

Foam-Control® EPS Water Absorption Facts

Superior moisture resistance and stable R-Value from Foam-Control EPS to protect your insulation integrity.

Architects, Engineers, Contractors, and Building owners are all concerned with the performance of their insulation. The long term performance of insulation is critical to ensuring the energy savings the insulation was specified to provide. The most common issue surrounding the long term performance of below grade insulation is loss of R-value over time.

The two primary mechanisms for the loss of R-value of insulations are water absorption and loss of blowing agents.

Water Absorption.

It is well understood that water is not a good insulator compared to foam insulations. This means that the absorption of water into insulations will degrade their R-value. This leads the user to determine how much water will be absorbed and what is the effect on R-value?

Foam-Control EPS is manufactured in compliance with ASTM C578, "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation." The C578 standard identifies various material properties, including strengths, R-value, and water absorption requirements. Foam-Control EPS will absorb a maximum of 2-4% by volume when exposed to the testing specified by ASTM C578.

The ASTM C578 water absorption requirement is determined by submerging a 12" x 12" x 1" piece of insulation in water for 24 hours. After 24 hours the sample is removed and the moisture absorption of the sample is determined. This test is an indicator of possible water absorption and is not a design value or the actual value expected in long term duration testing.

Independent Testing.

Recent Independent testing of below grade insulation has determined the water absorption of Foam-Control EPS and an extruded polystyrene (XPS) product. Samples of EPS and XPS were excavated from the exterior foundation of a building in St. Paul, MN. The insulation was placed into service in 1993 and had 15 years of use as vertical wall insulation separating the heated building foundation from soil.

Samples were tested immediately upon excavation for R-value. The samples were subsequently conditioned in a laboratory (72° F, 50% RH) for four weeks to determine a conditioned R-value. In addition, the moisture content of the samples was measured.



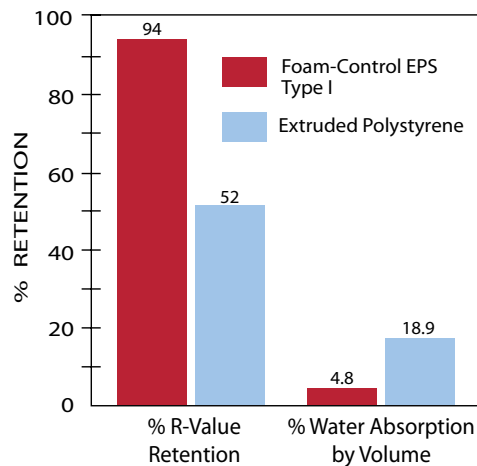
EPS

CONTROL, NOT COMPROMISE.®



Foam face-off:
The facts about below grade insulation and water absorption.

WATER ABSORPTION AND R-VALUE RETENTION¹



Retained thermal resistance and water absorption of insulations subjected to 15 years below grade exposure

¹ Testing was conducted by an independent, accredited Third Party Laboratory.

