

Product Information Bulletin 1018

EPS Geof foam Sustainability and LEED Requirements

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Sustainability:

GeoSpec[®] lightweight fill material is an expanded polystyrene (EPS) geofoam that offers several sustainable features such as:

1. GeoSpec fill material is significantly lighter than traditional earth fill materials or alternate lightweight fill materials so that it requires fewer trucks with lighter loads to deliver material to a project site resulting in less pollution from fuel emissions and less wear and tear on roadways and infrastructure.
2. Traditional earth fill materials are constructed in thin lifts requiring repeated compaction. This requires considerable time, construction equipment, fuel to operate the equipment and ensure adequate compaction.
3. For soft soil conditions, significant waiting time is required after placement of traditional earth fill materials while the underlying foundation soil pre-consolidates prior to construction. In contrast, requirements for pre-consolidation of underlying soils can be significantly reduced or eliminated using GeoSpec fill material. Because each block is equivalent to the height of several soil lifts, construction proceeds more rapidly.
4. GeoSpec fill material is unaffected by the normal range of climate and moisture conditions allowing construction to proceed without regard to weather. In addition, traditional earth fill applications have to be constructed and compacted within relatively narrow soil moisture conditions to achieve the desired dry unit weight.
5. GeoSpec fill material significantly reduces gravity loads and lateral forces on structures that develop due to static or seismic loads because these loads are proportional to backfill material density, i.e., the greater the backfill density, the greater the loads. Thus, structures supporting these types of loads can be designed more efficiently using less structural materials.

LEED Rating System:

Canadian Green Building Council (CaGBC) and United States Green Building Council (USGBC) publish credit based rating systems for the Leadership in Energy and Environmental Design (LEED) Rating System which establishes requirements for design components that impact sustainable design.

Credits or points are earned for meeting specific milestones in various categories. These categories include Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, and Innovation and Design Process.

LEED Point Potential for GeoSpec Lightweight Fill Material:

1. Materials and Resources
 - Building Reuse: Credit 1 – GeoSpec fill material is dimensionally stable and can potentially be reused during building renovations.
 - Local/Regional Materials: Credit 5 – GeoSpec fill material is manufactured at locations in Canada and United States. A Plasti-Fab manufacturing facility will likely be less than 500 miles from the jobsite to help meet the local materials requirements.
2. Energy and Atmosphere
 - Minimum Energy Performance: Prerequisite Credit 2 – Where applicable, the thermal resistance characteristics of GeoSpec fill material helps ensure compliance with local energy codes and ASHRAE 90.1-1999
 - Optimized Energy Performance: Credit 1 - GeoSpec fill material provides a stable thermal resistance (RSI/R-value) without thermal drift, ensuring long term performance.