

Concrete Pavement Restoration and Preservation

A Guide to Maintaining Concrete Streets & Local Roads

Faced with limited funding for both capital improvements and maintenance, many cities and counties are facing serious challenges to repairing streets and roads.

In some cases, the service life can be extended using techniques known as pavement restoration methods. These include minor concrete slab repair, diamond grinding the surface, and resealing joints. When done at the proper time, these repairs can bring new life to streets and roads ... and are less expensive than asphalt overlays.

Portfolio of Solutions

The concrete pavement industry offers a portfolio of restoration methods known as Concrete Pavement Restoration (CPR).

CPR is a viable alternative to thin asphalt overlays, which have been proven time and again to be nothing more than short-term solutions.

CPR techniques have been shown to add 12 to 15 years of service life to a roadway, compared with asphalt overlays, which provide between 2 and 5 years. Equally important, the costs are about the same for either method.



Why worry? *Routine pavement evaluations and other “CPR” strategies can help prolong the life of a pavement and help agencies set the stage for funding, plans, and specs.*

The key to any preservation strategy is timing. Planning CPR typically needs to begin at approximately 2/3 to 3/4 of the pavements original design life, so for a 20-year pavement, agencies can expect to do start thinking about pavement preservation at about 12 to 15 years.

This helps ensure that maintenance funding, project plans, and specifications are ready before extensive deterioration has occurred.

CPR techniques typically required for city streets and other local roads include: full- or partial-depth pavement patching, diamond grinding, and joint sealing.

These and other techniques are outlined in the American Concrete Pavement Association’s “Concrete Pavement Repair Manual.”

Yes, it's that easy!

Here's a quick guide to these common CPR techniques, all of which can be done inexpensively and quickly by local contractors.

Diamond Grinding

> Contractors remove top 1/8 in. to 1/4 in. of pavement using special grinding equipment.

Advantages

- Removes bumps, quiets noisy pavements
- Does not affect ground-level or overhead structures
- Does not reduce gutter capacity
- Does not require expensive driveway tie-ins
- Requires only minimal traffic control requirements
- Cost less than a typical asphalt overlay

Partial Depth Replacement

- > Mark outer perimeter of patch
- > Remove affected area
- > Clean allow to dry patch area
- > Place, finish, and cure new patch

Advantages

- Fast, easy, and inexpensive
- Can be done under traffic
- Pre-cast concrete panels are an option

Full Depth Replacement

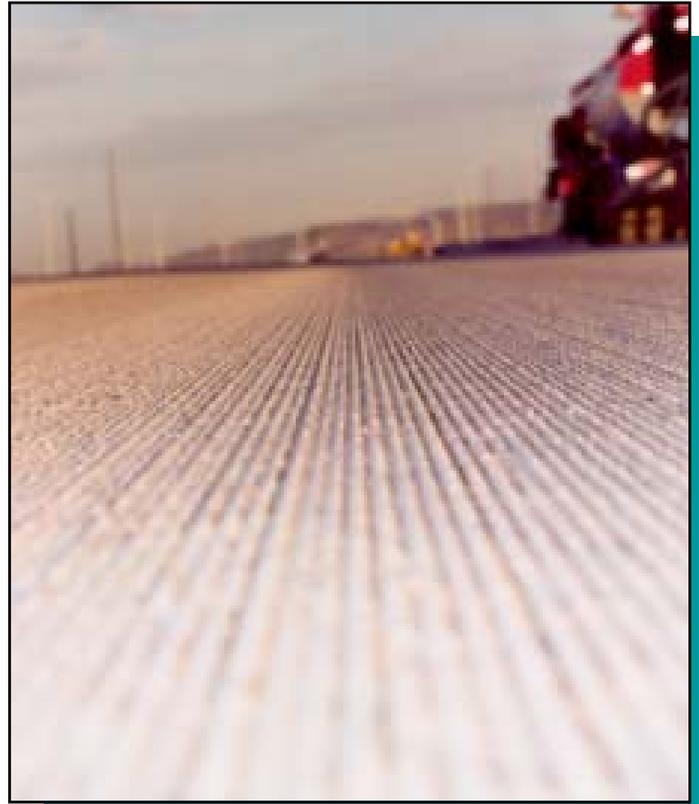
- > Mark outer perimeter of patch
- > Saw-cut the full depth of pavement
- > Remove deteriorated concrete
- > Replace and compact subgrade/subbase
- > Install load transfer dowels
- > Place, finish, and cure new concrete

Advantages

- Fast, easy, and inexpensive
- Can be done under traffic
- Pre-cast concrete panels are an option



Form and function ... A growing number of cities, townships, and counties are incorporating decorative concrete pavements into certain "CPR" operations. Decorative concrete enhances the beauty, while imparting other benefits of concrete.



Shhh! The motorists are listening ... Diamond grinding removes bumps, which makes pavements smoother and quieter.



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