

How To Maintain Pavement

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Kurt Vonnegut Jr. once said that it is a “flaw in the human character that everybody wants to build and nobody wants to do maintenance.” Although he spoke of more worldly topics, Vonnegut’s sentiment could not be more true for pavement. Properly maintaining pavement helps it reach its intended useful life and postpones the need for future remediation. In many cases, routine maintenance can suspend the need to uproot and repave entire roadways and parking lots.

All pavements, even those currently in the best of shape, require maintenance because expansion and contraction are year round stresses that continuously cause damage. Cracks, pot holes and other types of visual distress are the evidence and end result of the pavement wear process which begins the moment construction ends.

Bituminous asphalt, otherwise known as roadway pavement, is made from a mix of aggregates and asphalt binder. It is a flexible structure, which will crack and eventually fail if not properly supported. Although lack of support is where most pavement problems begin, improper maintenance can be equally at fault for the accelerated deterioration and eventual failure of pavement. Minor issues such as cracking can turn into major problems if not maintained in a timely manner.



Street sweepers help keep roadways clean.

Cleaning:

Maintenance begins with keeping paved areas clean. In addition to making the community look neglected and feel unwelcoming, an unkempt pavement may also cause physical damage to a community’s roadways and parking lots. Like a sheet of sandpaper, loose gravel, clumps of dirt and broken glass can grate down the surface of pavement, substantially reducing its useful life. In addition, litter, fallen leaves and other items found in parking lots can clog runoff drains causing back up and water collection. Ponding is the kryptonite of pavement because water eats away the layers of the road and decreases the strength of its sub-grade or support system. As mentioned earlier, it is lack of support that causes most pavement damage and the problem is further exacerbated by seasonal freeze - thaw cycles.

Many community associations hire street cleaners to regularly sweep their streets and parking lots. These companies use vacuum sweepers, backpack blowers and mechanical gutter brooms to clear debris from their parking lots and streets before pavement damage begins.

Routine Professional Inspection:

Keeping paved areas clean is a good start, but the most important task of proper pavement maintenance is routine inspection, which allows for the early detection and swift repair of minor defects. Small cracks and surface splintering are almost unnoticeable in their first stages, but typically develop into serious defects, such as alligator cracks, potholes and raveling if not repaired promptly. For this reason, routine inspections of the pavement should be performed by qualified and experienced inspectors. For a community association, these inspections generally take place whenever a Reserve Study is performed.

Regular inspections performed by professionals allow for timely detection, prompt repairs as well as the remediation of the root of the problem. In all cases of pavement distress, it is best

to initially determine the cause or causes of the problem. Then repairs can be made, which will not only correct the damage, but will also prevent or delay the defect from happening again. Since water is the kryptonite of pavement, these inspections should include an evaluation of drainage patterns. Time and money spent for such maintenance are well spent because the same repairs will not have to be made over and over again.

Pavement repairs should be made as quickly as possible so that the extent and expense of the damage is minimized.



Sealcoating:

The most common type of maintenance performed is seal coating, sometimes referred to as slurry sealing. Seal coating asphalt is very similar to painting wood. It provides a new, aesthetically-pleasing look to the property and shields the pavement from its environment.

A thin asphalt surface treatment made up of fine aggregate and mineral fillers, a fresh sealcoat gives paved areas a fresh, clean and spotless appearance. Seal coating also improves the texture of the road, offering skid resistance and improved handling for drivers. In addition, slurry sealing treatments create an all-weather, long lasting surface that is waterproof

Sealcoating shields pavement from its environment.

and sun protected. Like water, ultraviolet rays from the sun can cause pavement to fail. Sunlight oxidizes the pavement causing the asphalt to become brittle and begin to ravel. Unprotected, those pavements will fall apart sooner rather than later.

Crack Sealing:

Another type of pavement remediation is crack or joint sealing. The first line of defense against water intrusion, crack sealing is a method of filling in pavement fractures to plug the voids and minimize water infiltration. Pavement generally splits from the bottom and the fracture works its way to the surface. Once a break reaches the surface, the amount of water that can sink down to the base increases severely. If left alone the crack will continue to widen, the sub-grade support will continue to weaken and the pavement will eventually fail.

The material used to seal cracks is heavier than the seal coating applications. Unlike fillers, which do not expand and contract with the movement of the pavements, crack sealer is a flexible rubberized asphalt that bonds to the crack walls and moves with the pavement. Preventing water intrusion helps to maintain the structural capacity of the pavement and limits future degradation. Some experts estimate that sealing pavement cracks will extend the pavement life by three to five years.

Clearly, the less pavement is maintained, the more it will cost the association in future repairs. With this in mind, communities should keep their roadways clean, frequently inspect the paved areas for wear and tear and remediate even minor problems quickly to prevent further damage. By examining their roadways on a consistent basis, boards will be able to take note of cracks and pot holes and have them corrected before they become larger and more problematic. Remedial maintenance, such as seal coating and crack filling, also help black tops endure years of being driven and walked upon.

Overall, proper pavement maintenance prevents the need to rebuild and although building may be more fun, maintenance is definitely more cost-effective.