

**EnergyShield<sup>®</sup> XR**  
Continuous Insulation



Everything you want to know about  
polyiso below grade insulation.

# Q & A

# **EnergyShield<sup>®</sup> XR** Continuous Insulation

**Q** *Why should I use a new product when XPS has worked well below grade?*

**A** EnergyShield XR is the next advancement in below grade insulation. It has been engineered to meet or exceed performance expectations of XPS while improving several aspects:

- At R10, it is thinner than XPS, providing a 20% shipping efficiency improvement.
- It is highly compatible to solvents and UV so it will not melt or deform when exposed.
- It has a much lower global warming potential (GWP) with a blowing agent that's been proven for decades.
- And, most important, it is more cost effective than next generation XPS.

**Q** *Can I install EnergyShield XR on above grade walls or roofs?*

**A** No. EnergyShield XR is specifically engineered for below grade applications. Atlas provides other products tailored to above grade wall and roof installations with extensive performance attributes, testing, and approvals particular to those applications.

**Q** *I've always considered polyiso as roofing insulation; how is EnergyShield XR different?*

**A** EnergyShield XR has a distinctive orange facer so as to not confuse it with typical black-faced roofing products. It is important to remember EnergyShield XR is not approved for above grade walls or roofs; the technology is specifically designed and approved for below grade applications.

**Q** *Is EnergyShield XR just a beige version of XPS with facers on each side?*

**A** No, the foam core is beige because it is polyisocyanurate, not polystyrene. However, similar to XPS, EnergyShield XR is a closed-cell hydrophobic foam with excellent moisture resistance, less than 0.3% water absorption,<sup>1</sup> in fact.

**Q** *Does EnergyShield XR meet ASTM C578 like XPS?*

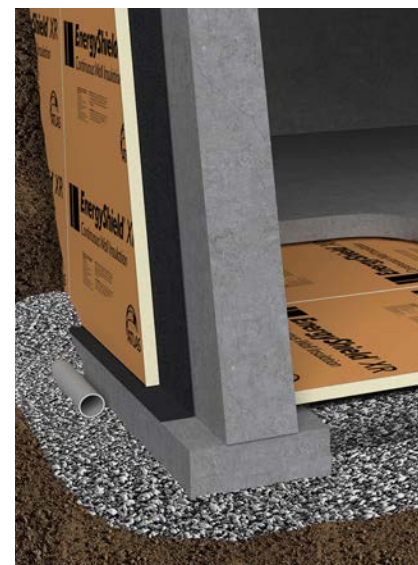
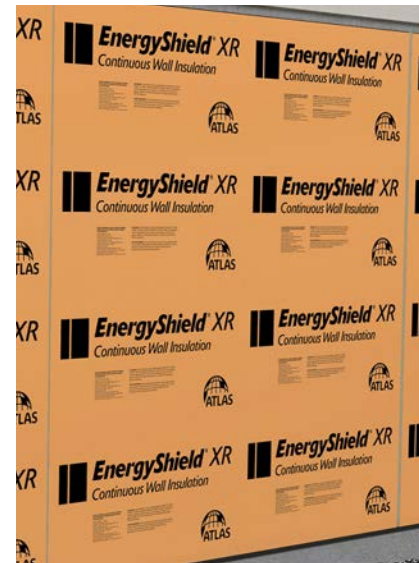
**A** No. EnergyShield XR insulation is a polyisocyanurate insulation classified under ASTM C1289 while ASTM C578 is prescriptive for polystyrene insulation. However, EnergyShield XR does meet or exceed all PERFORMANCE criteria required of ASTM C578.<sup>2</sup>

**Q** *Is EnergyShield XR moisture resistant?*

**A** Yes. The closed-cell structure of the polyiso foam core provides excellent moisture resistance. Third-party testing was conducted on the new technology to confirm that the product is hydrophobic.<sup>3</sup>

**Q** *What is the benefit of the facers on EnergyShield XR?*

**A** Simply put, the manufacturing process to make polyiso boards requires facers. While the facers provide added durability, they could essentially be removed and the product would continue to insulate with no impact on overall performance or decrease in water resistance.



**Q** Does the facer need to be taped for water resistance?

**A** No. While the facers of EnergyShield XR offers durability and drainage efficacy, the foam core is itself water resistant. Therefore, taping board joints or repairing any facer damage is not required for below grade applications.

**Q** Is EnergyShield XR available in different compressive grades like XPS?

**A** No. EnergyShield XR is supplied as a single compressive grade—25psi. This is suitable for both vertical below grade wall and horizontal perimeter or under slab applications.

**Q** Can EnergyShield XR be ordered in other sizes?

**A** EnergyShield XR is currently available as a 4' x 8' board in four thicknesses providing options based on project specifications.

**For projects that require**

**R-value targets:**

- Achieve R-10 with 1.55" board
- Achieve R-15 with 2.4" board

**For projects specifying a thickness**

**designation related to XPS:**

- 2" offers R-13.1
- 3" offers R-19.7

**Q** Does Atlas manufacturer other below grade product solutions where alternate thickness or compressive strength is required?

**A** Yes. Atlas ThermalStar® Below Grade Insulation is available in higher compressive grades up to 60 psi at almost any thickness up to 32" using expanded polystyrene. Additional information is available through the Atlas Molded Products division.

**Q** Can EnergyShield XR be scored?

**A** Yes. Similar to XPS, EnergyShield XR is scored during production at both 16" and 24" o.c. offering installation flexibility for all projects. However, upon request, the product can be produced without the scoring feature.

**Q** What kind of fasteners can be used to install EnergyShield XR?

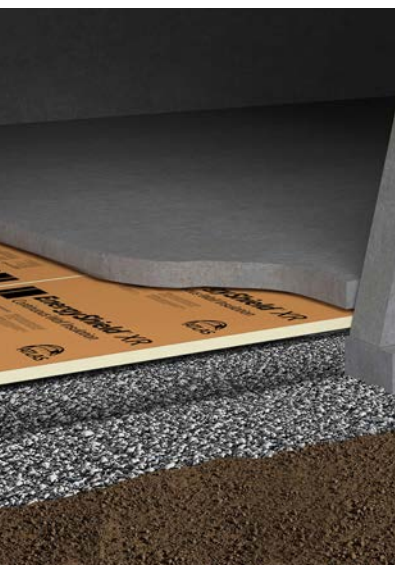
**A** There are various options for installing below grade insulation but put simply, any fastening system currently being used for XPS will work with EnergyShield XR. In addition, with broader compatibility, other adhesives can also be considered. Often, back fill alone is adequate to hold insulation boards against foundation walls.

**Q** Will EnergyShield XR degrade if exposed to waterproofing or damp-proofing products?

**A** No. EnergyShield XR is compatible with most solvent-based products. This adds valuable time efficiency and design flexibility for installation.

**Q** Is it OK to pour wet concrete on EnergyShield XR?

**A** Yes, in fact, polyiso foam products are commonly used as the insulating core of poured concrete tilt up walls.



**Q** Can radiant heat tubing be installed over EnergyShield XR?

**A** Yes. EnergyShield XR is resistant to heat up to 250°F which is much higher than XPS. In fact, the facers on EnergyShield XR can also aid in holding down landscaping staples often used to maintain tube spacing prior to concrete pour.

**Q** Can bundles be stored outside?

**A** Yes. Palletized bundles of EnergyShield XR can remain outside for onsite storage; however, it's recommended to cover with a waterproof tarp if exposed for extended periods in excess of 90 days. Reference Technical Bulletin #16 for additional storage and handling information.

**Q** Will EnergyShield XR degrade if exposed to sunlight?

**A** No. Polyiso does not degrade if exposed to direct sun or heat. Depending on the length of UV exposure, however, the outer edges of the foam board may darken, but that is not an indication of a product defect or cause for material rejection. Unlike some XPS products, EnergyShield XR will not melt when exposed to any combination of direct sun exposure and concentrated reflected sunlight.

### FEATURES AND BENEFITS



#### DELIVER MORE WITH LESS

EnergyShield XR delivers more R-value in a thinner, more durable product. Achieve R-10 in only 1.55" of polyiso versus 2" of XPS.



#### RESPONSIBLY MANUFACTURED

Environmentally friendly blowing agent with decades of proven performance. Plus, reduced carbon footprint with 8 manufacturing locations shipping over 20% more units per truckload than XPS.



#### MATERIAL COMPATIBILITY

Polyiso provides greater flexibility on the job. It's compatible with waterproofing and adhesive components, providing long term performance.



#### ULTRAVIOLET LIGHT PROTECTION

Polyiso remains dimensionally stable with exposure to UV or under cover and won't deform from heat buildup unlike XPS.

<sup>1</sup> Results are by volume based on testing per ASTM C272 immersion for 24 hours.

<sup>2</sup> Reference *Atlas-Wall-Did You Know?: ASTM Classification of Foam Plastic Insulation*.

<sup>3</sup> Additional details are outlined in DrJ TER 2209-01.

"R" means resistance to heat flow. The higher the R-value, the greater the insulating power.