

## PARAGLAS SOUNDSTOP® noise barrier sheet

# Impact Resistance Technical Data

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 PARAGLAS SOUNDSTOP® noise barrier sheet:

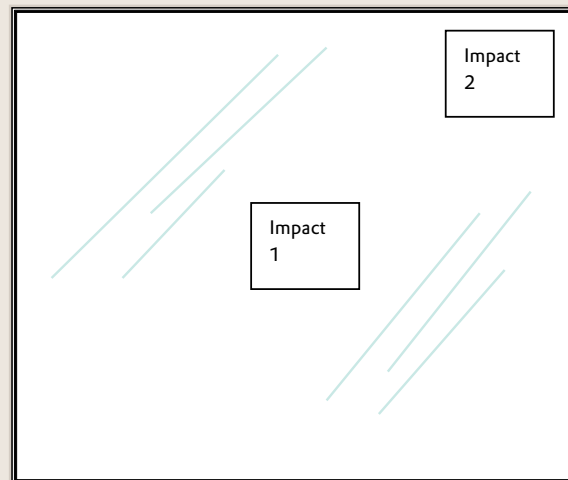
1. ASTM E 1886-97 / ASTM E 1996-02 Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protection Systems Impacted by Windborne Debris in Hurricanes (also known as the Miami Dade County Large Missile Resistance Test)
2. Mechanical / Concrete Testing Hammer - technical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

### 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 PARAGLAS SOUNDSTOP sheet (15mm, 20mm, and 25mm) passed the impact tests without damage.



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



Point 1 – Edge Impact  
with Concrete Testing Hammer



Point 2 – Center Impact  
with Concrete Testing Hammer

## 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 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 places of local strength.

## Test Results

Three points of impact were marked on the panel of PARAGLAS 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 PARAGLAS SOUNDSTOP Sheet panels.



**EVONIK**  
INDUSTRIES

### Evonik Cyro LLC

379 Interpace Parkway  
Parsippany, NJ 07054 USA

PHONE +1 800 631-5384  
+1 973 541-8000

paraglas@evonik.com

www.paraglassoundstop.com

### Important Notice:

This information and all technical and other advice are based on Evonik's present knowledge and experience. However, Evonik assumes no liability for such information or advice, including the extent to which such information or advice may relate to third party intellectual property rights. Evonik reserves the right to make any changes to information or advice at any time, without prior or subsequent notice. EVONIK DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, AND SHALL HAVE NO LIABILITY FOR, MERCHANTABILITY OF THE PRODUCT OR ITS FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE), OR OTHERWISE. EVONIK SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. It is the customer's sole responsibility to arrange for inspection and testing of all products by qualified experts. Reference to trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used.

Evonik Cyro LLC is an Evonik Degussa Corporation group company. PARAGLAS SOUNDSTOP® is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany. ©2010 Evonik Cyro LLC.  
All Rights Reserved.

**Evonik. Power to create.**