no effects from surrounding terrain or the shape of the building in which it is installed. The 99psf testing pressure was achieved on 3/16" tempered glass.

** 7/16" plywood installed on the exterior side of frame and the 8 mil safety film installed on the interior side only. Fastening schedule for plywood as specified on the test report.