

**Environmental & LEED Attributes of Precast Concrete Foundation and Wall Systems**

The use of precast concrete foundations and wall systems are a sensible choice for sustainable development. Precast plants reuse formwork, in itself a conservationist move, and in doing so reduce construction waste that would otherwise be generated at a job site. Because precast concrete foundation components are modular and standardized, they are installed in a quicker fashion and result in reduced construction times and energy usage, noise and emissions from on-site equipment and in reduced site impact.

The cement used in concrete is made of natural materials such as limestone and clay. Most cement plants rely on nearby limestone quarries. The cement industry has made significant progress in reducing carbon dioxide emissions and energy usage in the last 30 years and is continually striving to make further reductions.

In addition, cementitious material used in concrete often contains manufacturing byproducts such as fly ash and blast furnace slag that would otherwise find their way to a landfill. Waste water can be recycled for use in manufacturing. Steel used for concrete reinforcement is typically composed of 95 percent post-consumer recycled content. Aggregates used in the manufacturing of precast concrete foundations and wall systems are generally extracted and manufactured regionally.

Concrete is a very strong and durable material, which is a significant sustainable attribute. It will not rust, rot or burn and has a service life of up to 100 years.

LEED for Homes, measures a buildings performance based on eight categories: site selection, water efficiency, materials & resources, energy & atmosphere, indoor environmental quality, location & linkages, awareness & education, and innovation. Within each of these areas, projects earn points toward certification.

Precast concrete foundations and wall systems are a smart choice for projects applying for LEED certification. Most of the credits shown also have additional innovation in design points that are tied to exemplary performance of the credit listed.

**LEED for Homes Scorecard**

Credit	Description	Credits Available	Comments
ID Credit 2.1	Innovation & Design: Durability Planning	1	Precast has been proven to have a service life up to 100 years, and prevents water infiltration do to its high water/concrete ratio.
SS Credit 1.2	Site Stewardship: Minimize Disturbed Area of Site	1	Precast concrete products are plant cast and delivered to the site

			ready to set so they require very minimal site disturbance to install.
SS Credit 5	Site Stewardship: Pest Control	2	Precast concrete is resistant to all insect attacks and qualifies as pest proof.
EA Credit 1.2	Energy & Atmosphere: Optimize Energy Performance	34	Precast concrete's thermal mass will absorb heat during the day and release it at night when needed to reduce heating/cooling load.
EA Credits 2 through 3	Energy & Atmosphere: Insulation and Air Infiltration	7	With increased insulation and larger modular panels with proper installation it is possible to minimize air infiltration.
MR Credits 1.1 through 1.5	Materials & Resources: Material Efficient Framing	9	Precast concrete is modular and creates very minimal waste. The modular construction will create framing efficiencies and off-site fabrication will add points.
MR Credit 2.2	Materials & Resources: Environmentally Preferred Products	8	Precast concrete that is locally produced will provide points for each application.
MR Credit 3.2	Materials & Resources: Construction Waste Reduction	3	Being plant cast and delivered to the site ready to set creates minimal to zero amounts of onsite waste material.