

construction trends



EPS VERSUS XPS: YOU BE THE JUDGE

Both the EPS Industry Alliance and Owens Corning Foam Insulation are saying their scientific data on two rigid foam insulation products—expanded polystyrene insulation (EPS) and extruded polystyrene insulation (XPS)—prove that their type of insulation is tops when it comes to moisture retention and R-values. So who is right? You be the judge.

The EPS-IA completed a series of tests on XPS to examine the effects of moisture absorption and R-value in different field applications. The association says its conclusions are “based on testing conducted by a third-party, certified testing laboratory and rely on industry recognized standards ASTM C1512, ASTM C518 and others.”

Owens Corning says it used objective data from credible, third-party sources to create its “Science Doesn’t Lie” campaign, which includes scientific data, video

and in-person demos. The campaign is intended “to educate architects, builders and contractors about the proven performance, reliability and manufacturing characteristics of XPS versus EPS.”

“When comparing XPS versus EPS, moisture matters most,” said Herbert Slone, R.A., manager of commercial building systems for Owens Corning. “Independent studies clearly show that XPS is more moisture resistant than EPS and that XPS better maintains R-value. Resisting water absorption and maintaining R-value is critical for high performance insulation.”

But the EPS-IA’s testing concluded that “[w]hen evaluating XPS material samples extracted from roofing and below grade applications, in these long-term installations, XPS did not maintain its initial R-value.”

The EPS-IA continues: “EPS exhibits superior moisture-related performance

properties over XPS. It has higher vapor permeability, meaning it helps promote drying in a wall system. As shown in the EPS-IA technical bulletins, EPS is inherently more capable of tolerating moisture absorption than XPS. Even at 3.0–4.0 percent moisture absorption, expanded polystyrene insulation delivers consistent R-value of 3.1–4.3 per inch.”

To “help separate fact from fiction,” Owens Corning’s campaign provides an in-depth examination of XPS and EPS across several categories: moisture resistance (“EPS absorbs more water than XPS in laboratory tests and in application”), R-value (“XPS maintains R-value better than EPS”), the manufacturing process and structural integrity (“XPS maintains product integrity because of its moisture resistance”).

The EPS-IA says it is confident that two new documents—“Drying Potential of Polystyrene Insulations Under Extreme Environmental Cycling Conditions” and “XPS Insulation Extracted After Field Exposure Confirms High Water Absorption & Diminished R-value”—will be a valuable resource for contractors, architects and consumers. Those interested in more information are encouraged to contact Betsy Steiner, EPS-IA executive director, at emsteiner@epsindustry.org or (800) 607.3772.

Owens Corning invites you to learn more about their campaign at www.owenscorning.com/sciencedoesntlie.

Also reference our February 2014 article (page 10) in which a report from Building Science Corporation concluded that “sealed walls of the same R-value perform equally well regardless of the type of insulation used.”