

Impact Test Requirements for Building Components By Architectural Testing, Inc.

The following represents a summary of current impact test requirements for components and cladding as prescribed by various building codes and authorities. Obviously, this information is subject to change and subject to the discretion of the local authorities.

Florida Building Code, 2002: High Velocity Hurricane Zone (Miami-Dade and Broward Counties)

Components (doors, windows, wall panels) below 30' are subject to large missile impact and cycling tests. Three specimens shall be tested and two impacts per specimen are required. Mullions and doors with glazing may require additional impacts. Components are subjected to fatigue load cycling after impact tests. Cycles for glazed and non-glazed components are different. The test specimens may require follow-up small missile impact tests.

Components (windows and wall panels) above 30' and below 60' are subject to small missile impact and cycling tests. Three specimens shall be tested and three impacts per specimen are required. Components are subjected to fatigue load cycling after impact tests. Cycles for glazed and non-glazed components are different.

Referenced Standards: TAS 201-94, TAS 203-94

Florida Building Code, 2002: Wind-Borne Debris Region (Wind speed > 120 MPH or 110 MPH and 1 mile from coast; Panhandle exception)

Glazing below 30' is subject to large missile impact tests unless covered by an impact-resistant cover. Three specimens shall be tested and one impact per specimen is required. Fatigue load cycling is required after impacts.

Glazing above 30' and below 60' is subject to small missile impact tests unless covered by an impact-resistant cover. Three specimens shall be tested and three impacts per specimen are required. Fatigue load cycling is required after impact tests.

Referenced Standards: SSTD-12, ASTM E 1886, ASTM E 1996

International Building Code, 2000: Wind-Borne Debris Region (Wind speed > 120 MPH or 110 MPH and 1 mile from coast)

Glazing below 30' is subject to large missile impact tests unless covered by an impact-resistant cover. Three specimens shall be tested and one impact per specimen is required. Fatigue load cycling is required after impact tests.

Glazing above 30' and below 60' is subject to small missile impact tests unless covered by an impact-resistant cover. Three specimens shall be tested and three impacts per specimen are required. Fatigue load cycling is required after impact tests.

Referenced Standards: ASTM E 1886-97, ASTM E 1996-99

Texas Windstorm Insurance Association / Texas Department of Insurance

Effective February 1, 2003 the Commissioner of Insurance adopted the structural provisions of the IBC/IRC with Texas Revisions. These rules apply to the designated 14 county coastal catastrophe area, which is divided into 3 zones. Seaward of the Intracoastal Canal, all unprotected exterior openings (windows, doors, skylights and garage doors) shall be impact resistant. Inland of the Intracoastal canal to the 120 MPH 3-second wind gust contour as defined by ASCE 7-98, all glazed exterior openings shall be protected or impact resistant. Inland of the 120 MPH contour, there are no impact requirements. Products subjected to impact tests are required to pass fatigue load cycling.

Products required to be impact resistant will be tested to the large missile test if located between grade and 30' elevation and the small missile test if located between 30' and 60' elevation. The reference standards for impact testing and fatigue cycling are ASTM E 1886-97 and ASTM E 1996-99

Components tested to other wind-borne debris standards recognized by the Texas Department of Insurance may be accepted (for example, TAS 201-94 and TAS 203-94). The previously accepted standard for the coastal catastrophe area, TDI 1-98 (Appendix E) will be allowed until May 31, 2003.

North Carolina Building Code, 2000 – Amended IBC and IRC with wind-borne debris requirements deleted. An amendment defining a 1500' wind-borne debris region has been proposed. Local jurisdictions should be consulted.

South Carolina - Commercial code same as IBC. Residential code has removed wind-borne debris requirement until the next code cycle. However, certain communities have contested the moratorium and are reinstating the wind-borne debris requirement (for example, the City of Charleston, Charleston and Georgetown Counties).