



Insulating Concrete Roof Decks

Information:

Wind Uplift Rated Systems

The UL test method is for the determination of uplift resistance of roof assemblies. It evaluates the comparative resistance of the roof deck, its attachment to supports, and the roof covering to positive and negative pressures which simulate the pressure effects of 73-174 mph wind velocities.

The test chamber applies steady positive pressures on the underside of the roof assembly and steady and oscillating negative pressures on the top surface (roof membrane).

Test Information

Duration of I90 Test	240 minutes
Pressure Range Tested	20-90 psf
Pressure Phase Duration	3 @ 80 minutes
Positive and Negative Pressure	See table below
Wind Velocities	up to 174 mph

Class 90 Requirements

Test Phase	Time Duration (mins)	Negative Pressure		Positive Pressure	
		Lbs./ Sq. Ft (kPa)	Inches of Water (mm)	Pounds/ Sq. Ft (kPa)	Inches of Water (mm)
1	5	48.5 (2.33)	9.3 (236)	0.0 (0.00)	0.00 (0)
2	5	48.5 (2.33)	9.3 (236)	41.5 (1.99)	8.0 (203)
3	60	24.2-48.5 (1.16-2.33)	4.7-9.3 (119-236)	41.5 (1.99)	8.0 (203)
4	5	56.5 (2.71)	10.9	0.0	0.0 (0)

			(277)	(0.00)	
5	5	56.5 (2.71)	10.9 (277)	48.5 (2.33)	9.3 (236)

Uplift Tests: Factory Mutual Research Corporation (FMRC)
Elastizell Composite Insulating Roof Decks have passed FMRC requirements for:

Class	Usage	Deck Type(s)
Class 1-60 and 1-90	- Mechanically attached base sheets with mopped built-up roofing - one-ply modified bitumen (either mopped or torched)	- Steel - Concrete - Recovered concrete
Class 1-120	Fully adhered roofing membranes	- Steel
Class 1-180 and greater	Fully adhered roofing membranes	- Concrete - Recovered concrete

FMRC Pull Test Results

	Sample Description	Load
1	Structural concrete test block Built up roof cover (BUR) 1/8" thick Elastizell slurry 1" Apache Holey Board 2" thick Elastizell	225 psf +
2	Structural concrete test block 1/8 " thick Elastizell slurry 2" thick Star Foam EPS with 6-3" dia. holes per 2x4' board w/ smooth faces 2" thick Elastizell	480 psf +
3	Structural concrete test block 3" Elastizell	480 psf +

Performance

Some 110 Elastizell roof decks were in the path of [Hurricane Andrew](#) when it hit the area around Homestead, Florida. [Go here to read more.](#)