



PolySteel Contribution to LEED Certification

As the demand for more sustainable design and construction practices has grown, the Leadership in Energy and Environmental Design (LEED) Rating System has increasingly become the adopted standard used by governments, building owners, and designers to evaluate how a building will ultimately perform within these green criteria. As PolySteel has been providing one of the most energy-efficient, durable, and environmentally responsible building materials available since 1978, it is important to understand how the use of our products integrates into the LEED evaluation system to help you or your client to achieve the level of LEED Certification you are trying to reach. LEED-New Construction (LEED-NC) is a widely used and referenced system for commercial buildings. LEED-Homes (LEED-H) was rolled out in August 2005 in the pilot phase and is focused on the construction of new homes. The following provides an explanation of the LEED points that PolySteel can help achieve under both rating systems.

LEED- NC (New Construction) Version 2.2

It is the ways and means by which PolySteel is manufactured, installed, enhances the overall performance of a building, and is ultimately recycled, that determines its contribution to the achievement of LEED-NC Certification, not simply the use of the PolySteel product itself. There are six categories of design and performance that are evaluated for a total of 69 possible points:

Sustainable Sites	14	Materials & Resources	13
Water Efficiency	5	Indoor Environmental Quality.....	15
Energy & Atmosphere.....	17	Innovation & Design Process	5

The four levels of LEED-NC certification and the required points are:

<u>Certification Level</u>	<u>Required Points</u>
Certified	26-32
Silver.....	33-38
Gold.....	39-51
Platinum	52-69

The first two categories, **Sustainable Site**, and **Water Efficiency**, do not apply to the use of PolySteel in the structure. The remaining four hold opportunities to achieve superior performance for you and your client:

Category 3 Energy & Atmosphere

Credit 1, Optimize Energy Performance

Points Available: 10

ASHRAE/IESNA 90.1-2004 is the benchmark for energy performance measurement for LEED. To achieve points, energy cost savings percentages must be achieved compared to the baseline and measured via a whole building project simulation. If the building is designed and constructed to achieve 35% energy cost savings, 8 points are awarded; if the performance is 42% better, 10 points are awarded. PolySteel's demonstrated history of superior insulation, reduction in air infiltration, and thermal mass performance has reduced heating and cooling costs by 30% to 80% in a variety of applications. This can significantly contribute to the achievement of the maximum points allowable in this category.

Category 4 Materials & Resources

Credit 2.1 & 2.2, Construction Waste Management

Points Available: 2

LEED also awards points for the recycling of construction waste from the job site. One point can be earned if 50% of the waste material is diverted from the local landfill and two points are awarded if 75% of all the waste generated is recycled. All of the components of the PolySteel wall system are recyclable: the forms, including the ties, the concrete, and the rebar used to reinforce it.

Category 4 Materials & Resources

Credit 4.1 & 4.2, Recycled Content

Points Available: 2

Using recycled materials generally uses less energy than the production of new materials. If 10% of the materials used in a project are from a recycled source (post-consumer + ½ pre-consumer), 1 point can be earned. 20% recycled material will earn 2 points. Although the EPS in PolySteel is virgin materials, the steel ties in PolySteel Forms (40% to 50% of the weight of the form) contain 75% recycled material. The ties in the PolyPro Form contain a minimum of 40% post-industrial recycled material, by weight. The concrete and rebar that fills the forms also contains significant post-consumer recycled material (aggregate, fly ash, steel, etc.) that should be analyzed with each project to determine the system contribution to the whole.

Category 4 Materials & Resources

Credit 5.1 & 5.2, Local/Regional Materials

Points Available: 2

Minimizing the impact on the environment includes reducing the energy used to transport building materials to the construction site. Accordingly, 1 point can be earned if 10% of the materials and products used (based on value) are extracted, harvested or recovered and also manufactured within 500 miles of the project, and 2 points can be earned if 20% of the material is extracted, harvested or recovered as well as manufactured within 500 miles. PolySteel manufactures its forms in locations throughout the United States with this target in mind, and reaches over 95% of the country from factories located within this 500 mile standard. The concrete used to fill the forms is also manufactured and delivered from well within this distance, such that the entire PolySteel wall system can contribute to this category.

Category 5 Indoor Environmental Quality

Credit 7.1, Thermal Comfort

Points Available: 1

ASHRAE Standard 55-2004 for thermal comfort standards is the benchmark for evaluating indoor air quality and PolySteel goes a long way towards contributing to this category. The substantial reduction in air infiltration provided by a PolySteel envelope allows for more efficient control of the air that circulates inside a structure, and the relative humidity of the interior space. (There are also no VOC's contained in the wall system, eliminating any off-gassing concerns in the wall materials). The thermal mass of the concrete encapsulated in the forms dramatically improves the thermal stability of the interior environment, minimizing temperature fluctuations and improving overall comfort.

Category 6 Innovation & Design Process

Points Available: 5

This category allows up to 4 points to be earned for exceeding requirements in other categories, or for providing measurable benefits in areas not specifically covered in the other sections. LEED does recognize the use of Cradle to Cradle® Certified products and PolySteel's Silver Certification can potentially earn the project up to one point based on the quantity and value of PolySteel used in the project. One of the concerns about the LEED Rating System is the lack of a clear recognition of the role durability plays in the overall environmental performance of the structure. Under the current system, this recognition must come in the area of Innovation and Design. The combination of EPS insulation, which holds its performance longer than any other type of insulation available, and reinforced concrete, which can hold the system together for hundreds, possibly thousands of years, provides a building with a lifetime of consistent energy-efficient and structural performance. Accordingly, PolySteel has the opportunity to provide additional points in this area. Because PolySteel also creates a cavity-free wall with no nutritional value, mold and mildew have little opportunity to grow in an environment where it is so easy to control the humidity. This design advantage may also contribute to additional credit in this category. The superior performance of the PolySteel wall system with respect to sound attenuation may also provide an opportunity for recognition in urban infill areas where noise is a design consideration. The extraordinary safety PolySteel provides in areas of severe weather or with higher security needs may also contribute to this category. An additional point can be earned by having a LEED Accredited Professional (AP) on your project team.

Taking the existing criteria into consideration, it is evident that the use of PolySteel in your next project can significantly contribute to the achievement of up to 22 of the minimum 26 points required to obtain LEED-NC Certification. Moreover, the extensive range of benefits provided by PolySteel will allow you and your clients to have a building that is more comfortable, safer, less costly to heat, cool, and maintain, more durable, and more valuable. Employee productivity will be enhanced, and the impact on the environment and local infrastructure required to service this building will be minimized all of which are the objectives envisioned by the founders of the LEED Rating System. And all of which is consistent with our mission to Build A Better World.

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