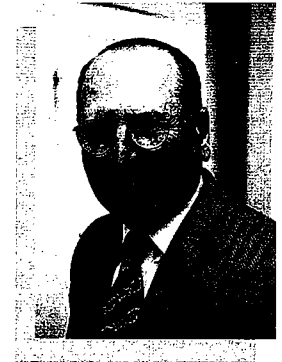


Hot weather can wear on pavement, crews, equipment

Excessive heat can bring out the vulnerabilities of machines, asphalt, concrete and workers.

By A.E. Johnson Jr., P.E., Staff Engineer



Johnson

We know that cold weather brings with it harsh conditions that can be extremely damaging to city streets. Hot weather can also have an adverse impact on the city street budget. Just think of the lost hours for workers as a result of wasp stings, tick bites and poison ivy!

When the temperature soars, so does the operating temperature of the internal combustion engine.

The higher operating temperatures can increase stresses on internal parts, causing accelerated engine wear. The additional engine heat shortens the life of hoses, gaskets and the hydraulic system.

It is important, especially in the summer, to watch the temperature gauges on equipment.

If the gauges climb into the red zone, shut down the equipment immediately.

When an engine overheats and locks up, the alternative is a complete engine overhaul—for the lucky ones.

Hot weather thins the viscosity of the engine oils and greases—thereby shortening their useful life.

More frequent checking of the engine oil and lubricating vital parts is required during the summer.

Electric motors have a major problem with excessive heat. The expansion of the rotating parts and the breakdown of insulation cause accelerated wear; service life decreases.

Cooling—as simple as an ordinary household fan blowing at the unit—can greatly improve the life of most electric motors.

Concrete streets can crack or explode when the surface temperature gets high during the summer months.

This is a result of the concrete expanding but the joint and existing cracks having been restricted due to the entering of foreign particles.

As the concrete slab warms up, internal stresses occur, causing the slab to expand and push upward.

Asphalt pavement can rise to temperatures of up to 150° Fahrenheit during hot summer days.

If the asphalt pavement has too much asphalt cement, bleeding can occur, and rutting of the surface will follow.

An asphalt pavement can decompose if free moisture is present and the temperature converts the moisture to steam, causing poor aggregate to strip.

Not a lot can be done to prevent the pavement damage as a result of hot summer weather.

Properly designed asphalt mixes are a great help in reducing rutting and stripping.

Cleaning and sealing joints and cracks in concrete pavement will help the concrete cope in hot weather.

Historically, summer weather brings increased travel, tourists and special events.

This means more exposure of your street crews to traffic and increased risks.

Try to schedule your street maintenance activities to avoid peak traffic conditions.

Most importantly, keep the water jug handy, along with insect repellent and sunscreen.

It's tough out there on those hot city streets. Make it as easy as possible on your street crews. And remember the ventilated safety vests.



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