

Why Refined Tar Emulsions Last Longer Than Asphalt Emulsion Sealers

Refined tar emulsion and asphalt emulsion sealers are both manufactured to provide protection to asphalt pavements. Refined tar emulsion pavement sealers provide a significantly higher level of protection than petroleum emulsion pavement sealers. They resist all of the elements that degrade pavement coatings more effectively than asphalt emulsion sealers.

Coal and petroleum are both fossil fuels, also known as hydrocarbons. Coal occurs in nature in solid form while petroleum occurs naturally as a liquid. Coal tar is derived from the process of creating metallurgical coke in steel production. Steel production requires very high temperatures. To accomplish this, coal is heated, under pressure, to produce metallurgical coke, which burns at the higher temperatures required. The vapors driven off in this process are condensed and refined into various distillate products. They are used for wood treatment, as ingredients in cosmetics and medicinal products and as a binder for electrodes used in the production of aluminum. They are also further refined to produce a durable resin for coatings applications.

Asphalt comes from the same petroleum refining process that yields gasoline and motor oil.

Though they are both hydrocarbons, they have significant differences in structure. Asphalt is an aliphatic hydrocarbon. This means that its molecules are arranged in a straight line. Refined tar is an aromatic hydrocarbon. It has a ringed molecular structure. What does this have to do with pavement sealer you ask?

Naturally occurring elements and common chemicals have a much easier time attacking a straight line hydrocarbon molecule than they do a ringed one. Gasoline, oil, anti freeze and many other things that are likely to drip onto asphalt pavement will readily dissolve the asphalt binder or any asphalt based pavement sealer applied to its surface. They are unable to dissolve pavement sealer made with refined tar.

Asphalt is readily degraded by oxidation from sunlight as evidenced by unsealed asphalt pavement turning gray from deep black in just a few years time. Refined tar emulsion is highly resistant to oxidation due to its molecular structure. It will retain its black color over time, sealing in and protecting the asphalt binder of the pavement below.

Pavement sealer made from refined tar lasts longer. For this reason, The Brewer Company continues to manufacture pavement sealers from refined tar, in addition to petroleum resin and asphalt based sealers.