

# cpp for city streets

*Smooth Pavements Last Longer!*

Concrete Pavements  
Can Achieve  
Maximum Longevity  
Using Strategic  
Repair Techniques



**TODAY'S URBAN STREETS HAVE**, in many cases, encountered 40, 50, even 60-plus years of wear and tear. Over the decades, the nature and amount of traffic passing on these streets has changed dramatically, making the need for a smoother, safer ride even more crucial. Replacing or overlaying deteriorated pavement can be time- and cost-prohibitive, but there is another option: Concrete Pavement Preservation (CPP).

CPP is a series of engineered techniques developed over the past 50 years to rehabilitate concrete pavement. A viable alternative to costly asphalt overlays, CPP targets and repairs areas of distress within otherwise structurally sound concrete pavement. A minimally disruptive procedure, CPP is designed to be performed within small work areas and at off-peak hours. CPP procedures offer a repair solution that is proven to last for many years and often decades.

CPP is already a proven solution for highways—which see much more traffic and therefore much more deterioration—throughout the U.S. But city streets are just as integral to our nation's infrastructure, and CPP allows for a long-term solution to bypass the logistical difficulties and high cost that an overlay or complete replacement would involve.



**» BENEFITS INCLUDE:**

BETTER FOR THE ENVIRONMENT	Smaller carbon footprint compared to short-lived asphalt overlays.
SIMPLE	No need for guide rail, sign, shoulder/slope modifications; CPP can be completed in off-peak hours with short and mobile lane closures.
SUPPORTS LOCAL ECONOMY	All products produced in the USA, with little foreign oil consumed in the process.
EXPEDIENCY	CPP can be advertised, bid, let and completed in a short period of time.
FLEXIBILITY	Portland cement concrete pavement (PCCP) can be rehabbed using CPP up to three times with little loss of structural or load carrying capacity. Further, applying CPP in one lane doesn't require application in an adjacent lane.
COST-EFFECTIVE	CPP often costs less than thin asphalt concrete overlays.
SMOOTH	CPP with diamond grinding is smooth, and it retains this smoothness longer than alternative surfaces on properly constructed concrete pavement.
QUIET	Diamond ground surfaces are typically much quieter than alternative surface textures applied to concrete pavement.
SAFE	CPP with diamond grinding is safe. WisDOT has shown that a diamond ground surface has 42 percent fewer accidents in dry and wet conditions as compared to a tined pavement surface.
LONG LASTING	Caltrans research has shown that the average life of a diamond ground surface in their state is 17 years.
FUEL EFFICIENCY	Rigid concrete surfaces exert less rolling resistance than flexible surfaces, thereby saving fuel.
PROVEN	CPP has been used world-wide, dating back to its first use in California in 1965.



## » HOW IT WORKS

CPP is a series of engineered techniques developed during the last 50 years to manage the rate of pavement deterioration in concrete streets, highways and airports. It is a non-overlay option used to repair areas of distress in concrete pavement without changing its grade. This preventive procedure restores the pavement to a condition close to or better than original and reduces the need for major and more costly repairs later. Further, CPP addresses the causes of pavement distress, minimizing further deterioration. In contrast, covering the distress with an asphalt overlay does not correct the cause of the distress and it will eventually manifest itself again, usually as a larger, more expensive problem.

## » BASIC CPP TECHNIQUES INCLUDE:

<b>SLAB STABILIZATION</b>	This technique restores support to concrete slabs by filling small voids that develop underneath the concrete slab at joints, cracks or the pavement edge.
<b>FULL-DEPTH REPAIRS</b>	This procedure is a way to fix cracked slabs and joint deterioration by removing at least a portion of the existing slab and replacing it with new concrete.
<b>PARTIAL-DEPTH REPAIRS</b>	This method corrects surface distress and joint-crack deterioration in the upper third of the concrete slab. Placing a partial-depth repair involves removing the deteriorated concrete, cleaning the patch area, placing new concrete and reforming the joint system.
<b>DOWEL BAR RETROFITS</b>	This method consists of cutting slots in the pavement across the joint or crack, cleaning the slots, placing the dowel bars, and backfilling the slots with new concrete. Dowel-bar retrofits link slabs together at transverse cracks and joints so that the load is evenly distributed across the crack or joint.
<b>CROSS-STITCHING LONGITUDINAL CRACKS OR JOINTS</b>	Cross-stitching repairs low-severity longitudinal cracks. This method adds reinforcing steel to hold the crack together tightly.
<b>DIAMOND GRINDING</b>	By removing faulting, slab warping, studded tire wear and unevenness resulting from patches, diamond grinding creates a smooth, uniform pavement profile. Diamond grinding reduces road noise by providing a longitudinal texture, which is quieter than transverse textures. The longitudinal texture also enhances macro texture and skid resistance in polished pavements.
<b>JOINT AND CRACK RESEALING</b>	This technique minimizes the infiltration of surface water and incompressible material into the joint system. Minimizing water entering the joint reduces sub-grade softening, slows pumping and erosion of the sub-base fines, and may limit dowel-bar corrosion caused by deicing chemicals.

*CPP treatments can be used stand-alone or as a coordinated system as conditions warrant.*



### ABOUT IGGA

The International Grooving & Grinding Association (IGGA) is a non-profit trade association founded in 1972 by a group of dedicated industry professionals committed to the development of the diamond grinding and grooving process for surfaces constructed with Portland cement concrete and asphalt. In 1995, the IGGA joined in affiliation with the American Concrete Pavement Association (ACPA) to form what is now referred to as the Concrete Pavement Preservation Partnership (IGGA/ACPA CP3). The IGGA/ACPA CP3 now serves as the lead industry representative and technical resource in the development and marketing of optimized pavement surfaces, concrete pavement restoration and pavement preservation around the world.