



Using Greenblock Insulated Concrete Forms for the exterior walls of your home or building can be a major contributor toward LEED certification.

Points toward LEED certification can be gained in two ways:

1. *Directly - By meeting a LEED requirement.*
2. *Indirectly - By enabling/facilitating a LEED requirement or by reducing the incremental cost of a LEED requirement.*

Direct Points

The following are points that can be gained directly by using ICF.

Energy & Atmosphere Prerequisite 2 - Minimum Energy Performance (Required)

An ICF building envelope exceeds the mandatory performance requirements defined in ASHRAE 90.1 for insulation, thermal mass and reduced air infiltration.

Energy & Atmosphere Credit 1 - Optimize Energy Performance (1-10 Points)

An ICF building envelope will significantly reduce the heating and cooling loads through its contribution to thermal insulation, thermal mass and reduced air infiltration. These features add to the overall building performance, which combined with other systems could significantly optimize energy performance.

Materials & Resources Credit 2 - Construction Waste Management (1-2 Points)

Waste generated by ICF construction is typically as low as 1-5%. When compared to the waste of alternative methods of construction this is a significant reduction. In addition, the EPS used in ICF is recyclable and often construction waste may be resold to the manufacturer.

Materials & Resources Credit 4 - Recycled Content (2 Points)

The Polypropylene webs in most ICFs are made of 100% post-industrial recycled materials and often make up approximately 60% of the product by weight. In addition, Portland Cement used in the form cavity can contain a significant amount of fly ash (recycled).

Materials and resources Credit 5 - Regional Materials (1-2 Points)

Depending on the building site location, some or all of the ICF materials may have been manufactured within a 500 mile radius (if the product is shipped by water or rail, this radius is expanded to 1500 miles). In addition, it is highly likely that the aggregate concrete used to fill the forms will qualify.

Indirect Points

The following are points that can be gained indirectly by using ICF.

Sustainable Sites Credit 5 - Protect or Restore Habitat (1 Point)

ICF construction can help to protect the habitat on a construction site. Bracing is typically installed only on the interior of the structure and minimal construction activity occurs outside the perimeter.

Sustainable Sites Credit 7 - Landscape and Exterior Design to Reduce Heat Islands, Non-Roof (1 Point)

ICF walls provide designers with greater flexibility when choosing exterior finish materials, including light colored and highly reflective finishes.

Energy & Atmosphere Credit 2 - Renewable Energy (3 Points)

As the energy performance of a building is improved with an appropriate design using ICF, the total energy use of a building will also be reduced. As a result, a given amount of renewable energy generation will make up a larger percentage of total energy.

Energy & Atmosphere Credit 6 - Green Power (1 Point)

As the energy performance of a building is improved with an appropriate design using ICF, the total energy use of a building will also be reduced. As a result, the cost to purchase a green power contract will be reduced.

Materials & Resources Credit 7 - Certified Wood (1 Point)

With ICF construction the need for wood framing is reduced. As a result the incremental cost to use certified wood products is also reduced.

Materials & Resources Credit 8 - Durable Building (1 Point)

As a building envelope product, ICF is highly durable and accommodates several water damage protection strategies (for damp-proofing and waterproofing) that can be practiced on a site specific basis.

Indoor Environmental Quality Prerequisite 1 - Minimum IAQ Performance (Required)

ICFs release zero VOCs and/or air borne particulates post-construction and any adhesive and/or caulking required during construction can be met using low VOC levels. The walls also have very low air infiltration. The requirements for ventilation defined in ASHRAE 62.1 can be met easily without concern for contaminants from the wall envelope.

Indoor Environmental Quality Credit 2 - Ventilation Effectiveness (1 Point)

When properly installed, ICF will contribute to an airtight envelope which would make it much easier for the HVAC designer to achieve increased ventilation while minimizing energy consumption.

Indoor Environmental Quality Credit 3 - Construction IAQ Management (2 Points)

ICFs release zero VOCs and/or airborne particulates post-construction and any adhesive and/or caulking required during construction can be met using low VOC levels. This leads to an improved IAQ for workers and occupants during construction. In addition, ICF is moisture resistant and will not promote the growth of mold and mildew ensuring that the IAQ standards can be met before occupancy.

Indoor Environmental Quality Credit 6 - Controllability of systems, Perimeter (1 Point)

As the energy performance of a building is improved by using ICF in the design, the thermal frequency will be reduced. As a result, the designer will have more control over ventilation systems, and more freedom to incorporate operable windows into the regularly occupied areas.

Conclusion

We hope that this has helped clear up some of the confusion about how ICF can contribute points towards LEED Certification. It is important to understand that each individual case will produce different results but overall, using ICF for exterior building envelope of a structure can contribute significant points.

