Guide to Pavement Services

For Property Managers

From HSC Pavement Maintenance
What is Asphalt?

**A simple mixture**
Asphalt is comprised of two main parts, liquid asphalt and aggregate. The liquid asphalt acts as a binder, which holds the aggregate together like glue. Asphalt pavement is 95% aggregate and 5% binder, which is mixed together at high temperatures. Once asphalt is compacted by a roller it hardens as it reaches ambient temperature. The U.S. produces around 30 billion dollars worth of asphalt each year, which makes up 94% of public roadways. Asphalt pavement has a lifespan of 20-30 if paved and maintained properly, making it a cost effective surface for both roads and parking lots.
What Causes Deterioration of Asphalt Surfaces

There are multiple environmental factors which can lead to the deterioration of asphalt. Hot and cold weather causes pavement to expand and contract which can lead to cracking and sensitivity to heavy traffic. Water can enter pavement through voids and cracks creating more severe cracking and the breakdown of the sub-base, causing expensive repairs and re-paving. Another element that has a negative effect on asphalt binder is the sun. Over time, harmful uv rays cause the oxidation of the binder, causing the surface of the pavement to be more susceptible the elements. Heavy traffic like fuel and garbage trucks often cause damage to asphalt during the hot summer months when the pavement is softened.
Protecting Your Investment

Seal Coating.
Seal coating is one of the most important elements of a pavement maintenance plan. The process involves spreading an emulsion over the surface of the pavement. Seal coating is used to protect off highway pavement surfaces against gasoline, oil, salt, water, and U.V. rays. Asphalt has very low resistance to these elements. Seal coating covers your asphalt and forms a barrier to these elements while also increasing curb appeal. In fact, seal coating may double, or even triple the life of your pavement. HSC has the ability to apply sealer using either a squeegee or spray method. We typically recommend a 2 coat
system for unsealed asphalt (1 squeegee coat, 1 spray coat). The pavement's texture generally determines whether squeegeeing or spraying will be more effective. Many contractors only apply sealer by spraying, which is not always right for the pavement, thus resulting in a job that is more likely to show wear prematurely. HSC recommends seal coating every 3 years, although intervals can vary based on traffic and environmental factors such as weather and snow removal.

Crack Sealing.
Crack sealing is one of the best ways to protect your pavement, whether it be asphalt or concrete. There are two methods for preparing asphalt cracks. The most effective way to ensure long
lasting repairs is by a process called routing. Routing is done by widening and deepening the crack to .75"x.75" with a saw. This creates a reservoir for the sealant. When sealant is placed in the reservoir, it allows more sealant to cover the crack and allows a stronger bond between the material and the side walls of the reservoir. Another way to prepare cracks is to burn and blow out cracks with hot compressed air. This removes debris and creates a clean surface for the sealant to mate to. HSC uses hot applied rubber to seal cracks in both roadways and parking lots, which is similar to the material we use to seal cracks on state highways and runways. For concrete, HSC uses professional grade silicone sealant.

Asphalt Patching
Asphalt patching repairs areas of damaged asphalt that are beyond repair with typical crack sealant. HSC uses two different types of asphalt patching. An HSC pavement asset manager can assist you in determining which method is best for you.
Full depth patching involves removing and replacing portions of asphalt. The perimeter of the damaged area is cut by a saw and then removed with heavy equipment. Hot mix asphalt is then placed in the patch, either with an asphalt paver or by hand on smaller repairs.

Infrared patching is a method of heating the damaged area and re-blending it with the surrounding pavement. Once re-blended, a joint-free integral patch is formed. Infrared is an invisible wavelength that carries heat. Our repair unit uses this to recycle asphalt in place. Its heating elements produce intense infrared waves that are directed into the asphalt surface. When the asphalt gets over 300 degrees, a small amount of new asphalt is added, as well as rejuvenator. Once scarified with a rake, the asphalt is compacted with a vibratory roller, resulting in a smooth surface.

Line striping in action.

**Line Striping.**

HSC believes first impressions are important. We provide various professional line striping and related services. Your parking lot is the first physical interaction you have with a customer. HSC's quality line
striping assists your visitors in the safe and appropriate use of your parking lot. It also directs traffic to the proper route of entrance and exit, parking areas, loading zones, crosswalks, and defines drive aisles that are wide enough to minimize accidents. Fresh line striping is the best and most economical way to brighten up your parking lot. Specializing in new parking lot layout designs and routine striping maintenance services, our expert team will work with you to keep your parking lot looking fresh, up to date with ADA and fire marshal standards, and maximize user space and ease of use.

Feel free to contact us with any questions about pavement or the services we provide.

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