A Guide for Using Expanded Polystyrene

FOR YOUR NEXT PACKAGING OR BUILDING PROJECT

ATLAS

Expanded Polystyrene (EPS) is a rigid, closed cell foam that consists of 98% air. It has excellent thermal properties with a stable R-value, low thermal conductivity and high moisture resistance — making it a popular choice for insulation.

EPS is also a cost-effective option because it has the best price-per-performance ratio in comparison to other insulation alternatives. This versatile material is used in several industries from construction to shipping — keep reading to see the various EPS applications and the benefits it brings to each type of project.

When To Use EPS On Your Project: A Short Guide

EPS is commonly used in a variety of building construction applications. EPS possesses ideal physical and mechanical properties that make the material suitable for thermal insulation in closed cavity walls, roofs and foundations. Plus, its lightweight but durable structure makes it a popular lightweight fill material over alternatives like rocks, soil and woodchips.

In addition, EPS is perfect for temperature-sensitive shipments and is widely used in the food and beverage industry. These qualities make it a critical material used to ship temperature-sensitive medical shipments like vaccines, insulin and blood, and its shock absorption properties guarantee packages are safe throughout the entire shipping process.

Top Reasons To Use EPS for Building Solutions

EPS is a versatile building solution commonly used for its stability, durability and sustainable qualities. When it comes to EPS, the benefits are considerable, especially compared to other insulation products.

Stable R-Value

EPS not only offers great insulation when initially installed, but its R-value remains stable throughout the entirety of its lifetime. EPS insulation retains its thermal and mechanical properties which sets it apart from other insulation materials like extruded polystyrene (XPS).

XPS contains a trapped blowing agent that is released to the atmosphere over time, resulting in a less effective product with a lower thermal resistance.
EPS is made up of only air and polystyrene — there are no added blowing agents that are released to the environment. This means that its R-value does not depreciate over time and will remain as effective in fifty years as it was on day one.

Cost Effective

Compared to most other insulations, EPS insulation is the most cost-effective option, especially when taking time, labor and damage prevention costs into consideration.

Because EPS products maintain their stability and thermal capabilities, they perform longer than the alternatives.

Using EPS products like Geofoam during construction also saves a significant amount of time and labor costs. EPS is lightweight and the Geofoam blocks are easily managed even with a small or inexperienced crew. In addition, EPS Geofoamis so lightweight that transportation costs will be much less than if you were using soil or rocks.

Code Compliant

EPS insulation is widely accepted by evaluation agencies and has been a staple in the building industry for decades. Whether it is ICC, UL, or Factory Mutual, evaluation agencies recognize EPS as a code-compliant material.

In addition, the overwhelming demand for cost-effective and environmentally friendly construction solutions has even more industries turning towards EPS products.

Sustainable Lifecycle

EPS has a lower environmental impact than other construction materials, including XPS, fiberboard, wood and paper.

EPS has low global warming potential, especially when compared to XPS, EPS building materials can contribute to LEED® credits, and the UL Environmental Product Declaration reviews the lifecycle of the product to promote transparency.

Versatility

The flexibility of EPS extends beyond its physical structure. It is an extremely versatile material that is widely used in several construction and insulation applications.

EPS is commonly used as insulation in both new and renovated structures. It can be employed in the walls, roof, floors, foundation and attic for continuous insulation throughout the entire structure.

It also works well with road and bridge construction as a popular alternative to traditional fill materials like soil, wood chips and concrete. The durability and water resistance of EPS mean it won't deteriorate through freeze-thaw cycles, and it helps stabilize areas known for landslides and slope failure.

The list of applications continues making EPS one of the most versatile materials in the insulation industry.

Top Reasons To Use EPS for Packaging

EPS is not only good in construction applications. Due to its durability, thermal insulation and moisture-resistant capabilities, EPS is also used in packaging fragile and temperature-sensitive goods.

Content Specific

At Atlas, our experts design protective packaging specific to what is inside the box, which allows for better protection throughout the shipping process.

We utilize state-of-the-art CAD software to produce a fabricated part that will precisely fit your product. Our designers can ensure a snug fit where there is no risk of damage or surface scratches.

Our in-house packaging engineers are also available to provide 3D modeling and prototyping services. And with 16 manufacturing facilities, we provide nationwide coverage which greatly reduces your shipping costs.

Even though the packaging is content-specific, Atlas EPS products are 100% recyclable at the end of their service life. They can be dropped off at any of our locations for recycling.

Maximum Protection

EPS is one of the most lightweight protective packaging materials, and its intuitive structure absorbs energy on impact and keeps the shock from traveling to the protected product.

One of the main reasons EPS protective packaging exists is for superior product protection from significant drops and impact. The structure of molded polystyrene is built to withstand a significant amount of force while also providing enough cushion so the product inside remains intact and damage-free.

Also, the tight, custom fit of EPS packaging means the product's appearance is protected from even the slightest vibration, and the surface of the product remains pristine and unmarked by the packaging material.

EPS protective packaging is designed to absorb any shock and vibrations, so your product stays safe throughout the entire shipping process.

Temperature-Control

Atlas DuraTherm Cold Chain Packaging is the best solution for shipping temperature-sensitive materials, such as medical shipments and food. Due to its closed cellular structure, EPS is highly resistant to heat flow — this means hot items will stay hot and cold items will remain cold until they have reached their destination.

Wine Shipping

When it comes to ensuring your wine bottles get delivered in pristine condition, Atlas DuraTherm Cold Chain Packaging is the best solution for wine shipping. This EPS packaging solution provides shock absorption, drop protection and temperature control to protect the quality of the wine.

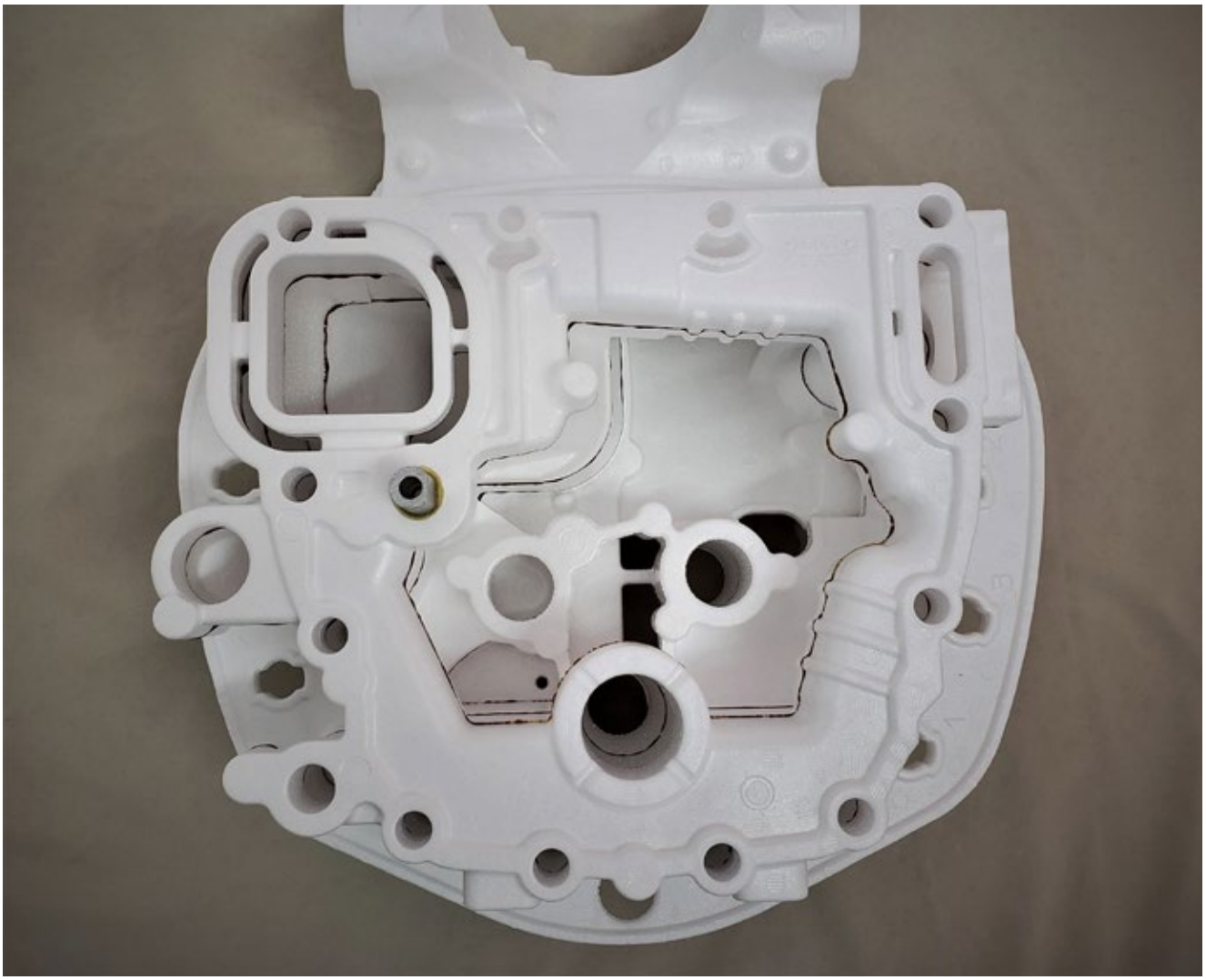
Atlas DuraTherm Cold Chain Packaging is an innovative tightening system that minimizes movement while providing exceptional cushioning with robust chamfered edges and increased wall thicknesses. This wine packaging provides the highest level of protection in the market.

Atlas Molded Products also offers wine shippers in a variety of configurations to meet your needs. We offer the most common 6-pack shipper and 12-pack shipper, along with one, two and three bottle options.

While 95% of wine bottles fit in the standard shipper, Atlas also offers DuraTherm Magnum Wine Shippers for large bottles. Whatever your needs may be, we can provide innovative shipping solutions that will guarantee your product's safe delivery.

Unsure if your bottles will fit? Check out the dimensions and details for our wine shippers.

Other Uses for EPS



EPS is not limited to the construction, insulation and shipping industries. It is a multifaceted resource used in a variety of industrial, medical and consumer applications including:

- Lost Foam Casting
- Automotive Components
- Computer Hardware
- Consumer Electronics
- Medical Vial Protection
- Laboratory Equipment
- Life Preserver
- Furniture Design
- Film & Theater Set Design
- Custom Signage
- Pallets
- Car Seats

Conclusion

Whether you are in the construction industry or looking for temperature-sensitive protective packaging solutions, you can rely on Atlas for all your expanded polystyrene products.

To find out more about how our EPS solutions can help with your next project, reach out to a rep today!