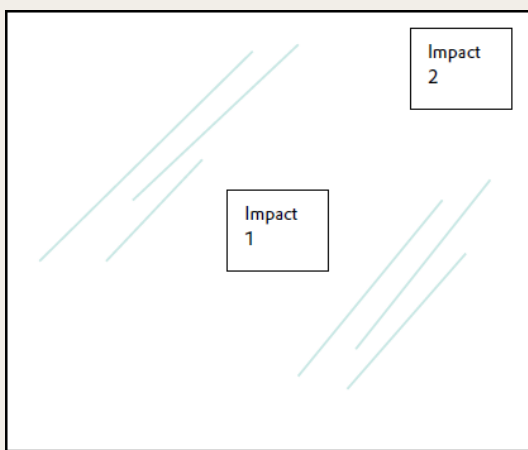


# ACRYLITE® Soundstop

## Impact Resistance

Sound Barriers are often subjected to impacts caused by stones and other debris thrown up by vehicle tires or even hurricane force winds. Therefore it is important to construct a noise barrier from materials able to withstand these impact forces. The following tests methods are used to evaluate the impact resistance of ACRYLITE® Soundstop noise barrier sheet:

1. ASTM E 1886-97 / ASTM E 1996-02 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protection Systems Impacted by Windborne Debris in Hurricanes (also known as the Miami Dade County Large Missile Resistance Test)
2. Mechanical / Concrete Testing Hammer – technical equivalent to the European Standard EN 1794-1, Appendix C, Resistance against Damage by Stone Projectiles



Miami Dade County Test Configuration – Panel is impacted in two locations as depicted

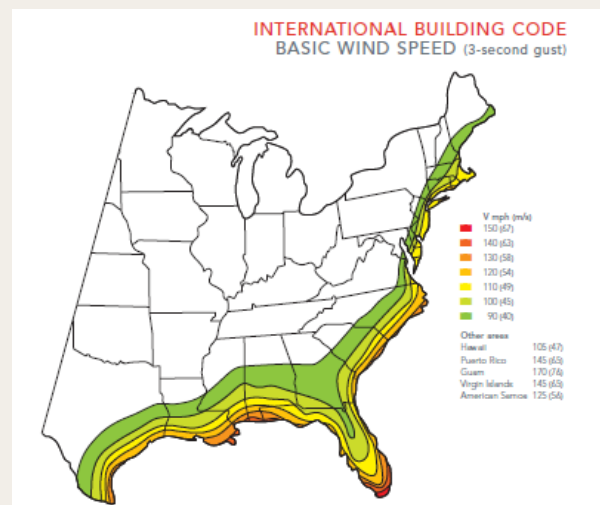
### 1. Miami Dade County Large Missile Resistance Test Method

The panel is impacted by a piece of lumber weighing approximately 9 lbs, measuring 2” x 4” x 8’ in size, and traveling at a speed of 50 feet per second (34 miles per hour). Multiple impacts are recorded with at least one impact in the approximate center of a 4’ x 4’ panel and another near a corner of the panel.

### Test Results

Each of the standard thicknesses of ACRYLITE® Soundstop sheet (15mm, 20mm, and 25mm) passed the impact tests without damage.

Areas vulnerable to hurricanes are the US Atlantic Ocean and Gulf of Mexico coasts where the basic wind speed is greater than 90 mph as well as Hawaii, Puerto Rico, Guam, and the Virgin Islands.



## 2. Mechanical/Concrete Hammer Testing Method

Testing with a mechanical hammer is used to simulate the stone impacts. Three hammer strikes at  $30 \text{ Nm} \pm 1 \text{ Nm}$  (22 ft -lbs) are performed which are roughly equivalent to a 77 gram (0.17 lb) object that is traveling at 100 km/hr (60 mph). One of the test strikes must be near one corner of the test panel within a test area bounded by a margin of 125 mm (5") from the edge of the panel, one must be near the center of the test panel and the third is chosen at random. The exact position of the point to be tested must be chosen to be representative of the panel as a whole and avoid areas of local strength.

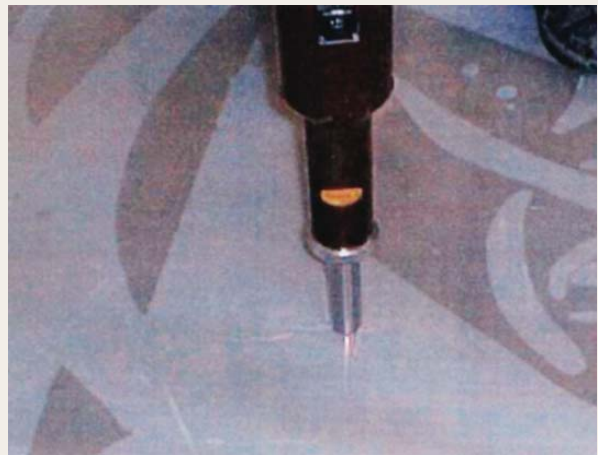


Point 1 – Edge Impact with Concrete Testing Hammer

## Test Results

Three points of impact were marked on the panel of ACRYLITE® Soundstop sheet. Point 1, is a corner point with a distance of 125 mm (5") from the upper edge and 125 mm (5") from the side edge. Point 2, is at the center of the sheet and point 3 was chosen at random.

At the conclusion of the test there was no evidence of penetration, destruction, formation of cracks or chipping on the ACRYLITE® Soundstop Sheet panels.



Point 2 – Center Impact with Concrete Testing Hammer

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