

Perlite Solutions *for the* Green Building Industry

Perlite is a natural fit for green building initiatives and certifications

Green building solutions are increasingly called for to balance the world's need for more human habitation with limited resources. It is said that buildings in the United States use one-third of the total energy consumed, two-thirds of the electricity, one-eighth of the water, as well as impacting the land. Green building initiatives consider a building's energy use, water use, indoor environmental quality, and the materials used in its construction. In addition, it assesses the effects a building has on its site and uses this information to further sustainable solutions throughout the entire life cycle of a building.

Perlite's versatility and usefulness have an essential role to play in contributing to different types of green building initiatives. Multiple Attribute ratings programs such as LEED (USGBC) and new building standards such as the National Green Building Standard (IgCC), encourage the use of materials and practices that prioritize more energy efficient systems and environmentally friendly materials.



Green roofs made with perlite help manage stormwater, reduce heat island effect, and restore habitat.

PERLITE, THE PREFERRED CHOICE:

- 100% natural; produced without harmful chemicals
- Will not off-gas
- Inert and pH balanced
- Will not leach chemicals into the environment
- Is an excellent insulator
- Lightens denser materials like concrete and soil
- Promotes plant growth; reduces irrigation demand
- Can often be locally sourced
- Provides stormwater detention and filtration
- Is durable and has long-lasting benefits

Scoring LEED Points

While the LEED rating system does not promote specific raw or intermediate materials, specifying perlite and products containing perlite gives planners, architects and developers an opportunity to score higher in a variety of ratings categories



Photo courtesy of Gulf Perlite LLC

Perlite cement-based lightweight insulating plaster application in a 3,000-unit residential villa project.

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HOW PERLITE HELPS				
CATEGORY	SUB-CATEGORY	APPLICATION	HELPING MECHANISM/ATTRIBUTE	LEED CATEGORY
Insulation	Energy Performance Enhancement	Cavity wall insulation, Sub-floor insulation, Insulating wall panels, Insulating plaster, Lightweight roof deck, Phase change insulation	Millions of tiny chambers provide insulation	Energy & Atmosphere (EA)
Insulation	Low Emitting Material	Insulation	Perlite does not off-gas, as opposed to urethanes and even fiberglass	Indoor Environmental Quality (EQ)
Insulation	Innovation in Design	Phase change Insulation, Lightweight concrete ideas	Insulation value plus ability to trap liquids in place	Innovation (IN)
Landscaping	Heat Island Effect (Roof, Non-Roof)	Green roof, Green walls, Landscaping	Encourages plant growth, insulates soil	Sustainable Sites (SS)
Landscaping	Water-Efficient Landscaping	Component of growing medium	Balances air and water holding capacity, encouraging more plant growth while conserving water	Sustainable Sites (SS)
Landscaping	Water Use Reduction	Layer below plants	Retains water rather than draining away	Water Efficiency (WE)
Stormwater	Stormwater Design	Stormwater filter cartridges, Green roofs	Filtration; Holds more stormwater, delaying and clarifying runoff	Sustainable Sites (SS)
Materials	Sourcing of Raw Materials	Locally available; environmentally safe	Often sourced nearby; does not contain heavy metals	Materials and Resources (MR)

(summarized in the table above). Total points awarded result in the achievement of one of four graduated levels of certification (Certified, Silver, Gold and Platinum).

Thermal Performance

Perlite is an excellent insulator and is therefore prized for its contribution to Optimized Energy Efficiency and Thermal Comfort. Perlite is applied both as loose fill insulation in cavity walls and below floors, and as an alternative to sand in lightweight insulating concrete roof designs. Further points may be awarded for Low Emitting Materials since perlite is hypo-allergenic and does not off-gas volatile organic compounds.

Water Efficiency

Another area perlite contributes to LEED certification is in Indoor & Outdoor Water Use Reduction. Horticultural perlite can store trace amounts of irrigation or rainwater for later release and uptake by planting and vegetation.

Sustainable Sites

A further area of vital importance involves LEED certification points for Sustainable Sites. Perlite is used to great effect in Rainwater Management as an element in below-grade stormwater filtration solutions, and above-ground in support of landscaping and roof-top vegetation. Gardens and green roofs contribute to Heat Island Reduction, Protect or Restore Habitat for birds and pollinators, and provide people with calming Places of Respite.

Materials and Resources

Finally, Sourcing of Raw Materials and Environmental Product Disclosures are simplified when using perlite. Perlite is often available locally or can be sourced from only a short distance away. Furthermore, perlite is free of contamination from heavy metals and harmful chemicals.

For more information, visit www.perlite.org, and the U.S. Green Building Council. Also, see info sheet "Perlite: The Versatile Mineral".