Environmental Benefits of EPS

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Expanded polystyrene (EPS) offers many environmental advantages and is an ideal choice for green building designs. EPS is used in hundreds of applications, often hidden as a core in many building products. From the actual product composition to after use recycling options, EPS has several environmental benefits, which are outlined in the bullets below.

- Unlike extruded polystyrene (XPS), EPS does not contain and has never contained HFC-R134a. This blowing agent is an extremely potent greenhouse gas with a global warming potential (GWP) rating of 1430, which means that R134a has a GWP that is 1430 TIMES the GWP of CO₂. R134a has been outlawed by the EPA as of 2017 for all applications in the US except the XPS industry, which will be required to phase out R134a by 2021.
- EPS has never contained harmful materials such as chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), hydrofluorocarbon (HFC), or formaldehyde. In fact, EPS is comprised of 98% air.
- EPS no longer contains HBCD, a flame retardant that has been phased out. HBCD has been replaced with a second generation brominated flame retardant which has been designated by the EPA as a safe alternative to traditional fire retardants used with other foam plastics.
- In non-load bearing applications, such as EIFS or exterior cavity wall applications, EPS products are available and still meet performance requirements, while using 40-80% LESS plastic material than XPS or polyiso sheathing, resulting in both cost savings and reduced carbon footprint.
- With the advent of graphite enhanced expanded polystyrene (GPS), designers can substitute low density material for traditional XPS & polyiso sheathing, without having to accommodate thicker installation details.
- Since there are so many EPS molders, expanded polystyrene is almost always locally manufactured, reducing the fuel consumption for delivery to a site.
- EPS is the most vapor open of the common rigid foam plastic sheathing products. The designer is able to plan the proper vapor control in the assembly for a given climate without interference from the rigid insulation, reducing the formation of mold or moisture induced damage.
- EPS is recycled for use in foam packaging parts or re-processed into new resin, which can be used for a variety of applications. In 2013, the EPS industry recycled more than 125 million pounds of EPS. A map of recycling locations can be found at www.EPSPackaging.org

In conclusion, expanded polystyrene is a sustainable solution for a wide range of applications. From building applications to packaging material, EPS is a durable and environmentally friendly solution.

The EPS industry has published an Environmental Product Declaration that can be used for substantiating many of the benefits described in this bulletin.

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