PRODUCT SPECIFICATION
VICONIC FALL DEFENSE™

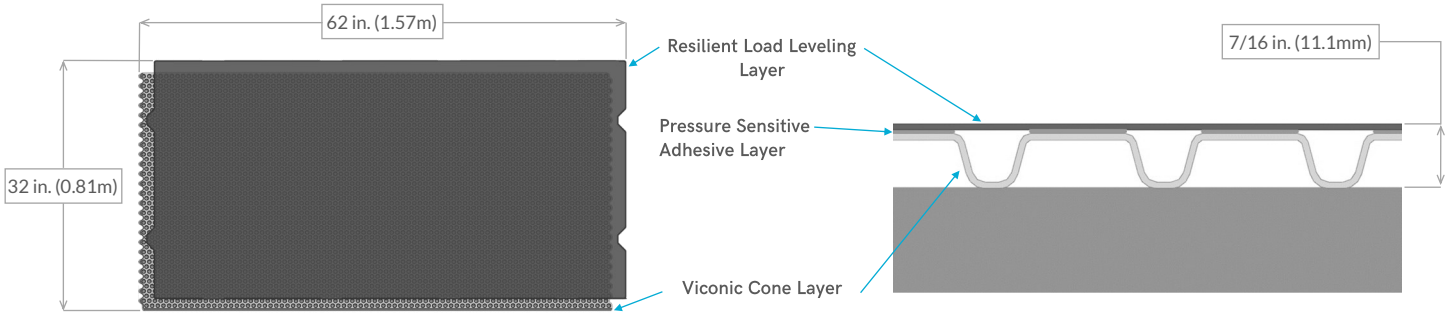
DESCRIPTION (all sizes and weights are nominal)

Thickness	7/16 in.	(11.1 mm)
Panel Width	32 in.	(0.81 m)
Panel Length	62 in.	(1.57 m)
Panel Coverage	12.9 ft²	(1.2 m²)
Weight	0.54 lb./ft²	(2.64 kg/m²)

PROPERTIES

- Compatible with most flexible flooring systems
- Offered with ADA compliant reducer ramp
- Non-adhered flooring underlayment
- Supplied in modular panels with integrated adhesive for assembly
- Can be loose-laid over most flat, rigid subfloors
- Compatible with most acrylic water based adhesives

UNDERLAYMENT SYSTEM STRUCTURE (all measurements are nominal; not to scale)



TEST DATA

Standard		Result
ASTM E492, Impact Sound Transmission*	IIC HIIC	57 63
ASTM E90, Airborne Transmission Loss*	STC	50
ASTM E2179, Delta Impact Insulation*	ΔIIC	25
ASTM F355, Impact Attenuation	A Missile E Missile**	212 G's 695 HIC
FMVSS 201u, Head Impact Protection		415 HIC_d
CSA EXP08-17, Hipform Force Reduction***		18%
ASTM F3189, Footfall Force Reduction	Force Reduction Energy Restitution Vertical Deformation	34.5% 51.5% 2.1 mm
Rotational Penetrometer, Mobility***	Firmness Stability	Pass (≤0.300 in.) Pass (≤0.500 in.)
ASTM F970, Static Load Limit	50 psi 75 psi 100 psi 125 psi	0.005 in. 0.006 in. 0.008 in. 0.009 in.
ASTM F36, Compression & Recovery	50 psi (4 hour exposure) 100 psi (4 hour exposure)	0.005 in. 0.006 in.
ASTM E662, Smoke Density	Flaming Non-Flaming	Pass (≤ 450) Pass (≤ 450)
FMVSS 302, Flammability		Pass (≤ 4 in/min)
ASTM C518, Thermal Insulation	Thermal Resistance, R	0.856

* System level evaluation with 2mm sheet vinyl over a 6" concrete slab
** A single drop height (2 ft.) was used based on relevant clinical fall data collected by the University of Waterloo
*** Evaluated as an assembled flooring system using 2mm heterogenous vinyl sheet

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MADE IN USA

Test Information

The following list contains brief summaries, plus additional notes as needed, for the majority of the test standards noted in Viconic's product specification. Please refer to the actual standard for complete information. While Viconic makes every effort to ensure consistency in production, some minor variations in performance can occur between product lots. Additionally, choice in flooring system will result in altered performance of the assembled system. Viconic generally uses 2mm heterogeneous sheet vinyl for system level evaluations.

ASTM E492, Impact Sound Transmission

- This method covers the laboratory measurement of impact sound transmission of floor-ceiling assemblies using a standardized tapping machine. It is assumed the test specimen constitutes the primary sound transmission path into a receiving room located directly below and that a good approximation to a diffuse sound field exists in this room. The data obtained from this test is used to calculate an Impact Insulation class (IIC). High-Frequency Impact Insulation class (HIIC) is also calculated and reported.

ASTM E90, Airborne Transmission Loss

- This test method is used to calculate sound transmission class (STC) through the measurement of sound transmission loss of building elements. Two adjacent rooms are arranged with the flooring assembly between them. A diffuse sound field is produced in the source room creating a sound field in the receiving room. The space and time average sound pressure levels in the two rooms are determined and used to calculate STC.

ASTM E2179, Delta Impact Insulation

- The test chamber consists of two reverberation rooms, one located directly above another. Care is taken that the only significant sound transmission between the rooms is by way of the test specimen. A tapping machine is operated in four different locations while the sound pressure levels are measured by microphone in the room below. The improvement in Impact Insulation class (ΔIIC) is reported.

ASTM F355, Impact Attenuation

- This method specifies how to measure the impact attenuation of playing surface systems and materials, specifically the peak impact acceleration. The test method uses a simulated hip-form (A missile) and head-form (E missile) to measure the impact attenuation of materials and components used as protective padding.
    - The A missile reports the peak G value experienced when impacting a surface. Lower G values indicate a reduction in risk of injury.
    - The E missile reports Head Injury Criteria (HIC), an indication of impact severity and risk of injury. Lower HIC values indicate a reduction in risk of injury, with values over 1000 indicating exponentially increasing probability of risk of critical injury.

FMVSS 201u, Head Impact Protection

- A FMVSS201u Hybrid III free motion headform is used to determine the risk of head injury in passenger vehicles. The device reports HIC where values over 1000 indicate exponentially increasing probability of critical injury risk.
- The headform impacted the flooring system at 11.34 ft/s (3.46m/s) which is equivalent to a 2 ft. freefall drop.

CSA EXP08-17, Hipform Force Reduction

- The Canadian Standards Association has outlined a method for evaluating the force attenuation provided by hip protectors. A mechanical surrogate pelvis and steel force plate are used to determine femoral neck forces experienced during a fall related impact on the hip. The test surface is impacted at a velocity of 9.5-10.5 ft/s (2.9-3.2 m/s), and data is presented as a percentage of force reduction compared to a non-padded baseline impact.

ASTM F3189, Footfall Force Reduction

- The Advanced Artificial Athlete (AAA) simulates a foot interacting with a flooring surface and measures the acceleration as a function of time, outputting three values:
    - Force Reduction: The amount of force reduced by the flooring surface during the test foot impact compared to a concrete surface. Concrete has 0% force reduction. Higher values of force reduction percentage indicate increased comfort under foot.
    - Energy Restitution: The amount of energy returned to the test foot by the flooring surface, where bare concrete has 100% energy restitution. Lower energy restitution percentage indicate increased comfort under foot.
    - Vertical Deformation: The maximum measured deformation of the flooring surface during the impact of the test foot

Rotational Penetrometer, Mobility

- The Rotational Penetrometer is designed to measure firmness and stability of ground and floor surfaces. An inter-laboratory study revealed the device produced repeatable measurements correlating with the amount of work required to propel a wheelchair as measured by ASTM F1951.
    - Firmness is measured by spring loading a wheelchair caster into the test surface and measuring the vertical displacement of the indenter wheel.
    - Stability is measured by rotating the loaded caster 360° and re-measuring the vertical displacement.
    - Firmness and stability measurements must be less than 0.3 in. (7.6 mm) and 0.5 in. (12.7 mm) for a surface to be considered firm and stable, respectively. Note: these displacements include compression of the wheel assembly.

ASTM F970, Static Load Limit

- This test determines the recovery properties of resilient flooring systems after indenting the surface with a 1.125 in. (28.6 mm) diameter flat indenter under a specified load. Residual indentation is measured 24 hours after load removal.

ASTM F36, Compression & Recovery

- This test method determines the short-term compressibility and recovery of materials at room temperature.

ASTM E662, Smoke Density

- This procedure is designed to measure the specific optical density of smoke generated by the test specimen within a closed chamber. Two burning conditions, flaming and non-flaming, are simulated.

FMVSS 302, Flammability

- This test is used to determine the burn resistance capabilities of materials used in the occupant compartments of motor vehicles. This test is typically performed on materials in passenger cars, trucks, and buses.

ASTM C518, Thermal Insulation

- This test is used to quantity the thermal insulation properties of a surface. The specimen is placed between two parallel plates at constant but different temperatures. A heat flow meter measures the heat transfer between heat sources, and thermal resistance is calculated.