



## TECHNICAL BULLETIN CP-22

# TIRE MARKING / PICKUP OF CONCRETE SEALERS

Tire marking or hot tire pickup on concrete sealers and coatings is caused by a phenomenon called “plasticizer migration.” Plasticizers are polymer compounds added to rubber and plastic materials to make them softer and more flexible. The rubber used to make car tires contains plasticizers to make the tire softer, which improves traction. When the car is driven, the tires heat up, causing the plasticizers to soften and leach out of the rubber. When a hot tire is driven (especially in a turn) or parked on concrete sealed with a cure & seal, the plasticizers migrate into and discolor the sealer/coating. The better the tire quality, the higher the quantity of plasticizer — and the greater the chance for hot tire marking. Lower-quality tires are harder and contain less plasticizer, so they usually result in less hot tire marking on coatings and sealers.

Beware - other rubber materials placed on sealed or coated concrete can cause plasticizer migration as well. Rubber mats, rugs with rubber backing, weatherstripping on the bottom of garage doors, and rubber vacuum cleaner tires are just a few of the items that the technical support group has fielded complaints about. These and other rubber items may stick or cause discoloration when left to sit on concrete sealed with a cure & seal product.

Most discoloration from plasticizer migration occurs on acrylic or styrene/acrylic cure & seals, because the acrylic polymers have minimal “crosslinking”. All polymers are crosslinked to some extent - the polymer chains link together to forming a tangle of polymers, like a bowl of spaghetti. The greater the extent of crosslinking, the denser the product and the more resistant it will be to discoloration.

Epoxy and urethane sealers and coatings are much more crosslinked than cure & seals and are therefore less likely to tire mark, but it is still possible. However, because of the effects of concrete moisture, sunlight, weathering, and freeze-thaw, epoxies and urethane are not recommended for use on concrete outdoors. A penetrating silane or siloxane sealer may be a better choice for sealing exterior concrete where tire marking is or may be a problem. Silane and siloxane water repellents do not form a film on the concrete surface, and do not react with plasticizer in tires.

To remove discoloration from plasticizer migration, cleaning the surface with a concrete degreaser such as Euco Clean & Strip should work well, but the effectiveness will depend on the level of discoloration. If the discoloration has migrated deep into the sealer or coating, you may need to totally remove it with a solvent, Euco Clean & Strip, or by mechanical means. If tires have picked up and removed the sealer or coating, the area may be recoated, following manufacturer’s instructions.