
IS YOUR PARKING LOT A BATTLEFIELD?

How Apartment Owners and
Managers Can Win the War on
Pavement Deterioration





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It's been a long day at the office. As you walk to your car, you notice a large crack zigzagging across the parking lot where it splits and sprawls between potholes – your parking lot is beginning to look like a minefield. You ask yourself: Why is my parking lot cracking? What could have been done to prevent this damage? Once I repair those cracks, how long before they resurface?

Apartment owners and managers who know the answers to these questions, and understand the advantages and limitations of potential solutions, can win the war on pavement deterioration.

THE BATTLE

Asphalt pavement is different than other surfaces such as concrete in that it contains a special binder that keeps pavement flexible. This flexibility lets pavement absorb the constant stressors and traffic loads it carries. But over time, enemies such as oxidation and sunlight can cause asphalt binder to turn hard and inflexible, initiating the deterioration process – and the battle begins.

Your parking lot is exposed to oxygen and UV rays everyday. The combination of these elements damages the chemical bonds that give pavement its strength. When these bonds break apart, the pavement fades in color, becomes brittle, and small fractures in the surface become vulnerable to water, debris, and vehicle force.

As this deterioration process continues, deeper layers become exposed to oxidation, eventually allowing surface cracks to break through the asphalt to the subgrade below. Water is now free to enter through these cracks where it begins to weaken the foundation. Your pavement will no longer be able to hold the traffic loads, and major pavement failures such as raveling, potholes, and severe drainage issues follow. At best, these failures are cosmetically unattractive. At worst, they are serious safety hazards for vehicular and pedestrian traffic.

THE ARSENAL

You don't have to fight pavement deterioration empty handed. There are many simple no-cost and low-cost solutions to help you maximize the life and functionality of your pavement.

Easy, No-Cost Tools

- Check and adjust any leaking sprinklers or irrigation overspray
- Make sure you have no leaking pipes under or near the asphalt
- Maintain a clean, debris-free surface
- Cost Scale: your time

Crack Fill

Crack filler is an elastic material used to seal joints or cracks.

- Recommended to fill cracks ¼" or greater (smaller cracks will not hold crack fill and wastes your precious capital)
- Prevents water from entering subgrade
- Slows oxidation of exposed pavement depths
- Service when needed
- 2-3 year life span improvement**
- Cost Scale: \$

Patching

Maintain large areas of surface deterioration or pavement failure with either a skin patch or an R&R patch (remove and replace). A skin patch involves placing a new layer on top of asphalt, while an R&R patch means removing the poor layer and possibly some subgrade material as well. In this case some aggregate base course and new asphalt will need to be replaced.

- Prevents water from entering subgrade
- Service as needed
- 2-3 year life span improvement**
- Cost Scale: \$

Seal Coats

This layer of protection contains anti-oxidation additives, which help minimize raveling and shield against moisture and the elements.

- Black coating keeps asphalt visually pleasing
- Slows the oxidation effect
- Service every 2-4 years*
- 2-3 year life span improvement**
- Cost Scale: \$\$

Slurry Seal

Older pavements require stronger maintenance tactics. Slurry seal is similar to a seal coat, but is thicker due to additional aggregates and additives. Depending on the use and condition of the pavement, various mix designs and aggregate sizes can be used.

- Lessens oxidation process
- Penetrates small surface imperfections
- Improves severely worn and rough surfaces
- 5-7 year life span improvement**
- Cost Scale: \$\$ - \$\$\$

Micro Surfacing

This cold-mix expansion of slurry seal is a very practical tool in the pavement maintenance arsenal. It contains higher polymer and asphalt residual content, high quality aggregate, and fast-setting chemicals, allowing it to cure within one hour of application. Like slurry seal, various mix designs and aggregate sizes can be used.

- Prevents further deterioration of existing asphalt
- Creates a durable, skid resistant wearing surface in a thinner application
- Ideal for roads, wide-open parking lots, and airfields
- 7-10 year life span improvement**
- Cost Scale: \$\$ - \$\$\$

Asphalt Overlay/Fabric Overlay

Overlays give new life to pavement by laying new material on existing surfaces. Typically, the asphalt is placed at 1½ - 2 inches in thickness. Overlays can be performed with or without a fabric option. The fabric, a geo-textile material, is placed between the existing surface and new asphalt. Depending on the condition of your pavement, the fabric option may reduce reflective cracking and acts as a moisture barrier between the new and old surfaces.

- New surface prevents subgrade moisture
- Improved skid resistance
- 10-12 year life span improvement**
- Cost Scale: \$\$\$ - \$\$\$\$

Note: Different asphalt companies use different mix designs, including some that contain rubberized particles. Be cautious of companies charging extra for rubberized additives as they are primarily designed to dampen vehicular sound on freeways, do very little to extend the life of your pavement, and might even increase the rate of asphalt oxidation.

Removal and Replacement

For severely damaged asphalt, sometimes the only solution is complete removal and replacement. This solution is necessary for pavement with subgrade deficiency or when other maintenance options aren't feasible.

- Excavate soft soil, replace and compact new base
- Creates the opportunity to correct drainage problems
- New parking lot properly maintained could last 20+ years**
- Cost Scale: \$\$\$\$\$

** Years between seal coats depend on pavement condition.*

***Life span improvements are based on pavement that is regularly maintained and depends on the condition of the pavement prior to the method used. Other factors that contribute to a treatment's life span are asphalt mix type, asphalt thickness, construction quality, and traffic loads.*

THE STRATEGY

Although a vast arsenal exists to maximize the life and functionality of your pavement, eventually you will lose the war on pavement deterioration if solutions aren't implemented. Fortunately, you are not alone in this fight. Your greatest ally might just be your pavement maintenance professional. They can assess the condition of your pavement and help you compare cost vs. benefits to maximize your parking lot's life. It is crucial that you find an ally you can trust to be objective and ethical. Otherwise your ally may turn out to be your worst enemy.

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