

Implication of Waste Oil on Aramid Filter Bags

General comment in respect of Aramid Filter Bag performance relative to the use of waste oil:

Within any fuels (waste derived or virgin) the main concerns for the filter plant focus around the Sulphur and Halide contents of the fuel.

On combustion and in the presence of water these two chemicals react to form acidic products.

A typical filter bag on an Asphalt Coating plant uses Aramid fiber. While aramid fiber has a particularly good temperature resistance it is susceptible to acid attack which degrades and embrittles the fiber.

In plants where the stone is alkali based (limestone) these acids are neutralized but where no free alkali exists then acid attack is possible when the filter is cooled through dew point conditions.

To guard against, these two facilities are available:

- Disciplined post operation shut down procedures, purging the moist acid gas from the filter bag at temperatures above dew point.
- Filtrex “UCF” treatment. This is a Fluorocarbon treatment applied to the filter bag which inhibits wetting out of the felt and thus chemical attack from acids.

Summary

Control and minimization of the Sulphur and Halide levels in any fuel (waste or virgin) will enhance filter bag life.

The presence of acid gas in the combustion process and resultant chemical attack on the filter media can be alleviated by plant operation disciplines and the addition of a fluorocarbon treatment to the filter bag.