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Tech Note
Technical Notes from the Technical Committee, NIBA – The Belting Association

#4 Dust Suppression Systems

The necessity to control dust in industry and mining has spawned a number of dust suppression systems. Many such systems exist today. It is likely that these systems will find ever wider acceptance in the marketplace.

The key to any such system is the application of some sort of mineral or food grade oil to the product being conveyed (grain, fertilizer, coal, etc.) in order to suppress the dust. **All of these oils will have an effect on the elastomer used in the manufacture of the specific conveyor and/or elevator belt construction being used**. Standard covers, such as you have used in the past, may very well not hold up to the attack which can be expected from these oils and solvents, if used.

It is very important when discussing belting for any of these applications that you know exactly what kind of oil is being used... what kind of vehicle, or solvent, it is being used with... and that further, you discuss the project with a knowledgeable belting supplier, or with the belt manufacturer.

Typically, vegetable and animal fats, such as those that would be used in this type of system, have a marked extractive effect on the plasticizers used in both PVC and rubber belting elastomers.

Animal fats, such as tallow, are a particularly bad actor. Some of them are solid at room temperature. Accordingly, they are dissolved in an appropriate solvent. Not only is the fat extractive, but the solvent can have a devastating effect on the belt elastomer.

Oils and fats of all types are used to control dust in coal. However, many power plants employ a fuel enrichment program, wherein they add fuel oil... not only to control dust, but to increase the BTU content of the coal being conveyed.

Make sure you know exactly what oil, fat, or solvent is being used, and in what concentration, as well as the method of application. **Do consult your belting manufacturer for further guidance**.