

R-Value of EIFS Technical Bulletin

TB004

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Exterior Insulation Finish Systems (EIFS) are known for their exceptional energy efficiency. As a primary component of EIFS, the continuous insulation layer is where the R-Value of the assembly (i.e., its resistance to heat loss) is achieved. The other system components (e.g., water-resistive and air barrier coating, adhesive, base coat, reinforcing mesh, primer and finish coat) do not add measurable R-Value to the assembly.

The most common board insulation used in EIFS assemblies is expanded polystyrene (EPS). Of the many continuous insulation options available today, EPS offers an advantage of stability of R-Value over time¹. This contributes to the consistent, long-term energy performance and associated cost savings in operation of the building. EPS is the EIFS industry standard due to its established performance and overall value when compared with other board insulation options.

Manufactured densities of EPS and the temperature at which the reported R-Value was measured impact the true R-Value of EPS. The industry standard mean temperature for measuring R-Value is 75oF. It is important to keep this standard in mind when evaluating reported R-Values and choosing the material best suited for the project. Higher measured temperatures result in lower reported R-Values, while lower measured temperatures result in higher reported R-Values. To ensure that the insulation chosen adequately meets the project requirements and energy efficiency expectations, evaluate materials at the same mean temperature before making a final selection.

System	1 pcf Density EPS Thickness	Total R Value @ 75°F
Standard or Drainage EIFS	1" EPS	3.8
	1.5" EPS	5.7
	2" EPS	7.6
	2.5" EPS	9.5
	3" EPS	11.4
	3.5" EPS	13.3
	4" EPS	15.2
	4.5" EPS	17.1

**Type I, 1 pcf density EPS with R Value of 3.8/inch*

System	1.8 pcf Density EPS Thickness	Total R Value@ 75°F
Standard or Drainage EIFS	1" EPS	4.4
	1.5" EPS	6.6
	2" EPS	8.8
	2.5" EPS	11
	3" EPS	13.2
	3.5" EPS	15.4
	4" EPS	17.6
	4.5" EPS	19.8

**Type IX, 1.8 pcf density EPS with R Value of 4.4/inch*

1 "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.

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