

## INTEGRATED PAVING SOLUTIONS

**One safety element motorists have no control over is the condition of the road. Concrete pavements are safe by design due to their durability, skid resistant surface, minimal maintenance needs, and the nighttime illumination due to their light color.**

Safety is of paramount concern on the road. When purchasing a car, prospective owners pay attention to details like crash-test performance, headlight brightness, the number of air bags, and anti-lock brakes. Life saving devices like seat belts and car seats or boosters are the law in most states.

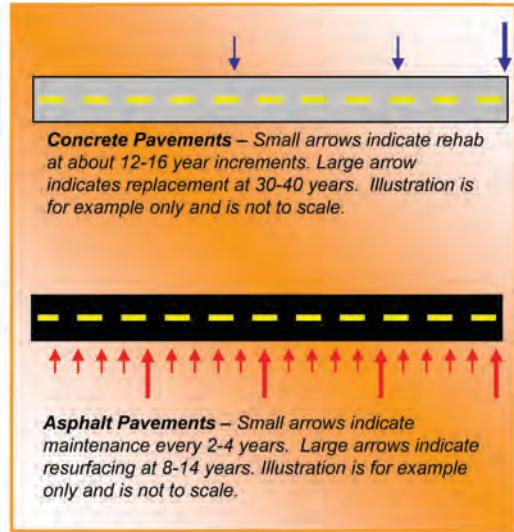
Speed limit signs are posted with safety in mind. Surveillance cameras are installed at dangerous intersections and states are increasingly cracking down on cell phone use while driving, especially texting, all due to safety concerns.

However, one safety element motorists have no control over is the condition of the road. Concrete pavements are safe by design due to their durability, skid resistant surface, minimal maintenance needs, and the nighttime illumination due to their light color.

### Less Maintenance = Fewer Accidents

Due to concrete's durability, maintenance isn't required as often. A recent PCA survey of DOT specifiers concluded that concrete pavement lasts 29.4 years on average before a major rehabilitation is required. Asphalt pavements required a major rehabilitation after 13.8 years.

Additionally, asphalt pavements require regular maintenance every 2 to 4 years to correct rutting, cracking, potholes, and other problems; whereas, concrete pavements typically need only minor rehabilitation at 12 to 16 years.



Courtesy of the American Concrete Pavement Association.  
Originally appeared in *Let's Get Going*, QD008P

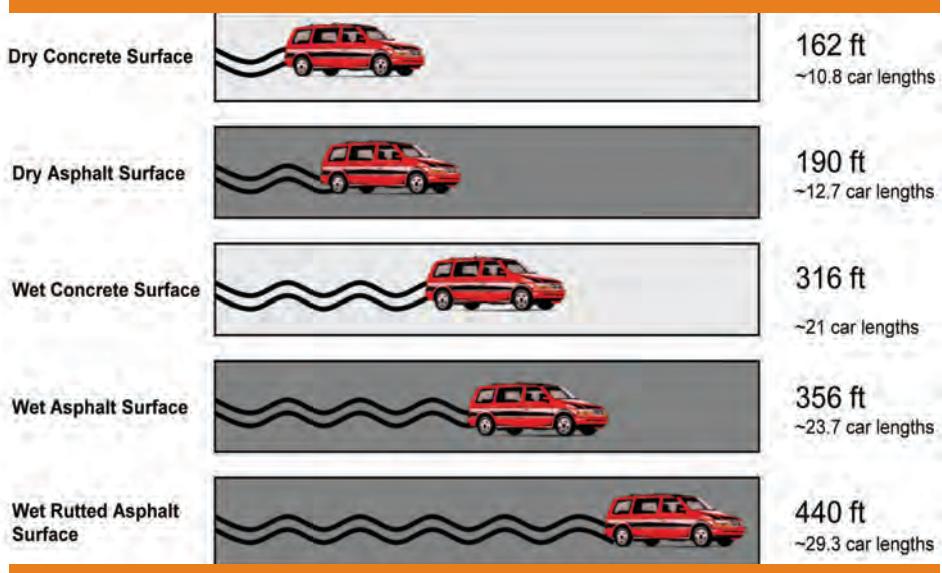
The resulting lane closures and extended work zones greatly increase the likelihood of work zone accidents. Each time there is an open work zone, the opportunity for fatalities or accidents increases dramatically.

The Federal Highway Administration estimates one work zone fatality every 8.2 hours (3 per day) and one work zone injury every 9 minutes (160 per day). Interestingly, over 90 percent of work zone fatalities involve motorists, not construction workers.

Not only do deteriorated roads cost significant dollars for vehicle repairs, they also impact safety.

## SAFETY

**Concrete pavements offer superior skid resistance and ensure shorter vehicle stopping distances in wet weather. A wet, rutted asphalt pavement requires an even greater stopping distance. Concrete pavements never rut or "washboard." Both of these features reduce the dangers of hydroplaning and provide better, long-term traction.**



Source: Chevrolet stopping data (not anti-lock brakes) from report "Safety Considerations of Rutting and Washboarding Asphalt Road Surfaces." Department of Engineering, University of Illinois, 1989.

### A Bright Idea

Concrete's natural reflectivity means less light is required to illuminate surfaces such as roadways, parking lots and sidewalks.

Luminance is a term that refers to the intensity of brightness. Higher luminance values are associated with brighter surfaces. An investigative study determined the luminance of concrete pavements is 1.77 times that of asphalt.

Low light levels in parking facilities can impair an individual's visual capacity. The high albedo of concrete significantly improves both pedestrian and vehicular safety by enhancing nighttime visibility on and along concrete roadways. Enhanced nighttime visibility is intuitively related to improved traffic safety.

A rule of thumb is that for every 10% increase in light reflectance, 10% more light will reflect up to the objects on the surface. Surface reflectance readings on concrete are 4 to 5 times higher than asphalt, which means drivers see the road, other vehicles and pedestrians clearer and sooner.



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0020-11-105