



# BULLETIN

SIPLAST ROOF INSULATION SYSTEMS

## Siplast Lightweight Insulating Concrete Roof Insulation Systems

### Sustainable Building Envelope Design – Premium Expanded Polystyrene Board

#### Bulletin 8 – SRIS-0908

Siplast Insulperm Expanded Polystyrene (EPS) Board is a primary component in Siplast Lightweight Insulating Concrete Roof Insulation Systems. Insulperm EPS Board is encapsulated in the lightweight fill, resulting in an engineered composite system that functions as a substrate for the roofing membrane, a mass component to the roof assembly, and a possible contributor as a structural diaphragm component of the building envelope.

Siplast Lightweight Insulating Concrete and Insulperm EPS Board offer numerous advantages over ordinary rigid board insulation. One key benefit is stable insulation value – the R-value of EPS board does not deteriorate from the time of placement. This performance quality is documented in studies such as the one referenced below. Because Insulperm EPS board does not experience any thermal drift, unlike other insulation systems, it contributes to increased long term thermal efficiency and the reduction of resources needed for heating and cooling the building environment.

	AGE	DENSITY	R-VALUE
Published Initial Values	at time of manufacture	1.00 pcf	3.85
		1.25 pcf	3.92
EPS Insulation Samples	13 years	1.28 pcf	3.94
	15 years	1.09 pcf	4.07

"Report on Expanded Polystyrene Insulation for Use In Built-Up and Single Ply Roofing Systems" by Rene M. Dupuis and Jerome G. Dees, dated August 1984.

Siplast Insulperm can be distinguished from standard EPS board by its specially engineered design. Insulperm's hole pattern results in a higher percentage of open area per board than that of other EPS boards. This increased open area allows moisture to move more easily through the system, improving dissipation rate. Further, Insulperm's hole pattern reduces the distance between the lightweight concrete columns formed when the Insulperm is encapsulated. This reduced distance distributes forces more evenly across the board, improving system cohesion and stability.

Siplast Insulperm is nominal 1 pcf density, defined as Type I by ASTM C 578, and incorporates 15% post-industrial recycled polystyrene. Siplast Lightweight Insulating Concrete Systems are guaranteed to be reroofable, making them arguably the most sustainable, environmentally responsible insulation choice. However, if for some reason the system is removed at the time of reroofing, Insulperm is 100% recyclable.



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