EnergyShield® XR
Continuous Insulation




Everything you want to know about

## Above & Below Grade Polyiso Insulation

# Q&A

# Continuous Wall Insulation with the a higher **R**-value, and the **X**-Factor.

Atlas EnergyShield XR is the first polyiso continuous insulation board designed for above and below grade applications. Prescribe this one single product that exceeds performance expectations while offering enhanced comfort and lower energy use in a more versatile product than XPS. Not to mention, we've been ozone friendly for over 30 years.



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

EnergyShield XR has a distinctive orange facer so as to not confuse it with the typical black-faced roof products. It is important to note that EnergyShield XR is not approved for roofs; the technology is specifically designed and approved for above grade wall and below grade applications.

### Where can EnergyShield XR be used?

Atlas developed this product to be a drop-in replacement for XPS, launching it initially for below grade use, and adding above grade use for commercial and residential wall applications.

While the product has not changed, EnergyShield XR has the approvals necessary for commerical and residential use:

- For commercial exterior walls: NFPA 285 approved assemblies, UL hourly rated wall assemblies, FS100 Wind Resistance ratings, weather resistant performance, among other assurances required in commercial construction.
- For residential: exposure in attics without an ignition barrier, FS100 Wind Resistance ratings, weather resistant barrier performance, and other information and approvals not needed for below grade applications.

### It looks like beige XPS with facers on each side; is that all this is?

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[1], in fact.

### Typically, XPS does not have facers. Why does polyiso have facers and what is their purpose?

Simply, the manufacturing process to make polyiso boards requires facers. For above grade wall applications, the facer provides a consistent bonding surface for an array of adhered tapes and liquid flashings, approved as a system to perform weather resistant barrier functions, eliminating the need for a separate control layer.

### Is EnergyShield XR moisture resistant?

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[2].

### Does the facer's edges need to be sealed?

Not necessarily. Sealing the board joints is only required when the intended use will replace a traditional air or water resistive barrier. Often the boards are installed as exterior insulation only with no further detailing required.

### Does EnergyShield XR meet ASTM C578 like XPS?

It does meet or exceed all PERFORMANCE criteria required of ASTM C578[3]. However, EnergyShield XR insulation is a polyisocyanurate insulation classified under ASTM C1289, while ASTM C578 is prescriptive for polystyrene insulation.

### Is the R-value of EnergyShield XR per inch the same as XPS?

EnergyShield XR has a 30% higher R-value at the same thickness as XPS.

### XPS is available in different compressive grades. Does this product offer the same options?

EnergyShield XR has a compressive strength of 25 psi, suitable to withstand the pressure of slabs and foundation soil loads for both vertical below grade wall and horizontal perimeter or below slab applications, as well as above grade exterior walls.

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

Any fastening system used for sheathing in above grade applications will work with EnergyShield XR. Reference installation instructions for more information for both above and below grade applications.

### Can EnergyShield XR be scored?

Yes. Similar to XPS, EnergyShield XR can be scored during production at both 16" and 24" o.c. offering installation flexibility for all projects.

### Can bundles be stored outside?

Yes. The bundles can remain outside for onsite storage. Polyiso does not have the same UV and heat stability concerns that XPS has that requires special jobsite handling. However, as with any building material, best practice is to limit exposure to weather. Additional storage and handling information can be referenced in Atlas Technical Bulletin #16.

### Will the product degrade if exposed to sunlight?

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 of the newer formulations of XPS products, EnergyShield XR will not melt when exposed to a combination of sun and concentrated reflected sunlight, or reflection from e-coated windows.

### Why should I use this product when XPS has worked just fine?

EnergyShield XR has been engineered to meet or exceed performance expectations of XPS while improving several aspects:

- At R-10, 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 uses a blowing agent that's been proven for decades with a much lower global warming potential (GWP).
- It is more cost effective than the new formulations of XPS.

### Will EnergyShield XR degrade if exposed to waterproofing or damp-proofing products in below grade applications?

EnergyShield is compatible with most solvent- or water-based products. This adds valuable installation efficiency and design flexibility.

### What kind of fasteners can be used to install EnergyShield XR on below grade foundation walls?

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, backfill alone is adequate to hold insulation boards against foundation walls.

### How do the NFPA 285 approvals of EnergyShield XR compare to XPS?

EnergyShield XR is approved within millions of NFPA 285 compliant assemblies, including behind metal panels and fiber cement as well as with or without exterior sheathing, surpassing that of XPS. This offers added flexibility for projects of all sizes.

### What are the advantages of using EnergyShield XR instead of XPS?

EnergyShield XR provides a proven formulation at a lower cost, better performance, and better for the environment. As a thermoset material, polyiso does not melt like XPS — it chars in place. EnergyShield XR can be installed up to 4" offering up to R-26 of effective thermal resistance in NFPA 285 compliant wall assemblies. EnergyShield XR can be installed as the WRB and air barrier to help reduce materials and jobsite complexity. EnergyShield XR offers ultra-low GWP which is important to specifiers in commercial construction.

### XPS has typically been the standard insulation behind brick cladding on exterior commercial above grade walls. Why change to EnergyShield XR?

In an effort to reduce the Global Warming Potential of the gasses used in XPS, the new formulation of this product has become more expensive and still does not meet the ultra-low GWP of the gasses used in polyiso, which is important to specifiers in commercial construction. In addition, the changes in the new XPS formulation do not seem to meet the prior generation's performance expectations without special handling considerations. EnergyShield XR provides a proven formulation at a lower cost, better performance, and better for the environment.

### Are there additional EnergyShield products available for above grade commerical wall applications?

EnergyShield XR is designed to work within most above grade commercial wall applications, however, Atlas also manufactures a number of other polyiso continuous wall insulation products that are approved within an extensive combination of wall designs, such as interior exposed, use with ACM cladding, tilt up wall, and nailbase options, exceeding XPS for those robust applications.

### Is EnergyShield XR the only product from Atlas for above grade residential walls?

Atlas offers a few other options for continuous wall insulation products for residential applications, such as EnergyShield, a foil-faced rigid insulation, and EnergyShield CGF featuring coated glass facers. However, EnergyShield XR is the only product from Atlas that has the flexibility to handle both above and below grade use and applicable for both residential and commerical projects.

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[1] Results are by volume based on testing per ASTM C272 immersion for 24 hours. [3] Additional details are outlined in DrJ TER 2209-01. [3] Reference *Atlas-Wall-Did You Know?: ASTM Classification of Foam Plastic Insulation.*

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

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