Coal Tar Pavement Sealants & Polycyclic Aromatic Hydrocarbons (PAHs)

Poly cyclic Aromatic Hydrocarbons (PAHs) are groups of chemicals formed during the incomplete burning of coal/coal tar products and other organic substances. Coal tar pavement sealants emit PAHs as part of the sealant application process which remain on the paved surfaces. During rainstorms or floods, trace PAHs can be picked up and conveyed by storm water runoff flowing over sealed pavement surfaces into rivers, creeks and channels.

Environmental & Health Hazardous Effects of PAHs

Exposure to PAHs through contact with contaminated water, soil or debris can potentially inflict adverse health-effects depending on the length, type and extent of exposure. Although PAH exposure will not necessarily result in hazardous effects in humans and wildlife species, the following effects have been documented in detection of high PAH concentrations found in contaminated water, runoff sediment and/or sealcoat dust:

ENVIRONMENTAL:
- decreasing reproduction rates and populations of aquatic invertebrate species in watershed habitats (insects and/or small amphibious creatures living in streams and lakes)
- invertebrate populations are monitored as indicators of water quality in watersheds due to their importance in habitat-based food chains

HUMAN HEALTH:
- increased incidence/risk of developing cancer (long-term exposure to high PAH concentrations)
- increased incidence of skin irritations/rashes
- increased incidence/risk of developmental and/or sexual reproductive effects (documented in lab animals)

Coal Tar Pavement Sealant Product & Pavement Building Material Alternatives

PAVEMENT SEALANT ALTERNATIVE: Asphalt-based pavement sealants
- offer negligible PAH levels (about 1/1000th PAH levels) compared to levels in coal tar sealcoats
- offer faster drying of coating finishes and do not stain pavement surfaces when applied
- comparable product costs to coal tar sealants and can provide similar dark surface appearance and surface protection for 2-4 years when properly applied

PAVEMENT BUILDING MATERIAL ALTERNATIVES:
- new pavement construction can utilize alternative surface materials (concrete, permeable pavement, etc.)
- while upfront costs for installing alternative surface parking lots are higher than asphalt surface pavement lots, long-term maintenance costs are comparatively lower since the former types do not require sealants and offer longer life-spans than asphalt-paved surfaces