

## The RetroPlate System and LEED Certification

It has been said that the most environmentally friendly product is no product at all. This statement truly embodies the RetroPlate System. RetroPlate polished concrete utilizes the concrete already part of the building envelope to create a hardened, sealed, polished, easy-to-clean floor surface. With the lowest 10 year life cycle cost of any floor coating or covering, RetroPlate polished concrete is the most economic and environmental flooring option available.

It seems everyone today is talking about “being green”, but as Kermit so wisely put it, “it’s not easy being green”. In order to make “being green” easier and encourage sustainable, green building the United States Green Building Council (USGBC) designed the LEED Green Building Rating System in 2000. The USGBC defines LEED as “the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction, and operation of high performance green buildings.”

Building projects are certified, however, products are not. Individual products can contribute to LEED points, but the overall criteria are performance based. Therefore, while RetroPlate is not considered to be LEED-certified, it can contribute points toward the LEED project. This paper will discuss the LEED credits contributed by RetroPlate. LEED has several rating systems - LEED-NC (New Construction and Major Renovation), LEED-EB (Existing Buildings), LEED-CI (Commercial Interiors), and more. This paper will address the credits that apply to LEED-NC, although the other rating systems have very similar categories and meet a similar intent. LEED-NC rating system contains six categories: 1- Sustainable Sites, 2- Water Efficiency, 3- Energy & Atmosphere, 4- Materials & Resources, 5- Indoor Environmental Quality, 6- Innovation & Design Process. The RetroPlate System contributes points within 4 of these 6 categories:

### **Energy & Atmosphere Credit 1: Optimize Energy Performance**

*Intent – Achieve increasing levels of energy performance. Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating. (2 – 10 points)*

RetroPlate can contribute toward 2 – 10 points depending on the minimum energy cost savings percentage of the overall building. RetroPlate significantly maximizes the entire building’s energy efficiency design through two main sources – heating/cooling loads and lighting reduction. The RetroPlate System maximizes the inherent thermal properties of concrete, reducing the cooling load and heating load of the building. Furthermore, RetroPlate increases the light reflectivity by up to 30%, reducing lighting requirements. This saves money and energy on the initial cost of lighting installation and long-term electrical needs.

### **Materials & Resources Credit 1.1, 1.2, and 1.3: Building Reuse**

*Intent – Extend the life cycle of existing buildings.*

RetroPlate can contribute 1 – 3 points depending on the percentage of overall flooring that is polished. The RetroPlate System will last the lifetime of the building and does not have to be removed or replaced if the building is sold or remodeled. In renovation projects, the polishing of the existing floor allows for the reuse of existing materials.

### **Materials & Resources Credit 3.1 and 3.2: Materials Reuse**

*Intent – Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste.*

RetroPlate can contribute 1 – 2 points by reusing the existing concrete floor at a cost of at least 5 – 10% of the total value of materials on the project.



### **Materials & Resources Credit 4.1 and 4.2: Recycled Content**

*Intent – Increase demand for building products that incorporate recycled content.*

RetroPlate can contribute 1 - 2 points by using fly ash and/or recycled glass in the concrete mixture to be polished. The fly ash should not exceed 25% of the total cement content, as RetroPlate does need enough cement for its chemical reaction (densification).

*Note: The RetroPlate densifier does not contain any recycled content, but the containers (drums) are 100% post-consumer recycled content.*

### **Materials & Resources Credit 5.1 and 5.2: Regional Materials**

*Intent: Increase demand for building materials and products that are extracted and manufactured within the region (within 500 miles of project site).*

RetroPlate can contribute 1 – 2 points if the project is within 500 miles of where RetroPlate is manufactured (Springville, Utah).

### **Indoor Environmental Quality Credit 4.1: Low-Emitting Materials**

*Intent: Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.*

RetroPlate can contribute 1 point because the sealer contains no Volatile Organic Compounds - 0 g/L (VOC-free) and contains no solvents. It also eliminates the need for floor adhesives.

### **Indoor Environmental Quality Credit 7.1 and 7.2: Thermal Comfort**

*Intent: Provide a comfortable thermal environment and provide assessment of building thermal comfort over time.*

RetroPlate can contribute toward 1 – 2 points by retaining the inherent thermal properties of concrete to reduce the cooling load and heating load of the building, thus increasing the thermal comfort of the occupants. The RetroPlate polished concrete increases the benefits of in-floor radiant, or solar heating and cooling systems by maximizing the building envelope's thermal mass.

### **Innovation & Design Process Credit 1-1.4: Innovation in Design**

*Intent: To provide design teams and projects the opportunity to be awarded points for exceptional or innovative performance.*

RetroPlate polished concrete avoids floor coverings and coatings. This “naked architecture” goes beyond and above LEED requirements. Maintenance of a RetroPlate floor is simple and very environmentally friendly, using water or a water-based detergent and reducing the floor's life cycle cost. The sealed surface provides allergy relief to occupants because it does not harbor pollen or mold. RetroPlate will perform well under conditions of temperature change, and wet conditions, incase of natural disaster or other emergency.

LEED is not the only sustainable building rating system, but has been used in this paper because it is the current benchmark in the U.S. Other environmental and sustainable rating systems are encouraged and will benefit from the use of RetroPlate polished concrete. Only certified applicators can install the RetroPlate System, in order to maintain the highest standards in polished concrete. RetroPlate and its representatives encourage green building and are proud that RetroPlate has contributed to LEED certified projects, including Silver, Gold and Platinum buildings. For any additional LEED or green building information regarding the RetroPlate System, please contact us at 888-942-3144, or [www.retroplatesystem.com](http://www.retroplatesystem.com)

