# A More Sustainable Choice

You may already know that concrete pavements are longer lasting, more stable, and allow more design choices than other pavements.

But did you know concrete offers important environmental advantages in every stage of manufacturing, construction, and use?

And, because old concrete can be recycled, the cycle of sustainable performance can continue almost indefinitely.

## Natural and Recyclable

Concrete pavements are made from three abundant, locally available ingredients:

- Water
- Rocks (stone, sand and gravel)
- Cement (from abundant natural minerals)

The concrete and cement industries also rely on materials from other industrial processes that are diverted away from landfills. Slag (which comes from the steel industry) can be used to partially replace rocks. Also fly-ash (that comes from the power industry) or ground blast-furnace slag can be used to replace as much as half of the cement used in concrete.

Even the process of making cement uses recycled materials. High-energy waste, such as scrap tires, can be safely used as fuel for the cement making process. Each year, a single cement kiln can use 1 million scrap tires, conserving fossil fuels and reducing waste. According to EPA, the cement industry annually diverts about 53 million tires from the waste stream by safely using them for fuel in production facilities.

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**The greater good …** *Concrete is one of the most environmentally friendly construction products currently available.*

## A Bright Idea

Pavements, sidewalks, and parking lots are brighter at night when they're made with concrete. That's because concrete's natural reflectivity means less light is needed to illuminate them.

Up to 27% of light falling on a concrete surface will be reflected, compared to as little as 5% of light from dark-colored pavements. This saves energy and offers real safety benefits, too.

In urban areas, concrete also reduces the heat-island effect, a phenomenon associated with dark pavement and roof surfaces that cause temperature increases. The urban heat-island effect can contribute significantly to both energy consumption for air conditioning, and to smog formation.

## Filtering Wastewater

Pervious concrete pavements are made of coarse aggregates, cement, water, and other materials that create a highly permeable pavement.

This allows pervious pavements to reduce storm runoff and minimize the amount of pollutants (such as motor oil, anti-freeze, and other automobile fluids) typically contained in storm water.

By allowing some of the rainfall to percolate into the ground, soil chemistry and biology come together to naturally treat the water, which reduces strain on wastewater treatment facilities.

***Filtered naturally …*** *Pervious concrete pavement helps filter water runoff and reduces the strain on wastewater treatment facilities.*

As a result, fewer raw materials are used both in the short term and over the life of the pavement.

Longer lasting concrete pavements also result in less energy being used in construction. That means less motor fuels and oils for heavy construction equipment such as trucks, paving machines, and other machines. It also means less energy required as motorists navigate around work zones or when crews pave at night.

Equally important is a reduction in traffic congestion because there are fewer construction work zones.

## Cleaner, Longer Lasting

Concrete pavements are also beneficial in ways that few people realize. They simply last longer than other pavements, which means they don't need to be rehabbed or reconstructed as often.

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