



FREQUENTLY ASKED QUESTIONS (FAQ)

ASPHALT PAVING AND PATCHING

When can we drive on our new driveway?

Usually in a day or two unless it is really hot. If you can avoid turning the wheels of your vehicles when it is not moving that will help prevent scuffing.

For asphalt resurfacing, depending upon the temperature of the day, one should allow 2 to 6 hours before using the new lot.

Sealcoating needs a 24-hour drying (curing) time after work is completed. Do not allow traffic on your lot before the end of the 24-hour drying period.

Why are there scuff marks on new asphalt surfaces?

Scuffing of newly sealed or paved surfaces are inevitable as it is the nature of asphalt material combined with hot weather. After about a month those scuff marks are rarely noticeable. The scuffs are just the sand being displaced and will wash away. Asphalt requires about 6 months to fully cure. Until that time it is tender and best to be a little careful. Avoid tight turns, and turning the steering wheel when the vehicle is not moving. Avoid sudden stops if you can.

What are some of the causes of asphalt failure?

Inadequate thickness of the pavement section to support the loads that travel across the asphalt, lack of maintenance, and weak or unstable subgrade components.

Asphalt deteriorates when weather and traffic wear "fines" aggregates away. When the "fines" are worn away, there is nothing to bind the larger aggregates together and the surface begins to ravel. This weakens the pavement section and eventually allows water to penetrate the subgrade, which leads to pavement failure.

What causes fatigue cracks in pavement?

Fatigue cracks are the direct result of excessive bending of the pavement surface. Asphalt will fail if subjected to repetitive or excessive bending as from vehicular traffic.

Why doesn't asphalt stay that nice rich black colour?

The UV rays from the sun breakdown the carbon bonds in the asphalt oil thus causing the colour to change from black to gray. It is this oil that binds everything in the asphalt together so when it is depleted erosion starts, some sand particles at first and then larger pebbles to stones then with water infiltration it is all down hill from there. This oil is also what keeps the asphalt flexible. So when the asphalt is gray and oxidized it is less flexible and more prone to cracking.

What causes potholes?

Possible causes of potholes include asphalt that was too thin, base failure under heavy loads or poor drainage that weakens the subgrade and base. Poor quality (segregation in the asphalt, poor compaction, or asphalt that was burnt or did not have enough oil mixed into it) may be a contributing factor.

What causes alligator cracks?

Usually alligator cracking is caused by excessive deflection of the pavement due to an unstable base or due to repeated traffic loads heavier than what the road was built to withstand. If this cracking is not addressed then it will expand and cause more damage.

Why are there cracks in the asphalt along the edges?

Edge cracks are usually caused because there is not enough support next to the road or the base has washed out. It is



good if you can avoid driving on the edge. If you do get cracks have them filled with a rubberized crack filler. If the cracking is severe then it may have to be cut out and replaced.

When should a parking lot be patched?

Patching is a repair operation and can be done as often as needed, until a lot reaches the resurfacing stage (over 35% of the lot is alligator cracked). Damaged areas will get much worse over the winter so it is best to get them done before then. Book the repair work early!

How thick should the asphalt be?

Asphalt pavements have defined strength coefficients that determine their service life based on actual traffic condi-

tions. The thicker the asphalt, the longer the pavement will last. For patching we like to put at least an inch more than what was originally installed.

In general, we use the following guidelines to determine asphalt depths:

- 2" Car traffic only, no truck traffic ever
- 3" for driveways that have the occasional delivery or septic truck
- 4-5" Light truck traffic, 1-5 large trucks per day
- 6-7" Heavy truck traffic, 5-30 large trucks per day
- 8-10" Very heavy truck use (eg: city street or runways)

If there are budget constraints, do less area at the appropriate depth, not more area at less depth!

FREQUENTLY ASKED QUESTIONS (FAQ)

REMOVE AND REPLACE

What is Remove and Replace (R & R)?

This is the process of completely removing the existing pavement and replacing it. It is the most extreme rehabilitation process there is.

When must a pavement be removed and replaced?

If the existing pavement system is completely unusable due to age, neglect or change of use, then there is no other option but to remove and replace it. If the asphalt lot or driveway is 60% cracked then it is more cost effective to remove it all and start over, opposed to continued patching.

Won't all pavements have to be removed and replaced at some point?

No. If a pavement is consistently maintained it will never have to be completely replaced. With sufficient planning, a complete rehabilitation project will restore a pavement

to as new condition or better.

How long does this R & R process take?

The entire pavement system must be removed with excavating equipment and hauled to a landfill. New gravel is trucked to the site, graded and compacted prior to paving. So size of the job and distance from the gravel pit and asphalt plant play a big part in the timing, but on average it is less than a week for smaller lots and two to three days for a large acreage driveway.

Should a geo-technical engineer be involved with a remove and replace project?

Since this is such a large expense, it is wise to seek professional guidance on pavement design and specifications. The existing pavement and sub-grade should be tested and the projected traffic use calculated to determine the best design.



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RESURFACING

What is Resurfacing?

Resurfacing is the process of installing a new layer of asphalt (generally one and a half to two inches) over the existing pavement (also known as overlaying).

When should a parking lot be resurfaced?

Resurfacing a lot is ideal when the surface has become heavily oxidized but the base is still stable. Usually when the asphalt is approximately 12 to 15 years old, provided it was paved and maintained properly (correct thickness for the traffic, proper compaction, correct type of asphalt, proper drainage, etc.)

Resurfacing when the weather is dry and warm is essential. Paving when it is cold leads to cold "seams" and possibly less than ideal compaction, which can contribute to pre-

mature failure. The general rule of thumb is to pave when temperatures are 10° C and rising.

How long should a newly resurfaced lot last?

Depends on deflection of the original pavement (prior to resurfacing), how many trucks use the pavement and the thickness of the new asphalt layer, but generally you can expect at least 8 to 12 years before more serious maintenance is required.

How long before traffic is permitted on a newly resurfaced lot?

Rubber tire traffic will not damage the new asphalt but care should be taken to avoid sharp turns (especially power steering marks created by non-moving vehicles).

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SEALCOATING

What is Sealcoating?

The process of applying an asphalt emulsion over an asphalt surface to prevent UV and oxidation damage and prolong the life of a new, structurally sound, asphalt surface.

Why do I need to seal asphalt?

Asphalt is a very complex mixture of thousands of chemicals, which are predominantly open chain (aliphatic) in structure with a considerable degree of un-saturation within their molecular structure. The open chain provides easy access to water, salt, oils which disintegrates the asphalt molecules, i.e. reducing its binding and waterproofing

abilities. The first sign of this is the change in the asphalt's colour. It changes or fades from black to gray.

Once the asphalt binder has been lost, the surface will become brittle and start to ravel (top layer of rocks will loosen and start to come out) the flexibility will lessen and cracks will appear. Water will get into the base and damage the pavement's load bearing capacity.

By sealcoating, we are providing a flexible, stable and homogeneous compound to act as a barrier to protect asphalt surfaces from the damaging effects of the elements.



How long should traffic stay off the parking lot after you seal it?

Ideally we recommend that it be allowed to cure for 24 hours or at least over night.

How does sealcoating work?

It is like sun block. We know that asphalt is a mixture of aggregate (small stones) and mineral fillers (sand) combined with 4.5% to 12% (average 6%) asphaltic binder (asphalt cement). It is this binder that needs to be protected from deterioration. This binder is highly subject to problems with ultraviolet rays, moisture and traffic overload.

By placing a sealcoat over the asphalt you are placing a protective barrier over the asphalt. This process of applying a sealcoat every 3-6 years will double the life of your asphalt, saving you from having to carry out costly repairs.

When should a parking lot be sealcoated for the first time?

Short answer is one year from construction. Ideally an asphalt surface should be sealed as soon as the pavement has fully cured (6 months). Sealer can only be applied when it is sunny and the temperature is 15°C and rising.

How long should the first sealcoat application last?

This depends on many factors: the number of coats, the amount of traffic, how much sand and salt is put on in the winters, whether it is in the shade more than the sun, how much water runs over it, etc. Having said that, the average for driveways is between 4 and 6 years. Parking lots and Condos 3 to 5 years but less at the entrances.

Will sealcoat waterproof a cracked pavement?

Absolutely not! A sealcoat is a preservative coating but has no structural value. Minor cracks should be sealed with a hot pour, rubberized material prior to sealcoating. Network cracked areas should be excavated and repaired with a sufficient thickness of asphalt prior to sealcoating.

Will sealcoating allow us to get another couple of years out of our old, cracked pavement?

Unfortunately no. This is a common misconception. Sealcoating at the end of a pavement life cycle is a waste of money. It would be like someone painting a car that had rusted out. Cracks will only be highlighted and water will continue to have a free path to the base layer. If a driveway or parking lot is too far gone, it is better to save the money spent on sealcoating and apply it towards repairs and eventually an overlay of new asphalt.

What is Micro Pave 2000?

Micro Pave 2000 is in the same family of products as Slurries and Micro Surfacing. These products have been used primarily on streets and highways for over fifty years.

Slurries and Micro Surfacing are made quickly and accurately at the job site. Mixing and spreading are carried out in one continuous operation with large expensive equipment.

Micro Pave 2000 is mixed in a stationary plant. It is stabilized so it can be transported and placed by small specialized machines capable of working in smaller areas such as parking lots, residential streets, driveways, pathways, etc.

What is a slurry seal?

It is similar to a sealcoat but has a significant amount of graded aggregate mixed into the emulsified asphalt. It is applied to the pavement by a squeegee and is generally used to improve the quality of the pavement surface rather than just to maintain its current state.

Will the sealcoating material track into my buildings?

Each section must be secured prior to the start of work. Schedules must be communicated to the tenants so that everyone understands the traffic patterns throughout the project. The material will track if it is walked on or driven on before it has dried.



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How do you block off sections in a parking lot?

Developing a plan to section off the parking lot to maintain traffic flow through the project is critical to its success. Tenants must be informed throughout the process so they can plan accordingly. Each area is blocked off with tape and barricades. Each parking lot is different so the sectioning plan and barricading plan must be customized to the needs of the tenants and the property manager.

Why are there tire marks showing on a newly sealcoated parking lot?

The material dries to the touch in a few hours but it takes several weeks to fully harden, especially in the hot sun. Expect power steering marks as the sand is sheared away from the sealer but over time these marks will go away.

How long before people can walk on the freshly sealed pavement?

People can walk on Micro Pave 2000 after 1 or 2 hours depending on temperature and relative humidity.

How can Micro Pave 2000 be so cheap compared to asphalt?

Slurry seals are not usually as cheap as our product but that is because we do not need as expensive equipment or as many workers. Also most sealcoating products available in Canada were manufactured in the USA and with the dollar exchange it gets expensive. Not so with Micro Pave 2000, Lambert Bros. Paving manufactures it here in Alberta at a stationary plant.

FREQUENTLY ASKED QUESTIONS (FAQ)

CRACKSEALING

What is Cracksealing?

Cracksealing is the process of injecting a hot pour rubberized sealant into isolated cracks in the asphalt pavement to prevent water from penetrating the sub-grade and stone base.

What causes the cracks in my asphalt?

All pavement failure starts with a crack. Asphalt cracking is caused primarily by the effects of sun and moisture and ground movements. Asphalt is flexible when new, but with age it becomes more rigid and is less able to tolerate vertical deflections. This causes a tension and pulling apart in the pavement and before you know it you have a crack. Once the crack is open, moisture is able to reach the pavement's subsurface and soften it, or freeze and expand it. Soon the pavement begins to deteriorate around the crack, creating a larger problem. Proper attention to the cracks will prevent the problems from

spreading and double the life of the pavement. Treating the problem while it is still small will pay big dividends later by delaying costly resurfacing.

When should cracks be sealed?

The sooner the better. Any crack will allow moisture to penetrate to the subsurface and the larger the cracks the faster this happens. The goal of a good pavement management plan should be to keep the moisture from entering the asphalt pavement; however, only isolated cracks should be sealed, never alligatored areas.

How often should a lot be cracksealed?

Since this is a maintenance operation, it can be done as often as needed. Pavements on a yearly maintenance and repair plan, should budget for this once a year.



Why do you rout or cut the crack and make it bigger?

This is similar to why a dentist drills into a cavity to make it bigger, so he can better fill it. The regular cracksealing operation (which we do not recommend because it is just a band-aid solution to a problem that requires stitches) involves trying to pour the sealant into isolated cracks throughout the pavement. When routing is added to this operation, all cracks are routed to a uniform width before injecting the sealant. Routing provides a uniform reservoir to hold the material, thus widening the crack, which reduces the degree of expansion during freeze thaw cycles.

Why can't alligatored areas be cracksealed?

When alligatored areas appear in a parking lot it means that water has penetrated the sub-grade layer and the pavement can no longer support the weight of the traffic. Cracksealing is not the solution at this stage.

How long does it take the material to dry?

The cracksealing material is applied at 300° F but cools to the touch in minutes and can be open to traffic almost as fast without worry of it tracking.

What are the benefits of Petrotac?

Petrotac serves as a waterproofing membrane between the existing surface and the new surface. It adds about one inch of proportionate asphalt strength to the overlay. It also aids in slowing the migration of cracks from the underlying surface to the new one. Ultimately, Petrotac significantly extends the life expectancy of a new asphalt surface.

Will sealcoat material stick to cracksealing material?

The two materials will bond but since the cracksealing material is designed to flex through a wide temperature range, the sealer will chip off from the crackseal. Expect a color difference between the two materials.

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SPEED HUMPS AND SPEED BUMPS

What are Speed Humps and Speed Bumps?

Speed Humps are large traffic calming devices usually installed on streets to reduce speeding and cut through traffic. Speed Bumps are narrow traffic calming devices used in parking lots to protect pedestrians.

What is the standard size for a Speed Hump?

Speed Humps typically are 24 feet long x 12 feet wide x 6 inches high. Speed Humps are intended to reduce speeds to 15 - 25 km/hr.

What is the standard size for a Speed Bump?

Speed Bumps are typically 24 feet long x 18 inches wide

x 3½ inches high. Speed Bumps are intended to reduce speeds to 3 - 8 km/hr.

Where should Speed Bumps be installed?

Generally, Speed Bumps are installed in a parking lot to slow drivers down and protect pedestrians. If possible, install Speed Bumps between islands so that cars cannot drive around them.

Where should Speed Humps be installed?

Speed Humps are usually installed on streets. Condos or cities request them to reduce speeding and cut through traffic on neighborhood streets.