

Premature Blinding: A Look at Causes and Solutions

Pleated bag or cartridge blinding refers to the clogging of the filter fabric by dust particulates. When this occurs, the airflow in the collector decreases and the pressure drop increases, eventually rendering the system useless. There are many reasons that blinding can occur, but determining the root cause can usually be accomplished by use of a systematic approach including the following steps:

1. CHECK THE CLEANING SYSTEM FOR PROPER OPERATION

- *If the unit is a reverse jet dust collector, is the compressed air being supplied at an adequate pressure? Insufficient pressure will not adequately clean the filters.*
- *Are all components of the cleaning system functioning properly? (valves, tubing, PLC boards, etc.)*
- *Are the filters being over-pulsed? Over-pulsing can drive fine particles into and through the matrix of the media, leaving it blocked with impregnated particulate, which will not discharge effectively with normal cleaning cycles.*
- *Is the compressed air supply system dry and free from oil/moisture & emulsified contaminants?*

2. EXAMINE THE AIR STREAM DUST

- *Is there moisture or oil in the dust-laden air stream? Most fabric filters are relatively intolerant of excessively moist or oily dust. Regarding applications with these conditions, certain medias demonstrate better tolerance than others (for example, "DUCK'S BACK™" media offered by ECO Environmental Filtration). ECO can offer a full range of medias including spun bond polyester, polyester felt, polypropylene and Nomex. Post treatments include: anti-static, hydrophobic/oleophobic, FR and PTFE.*
- *Is the dust "caking over"? A media with a pre-coat or a PTFE membrane would be recommended for this type of application problem.*

3. ANALYZE THE SYSTEM

- *Is the dust load excessive? Medias are generally designed to handle dust loads of 20 grains/sq. ft. or less. Heavier dust loads can be addressed through redesign of the inlets or by adding dust dropout mechanisms.*
- *Is the air-to-cloth ratio, or filtration velocity too high? ECO can recommend an appropriate filtration velocity range or advise on media options to increase the airflow through the collector.*