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Spring is here: Repair winter pavement damage now and save thousands in the future

April 30, 2008 - Owners Developers & Managers

Significant maintenance dollars can be saved by early detection and repair of winter pavement damage. During the coldest months, daytime melting and nighttime refreezing wreaks havoc on paved surfaces as the freeze-thaw cycle wedges open small cracks and breaks loose chunks of asphalt

Even as temperatures warm through March and April, the destructive season for pavement has not yet ended. Pavement surfaces that have been breached by ice will be further weakened as spring rains penetrate to the underlying soil. As the wet soil yields under weight, settlement and breaking of the asphalt surface occurs, and potholes develop. Quick attention to correcting winter damage now can avoid far more costly repairs later. Keep in mind that following a harsh winter, many asphalt maintenance companies will be very busy, so schedule repair work early in the season.

The Pavement Degradation Process

Prolonging the life of your asphalt investment requires a basic understanding of how pavement degrades in the first place. A common misconception among property owners is that the weight and wear of passing traffic are the primary factors in the gradual failure of asphalt surfaces. The natural elements are in fact even greater players in the destructive process.

Solar ultraviolet radiation oxidizes the surface of the asphalt, causing shrinking and embrittlement of the binder. As the binder pulls away from the aggregate, tiny fractures develop in the pavement surface. The sun-damaged pavement takes on a gray coloration, and becomes more prone to cracking from normal traffic activity. Winter freeze-thaw cycles accelerate the destructive process started by the sun. The wedging action of ice opens small splits into larger cracks. Gradually the cracks penetrate to the base soil, providing a route for water to flow under the pavement

Sealing Cracks is a Top Priority

The most urgent maintenance item in the early spring is to seal new cracks in otherwise sound pavement to prevent water penetration and further fragmentation of the asphalt surface. All cracks should first be cleaned with pressurized air, and then sealed with a hot applied rubberized joint sealant that meets federal specifications.

It is very important that a top quality joint sealant with a wide useful temperature range be used for this application. The product must remain cohesive and stand up to vehicle traffic under very high asphalt temperatures during the summer months. It must also remain flexible and continue to seal out moisture under very low wintertime temperatures.

Cut and Patch the Potholes

Areas of spider-web cracks and broken pavement most often occur where simple linear cracks have

been neglected and not properly sealed. Water penetration and winter freeze-thaw cycles widen the cracks, and the damage progresses at an accelerating pace. Eventually the pavement breaks through completely and potholes form.

Areas that have spider webbed cracks or potholes are beyond the point of cracksealing. These areas must be cut square, ripped out, regraded, and then repaved with 1.5" of bituminous binder, followed by 1.5" of bituminous topcoat asphalt. Edges must be emulsified to bond the new pavement to the old.

The Importance of Periodic Sealcoating

Sealcoating is an important means of preventing the solar damage that starts the whole pavement degradation cycle in the first place. Sealcoat is a coal tar pitch or asphalt emulsion fortified with additives. It provides an outstanding barrier against water seepage, petroleum spills, and ultraviolet oxidation. Sealcoating of pavement at three-year intervals will virtually stop solar damage to the binder material. For that reason, sealcoating is a very cost-effective preventative maintenance measure for greatly extending the useful life of pavement.

For the professional property manager, a progressive asphalt maintenance plan can greatly extend the longevity of parking areas. What is the most cost effective time cycle for performing pavement maintenance? The answer depends on local climate and the age and condition of the asphalt surface. Early attention to winter damage and a progressive maintenance plan for your asphalt, including sealcoating, can save considerable money in the long term while improving the overall appearance of a commercial property.

Your pavement contractor can be your best resource in achieving the longest life from your pavement while avoiding liability pitfalls. At U.S. Pavement Services, we provide our customers with free pavement inspection and consultation services, and regularly provide cost effective solutions to a variety of pavement problems.

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