



Concrete Parking in Practice

Concrete Parking in Practice is a series of publications from the Maryland Ready Mix Concrete Association (MRMCA) to help specifiers become more familiar with design and benefits of concrete parking lots.

CPIP No. 1

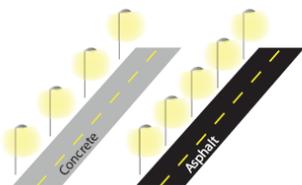
Concrete Parking Lot Lighting

Lighting up concrete Saves Money and Improves Safety

Paved surfaces (such as highways, roads, parking lots, and driveways) typically constitute about 30 to 40% of developed urban areas. The color of these surfaces can help to reflect light back into an area, reducing the number of lighting fixtures needed and making the area a safer place.



Lighting fixtures are an important element of every project. Concrete pavements reflect from **33% to 50%** more light than asphalt so cities can achieve the same street lighting standard, satisfying American National Standards Institute criteria, with a lower initial investment in lighting fixtures and equipment, and, as well, can sustain considerably lower long-term energy costs. A report comparing the environmental impacts of concrete pavements to asphalt pavements indicates that asphalt pavements require more lights per unit length to achieve the same illumination as concrete pavements*. The results suggest **cost savings of as much as 31% in initial energy and maintenance costs for lighting concrete pavements** versus lighting asphalt pavements. Similar results are shown in the figure below, where energy costs required to illuminate



- Asphalt requires 24% more poles
- Initial costs, maintenance costs, and energy costs are all 24% higher



Assumes: Initial cost = \$5,000/pole; Maintenance cost = \$100/pole/year; Energy cost = \$0.0814/kwh; Operating time = 4,000 hours/pole/year

an asphalt roadway are estimated to exceed the costs of illuminating a concrete roadway by 33%. The cost savings for switching from asphalt pavements to concrete pavements can save an owner (such as a city, municipality, or state) millions of dollars a year.

Which pavement do you want your family walking to their car on?



Lighter colored pavements, like parking areas and streets, produce a brighter environment with higher visibility and improved safety. Pavement designers often take pavement color into account when planning lighting needs. Better illumination from lighter pavements is valuable in public and private projects, security or customer appeal. Some sources cite nighttime illumination enhancements of 10 to 30 percent with more reflective pavements.

* Gadjia, J.W., and M.G. Van Geem. 1997. A Comparison of Six Environmental Impacts of Portland Cement Concrete and Asphalt Cement Concrete Pavement. PCA R&D Serial No. 2068. Skokie, IL: Portland Cement Association.

What is the next step?

The MRMCA provides an AIA-approved parking lot design class that may be used for Professional Development Hours (PDH's). We also participate in a national Design Assistance Program (DAP) and we cover the costs of the first project within the state of Maryland. Depending on project specifics, we will offer additional DAP projects at little or no cost. All we need are the current CAD drawings and a few pieces of project information. Contact us for more details.

Maryland Ready Mix Concrete Association

PO Box 617 • Frederick, MD 21705 • info@MarylandConcrete.com • 866-367-2662 (866-FOR-CONC)