

BULLETIN

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Asphalt Coke

Asphalt coke is the carbonaceous, friable dry residue resulting when asphalt is overheated or distilled to dryness. Coking is an inherent property of asphalt, as asphalt itself contains approximately 0.1% coke before heating. Coke is more dense than asphalt, and will therefore collect at the bottom of a tanker or tank. Once these small particles of coke start to build-up in the tanker, they act as starting sites and more coke adds on to form large chunks

With enough build-up, the coke will start to honeycomb. This is primarily due to the constant heating and re-heating that occurs in the tanker. When a honeycomb of asphalt becomes large enough, it may dislodge and float to the top of the asphalt. It floats even though it is denser than asphalt, because of the honeycomb structure. The holes in the structure fill with asphalt and air, pushing the structure to the surface. Although these chunks look large, the actual coke content is a very small percentage. The coke material should be cleaned out from tankers so it does not clog filters and pumps. The formation of coke is increased if the asphalt is heated above the 600-700°F range.

In tankers, where the heating of asphalt is done primarily by a propane flame, temperatures will exceed 700°F at the point of contact between the burner wall and the asphalt. Coking is even more evident in cases where the flame is turned off at night and restarted in the morning. This causes the hardened asphalt, in contact with heating pipe, to be held static against the high temperature source for extended periods of time, while the surrounding asphalt slowly softens.

A roofer cranking the heat on the tank in the morning, (so that application may begin as soon as possible), is encouraging an accelerated coking problem. A better way to handle the situation is to keep the asphalt at a constant temperature with hot oil, and to heat the asphalt to process temperature slowly. Unfortunately, this option is not always feasible for the roofer, but is the procedure used by asphalt manufacturing plants. Thus, in the asphalt plants, the formation of coke is not as noticeable as it is by the roofers.

Note: The information and instructions contained in this bulletin are intended only for qualified professional roofing contractors as general information and guidelines, and are not to be used as a substitute for modified, supplemented or specific techniques for a particular job based on the circumstances. Contractors are advised to follow all manufacturer's application instructions, warranty requirements and applicable building and safety codes.