

GEODESYC

REPORT OF INVESTIGATION

Staining, Residue, and Seepage Causes on Newly Tar Sealed Surfaces
25787 North Hillview Court
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ROI# AU-2106 12 SEPTEMBER 2009

Prepared For: Jim Browne



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12 September 2009

To: Jim Browne

For: NAC Supply

Report of Investigation #: AU-2102

Title: Staining, Residue, and Seepage Causes on Newly Tar Sealed Surfaces

Tar (black) sealants and other petroleum based sealants, are commonly used to seal driveways and parking lots. The sealants used are proven to help protect the underlying pavement. On rare occasions certain temporary discoloration can occur on the pavement surface due to outside factors. Among the most common colors are white, brown, and rust colors.

When a driveway or parking lot is freshly sealed the coating has a uniform deep black appearance. As a result, any slight discolorations due to new accumulations of residues or deposits can often stand out in stark contrast against the otherwise unblemished new black surface. These discolorations from deposits also occurred on the original pavement, but were more hidden in the mottled gray, salt and pepper background of the worn pavement. However, with a fresh coat of dark seal they can stand out better than they would on an uncoated aging pavement surface. The discolorations caused are not from the tar sealant itself but actually come from common natural compounds found in the water and soil.

One of the most common colors that appear on a newly sealed surface is white. The white color can be caused by several different things. The most common are mineral salts deposited on the pavement by run-off, or pushed up to the surface from rain saturated soil in the surrounding landscape. Even though you may not realize it, salt is present all year round. After heavy rains it will often be dissolved from the soil into puddles of water. As the water dries, the salt is deposited on the surface leaving behind a white residue. After several more rains the salt is usually washed off and the color disappears.

White is also caused by calcium carbonate, the building block of limestone. Like salt, calcium carbonate is common in soil. Calcium carbonate dissolves from soils and rock by rain and is deposited in a similar manner as salt. This process occurs on uncoated pavement as well but it is not usually observed due to the fact of untreated pavement being lighter in color.

Rusty red and orange brown colors are also commonly precipitated onto a newly sealed surface. Rusty colors are also present in soil and will be deposited in a similar manner as salt and calcium carbonate will. Rusty colors have another source not connected to the tar sealant. Vehicles are often a main source of rust. If you look at the bottom of your car you will notice rust everywhere. This can flake off or be washed off in minor amounts during a rainstorm. As in the case with white discoloration it is often noticeable after the coated surface dries. It too is usually temporary and will eventually wash away with time.

Brown is perhaps the third most common color noticed. Brown colors can be caused by rust but organic matter can also be the source. As plants decay after death, such as in the fall when leaves die or from old grass clippings, they are broken down into smaller and smaller pieces. These tiny brown flakes can accumulate in low areas of a pavement surface. Like in the previous cases it too can be swept away in later rain storms.

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Discoloration has many sources such as soil, vehicles, and plants. No matter what the source, the main method of transportation is water, usually in the form of rain. The discoloration is not caused by the sealant itself but rather by deposits accumulated on the surface. As a result if we see something new, in this case tar sealant, we tend to think that it is somehow "nature proof". As we have created the modern world in which we live, we tend to forget that natural processes do not stop because of us, under any circumstances. Rain and snow will continue to fall, cars will continue to rust, and plants will continue to die, and sometimes their byproducts end up on our brand new driveway.

References:

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Thank you for your business,

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