

The Brewer Company

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The following is a reprint of an article from "On The Pavement", The Brewer Company's newsletter for pavement maintenance contractors:

Why Coal Tar Emulsions are Superior to Asphalt Emulsions

Coal tar emulsion and asphalt (petroleum based) emulsion sealers are both manufactured to provide protection to asphalt pavements. Coal tar emulsion pavement sealers provide a significantly higher level of protection than petroleum emulsion pavement 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 a byproduct of steel production. Steel is melted at much higher temperatures than those produced by burning coal. To accomplish this, coal is heated, under pressure, to produce coke, which burns at the higher temperatures required. The vapors driven off in this process are condensed and refined into various grades of coal tar. 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. Petroleum (and hence asphalt) is an aliphatic hydrocarbon. This means that its molecules are arranged in a straight line. Coal (and hence coal tar) are aromatic hydrocarbons. They have 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 coal 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. Coal tar emulsion is highly resistant to oxidation due to its molecular structure. It will retain its black color over the course of its wearing life, sealing in and protecting the asphalt binder of the pavement below.

For these reasons, The Brewer Company has continued to manufacture pavement sealers from coal tar, providing our customers and in turn *their* customers with the proven performance they have come to expect over the years.

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