

Pervious Concrete: LEED Friendly – GREEN Friendly

Why Pervious Concrete?

The EPA, Phase II, NPDES requirements mandate municipalities to require all new developments, whether commercial or residential, to have stormwater mitigation in place. Permits usually are not issued without the stormwater mitigation plan submitted on/with the plans to the municipality. There are some Best Management Practices (BMPs) to help properly mitigate stormwater. Pervious Concrete is one of those BMP options for stormwater mitigation. Not only does the pervious concrete collect, clean and cool stormwater, but it also provides a parking area without using more real estate and has a temporary detention area under the parking lot.

Pervious Concrete can contribute to LEED® 2009 NC in several ways:

- SS Credit 5.2: Site Development –Maximize Open Space
It is possible, for example, for a pervious concrete parking lot to help eliminate the need for a detention pond, and allowing that real estate to be part of the “vegetated open space area adjacent to the building” or parking lot.
- SS Credit 6.1: Stormwater Design-Quantity Control
Option #1 Sites with Existing Imperviousness 50% or less
Option #2 Sites with Existing Imperviousness Greater than 50%
Pervious Concrete can help both conditions collect, clean and cool stormwater, in many cases eliminate postdevelopment runoff and certainly reduce predevelopment runoff by more than 25% (2 year- 24 hr design storm).
- SS Credit 6.2: Stormwater Design-Quality Control
Pervious Concrete is one of many commonly acceptable Best Management Practices (BMP’s) used to collect, clean and cool stormwater. Capable of removing 80% of the average annual postdevelopment total suspended solids (TSS). Pervious concrete is listed and recognized by KC Metro MARC/APWA Section 5600.
- SS Credit 7.1: Heat Island Effect-Nonroof
Reduce heat island effect.
Option #1: 50% of the site hardscape will consist of paving materials with a solar reflective Index (SRI) of at least 29. While regular new concrete does meet the LEED SRI minimum requirement of SRI 29, pervious concrete pavements may or may not. Pervious pavements can be designed to meet the SRI 29 requirement. Pervious concrete pavements must be tested for SRI to list testing data in the LEED template for reporting. See LEED default chart for SRI info below:

Material	Emissivity	Reflectance	SRI
New Gray Concrete	0.9	0.35	38-52
Weathered Gray Concrete	0.9	0.20	19-32
Typical White Concrete	0.9	0.7	86-100
New Asphalt	0.9	0.05	0
Weathered Asphalt	0.9	0.10	6
Pervious Concrete	Needs to be tested	Needs to be tested	Test results here

(Test in accordance with ASTM E 903, ASTM E 1918 or ASTM C 1549)

- MR Credit 2: Construction Waste Management
It is not possible for pervious concrete to singlehandedly fulfill this category. Since concrete is batched for each specific job there is very little waste or overage (which is in itself green). It is possible that “left over” pervious concrete could potentially be recycled back at the ready mix concrete plant with 100% of the

water and aggregate for reuse in concrete, thus keeping it from the landfills. This is something we will see more of in the future. The calculations for the entire job site's waste management for all construction materials figure into this number.

- MR Credit 4: Recycled Content

It is not likely pervious concrete will fulfill this category by itself. However, pervious concrete can help attain this point(s). Points are awarded for 10% (1 pt) or 20% (2 pts) of recycled content based on cost of the total value of the materials in the project. Pervious concrete will likely have fly ash or slag in the makeup of the mix design. Both fly ash and slag are preconsumer recycled materials. The ready mix producer will provide a letter with the appropriate information about the recycled material in the concrete mix to the LEED AP or project coordinator.

- MR Credit 5: Regional Materials

"Building materials or products that have been extracted, harvested or recovered, as well as manufactured within 500 miles of the project site for a minimum of 10% or 20% based on cost, of the total materials value" will earn 1 pt or 2 pts respectively. In the Kansas City metro area, it is likely that the cement, large aggregates, sand, water, fly ash and even recycled aggregates are all within 500 miles of our local job sites. The ready mix producer will provide a letter with the appropriate information to the LEED AP or project coordinator.

- ID Credit 1: Innovation in Design

Up to four additional credits can be attained in this category. This leaves the door open to innovation and creativity. It is possible for technology or sustainable ideas to be applied here to reach new levels. These must be submitted for consideration and approval.

- ID Credit 2: LEED Accredited Professional

"At least one principal participant of the project team shall be a LEED AP." While it is not likely the pervious contractor or pervious ready mix supplier will be a "principal participant" on the project team; it is likely if the project is a LEED project there will be a LEED AP already on the project team. There are concrete industry personnel that are LEED AP and they are usually available for consultation.

- RP Credit 1: Regional Priority

"To provide an incentive for the achievement of credits that address geographically-specific environmental priorities." Up to 4 credits can be earned here. This is up to the decision makers in each region. Go to www.usgbc.org to find a list of regional priority credits. The local version is not yet posted online.

As the LEED system updates and changes these categories and points will reflect those changes. For up to date information on LEED® go to www.usgbc.org. The U.S. Green Building Council (USGBC) is a 501(c)(3) non-profit that developed the LEED (Leadership in Energy and Environmental Design) Green Building Rating System.

For more information on Pervious Concrete in the Kansas City Metro Area go to:

www.concretepromotion.com (pervious tab on the left side of the screen).

