

SUPPLIERS' TIPS

How can I select the right dust collection equipment and filter media for a moist, sticky dust?

It's difficult to answer this question without knowing specific details regarding the application or the dust being handled. However, the key factor for equipment and media selection is temperature. Clean, dry, compressed air is also important, as well as using a moisture-resistant media like spun-bonded polyester.

*Michael Gerardi, general manager,
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To get a proper answer to this question, provide your supplier with the following information: airstream characteristics, such as temperature and humidity; particulate characteristics, including the dust's chemical composition, moisture content, and particle size distribution; MSDS information, such as explosion potential; inlet dust loading, both typical and maximum, in grains per cubic foot of air; outlet dust loading desired or permitted; and site conditions, including utilities and space available and the dust collector's location (inside or outside). Armed with this information, your supplier can propose a proper system to collect the problem dust. (To qualify and rate a supplier's expertise and equipment, ask for references from similar applications, and ask about the replaceable media's expected lifespan, as well as service requirements.)

Typically, pleated-media collectors aren't suitable for moist, sticky dusts since these dusts tend to pack in the pleats and are difficult to remove. Open-media collector designs, typically used in baghouses, can be used if the proper bag material and coating are used, but it depends on the dust and airstream specifics. It's also pos-

sible to add additional dry, innocuous material into the airstream to dilute the problem dust, but this increases disposal costs.

Wet dust collectors can be the best solution for this problem because they aren't affected by moisture and essentially wash the dust so that stickiness isn't normally a problem. The disadvantage of wet scrubbers is that they can be more expensive to operate because they require more energy than media collectors do to achieve a desired efficiency on small particles. However, if the dust characteristics warrant it, it may be the best solution.

Electrostatic precipitators with wash-down capabilities are another possible solution to the moist, sticky dust collection problem. Energy use and efficiency on small particles aren't problems, but the initial capital costs are often much higher than either scrubbers or media collectors.

*Dan Josephs, product manager –
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Sticky (or hygroscopic) dusts can be tricky, so it's best to have a laboratory analyze a dust sample before you select dust collection equipment and media. This is the best way to avoid collector performance problems down the road. A series of bench tests will determine size, shape, and other dust particle characteristics, including the moisture content and moisture absorption rate. Using this information, you can work with your dust collection supplier to make informed decisions about equipment design and media selection. In special situations (such as if a dust has caused

a history of collector problems, or very stringent emissions requirements must be met), full-scale lab testing might be needed to test the dust under real-life conditions.

As a rule of thumb, tight-pleated cartridges aren't appropriate for sticky dust, as the filters tend to clog. Wide-pleated cartridges or bags are more suitable. Spun-bond pleated media that combine cellulose's high efficiency with polyfelt's versatility are often popular for use with hygroscopic dusts and may be used both in baghouse and cartridge-type collectors. But, again, dust testing will lead you scientifically to the best system design — including equipment type, media, optimum air-to-cloth ratio, inlet configuration, and other factors.

*Lee Morgan, general manager,
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Equipment suppliers can be a valuable source of information about equipment and processes. In light of this, we occasionally ask suppliers a question of concern for our readers. Answers reflect the suppliers' general expertise and don't promote the suppliers' equipment. If you have a question you'd like suppliers to answer, send it to Alicia Heaton, Assistant Editor, *Powder and Bulk Engineering*, 1155 Northland Drive, St. Paul, MN 55120; fax 651-287-5650, ah Eaton@cscpub.com.

What kind of support should I expect from my mechanical conveyor supplier after the conveyor is installed in my plant?

Your mechanical conveyor supplier should be capable of providing start-up and installation services, troubleshooting, and OEM parts with reasonable deliveries and prices. You should expect that if there are any operational problems, your supplier will step forward and support the machine. Field support should be present in the form of trained sales and service people, and follow-up calls should be made on a regular basis. Technical support should also be available for future changes, including machinery upgrades and material changes. By coordinating with the supplier once the machinery is in operation, parts and service requirements can be scheduled ahead of outages as opposed to a last-minute scramble. You and your-supplier should be partners in your ongoing operation.

*Bruce Robbins, proposal manager,
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To keep your mechanical conveyor running smoothly, technical service and support should be offered by your supplier via phone and the web at no additional charge. If your conveyor needs onsite service, you will typically be charged for your suppliers' time and expenses.

*Jay Sullivan, president,
Triple/S Dynamics,
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Mechanical conveyor support starts from your first inquiry. For the best service, suppliers and customers should build good relationships from day one. All suppliers have standard pieces of support documentation, but often your questions will lead to information not covered by the standard documentation. Additionally, in today's atmosphere of just-in-time inventory, on-the-shelf

spare parts for any wearing items are essential. It's important that suppliers have field technicians and adequate office-based expertise for support. Keep in mind that many aspects of service are related to changes in your product because of formula changes, humidity changes, or other nonmachine-related issues. Being able to solve those questions requires years of experience on the suppliers' part. In short, customers should expect total service, from inquiry to continuous operation, not just after the sale.

*Nick Hayes, vice president and
general manager,
Aerocon,
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When installing a new mechanical conveyor, the conveyor supplier should have a clear understanding of your installation. Your direct contact at the time of purchase may be with a manufacturer's representative or with a contractor. However, the supplier should be well informed of how the equipment is being used, where it will be installed, materials that will be handled, frequency of use, and so on. If you have questions or concerns about your equipment's operation, there's a very good chance that the supplier has fielded similar questions or has a simple solution. You should expect that if you call the supplier many years after the sale, there will be accurate records and knowledgeable staff available to review your job file and answer questions specific to your installation. Support should not end with the sale or expire at the end of the warranty period. Communication between the end user and the supplier will create a history for the installation, and support should continue indefinitely.

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