What major factors should I consider when selecting an automated batching system?

Some obvious factors to consider when selecting an automated batching system include batch time, accuracy, and size and cleaning time between batches or production runs. Less obvious, but equally important are the impact that upstream and downstream processes have on a batching system.

For example, the feedrate and accuracy of a weighbatching system's conveyor or feeder doesn't exclusively determine the system's overall capacity and accuracy. Other factors that may affect productivity and success include material delivery method, infeed rate, surge vessel capacity, weighing equipment location in relation to mixers, hopper and chute design based on the material's physical properties, and proper upstream and downstream equipment sequencing.

To effectively integrate an automated weighbatching system into your process and reap the benefits associated with such an investment, work with a company experienced not only in stand-alone weighbatching equipment, but also in engineering and automating plantwide bulk handling systems.

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F irst, determine what you're trying to accomplish with process automation. Today's automated batching systems help with many factors but one hot topic is their ability to provide full batch ingredient accountability for complete traceability.

When considering an automated batching system, also consider the labor and associated costs needed to create a batch and the advantages of increasing production efficiency with automation while reducing employee injury risks. Also consider your space: Using your facility space wisely allows for future growth, and automated batching systems can pack significant productivity into small spaces.

Other factors to consider include:

Ingredients: With an automated batching system, can the ingredients be delivered in a more cost-efficient way such as bulk bags, bulk trucks, or liquid totes to reduce ingredient and handling costs?

Engineering: Do you need an engineering company to design what you want, or are there equipment manufacturers that will design special equipment for your space and other needs? *Software:* How will the batching system's software interact with your current software? What reports do you need and how often and to whom and where do you want the reports created and delivered?

Setup and maintenance: Who will set up the equipment? What kind of space can be set aside for equipment, and can the equipment be broken down so it will fit into the building? Who will maintain the system, and how much will replacement parts cost?

Transition impact: Will a transition to automation shut down your process, and, if so, for how long? Can the automation be done in steps to make the transition easier for your employees and to spread the costs over a longer period of time? If it's done in steps, will there be an extra cost?

Choosing an automated batching system can help position your company for future growth opportunities. Do your homework and you'll enjoy all of the benefits.

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good batching system should be viewed as a partnership between both the mechanical and control components. If either isn't correctly designed, then the batching system may not function as required. The mechanical components should be designed to correctly store, transport, weigh, and blend the material. The control components are the intelligence that are needed to provide precise control of the mechanical components, a user interface, warnings of abnormal operation, and historical storage of the batching system data. Both the mechanical devices and the control system need to be adapted to your batching system. What might have worked for another company may not work for you. For your batching system to be successful, you should consider the following factors:

- 1. Material flow and handling characteristics — These will affect storage and transport design and your choice of batch control devices.
- 2. Performance criteria your desired system accuracy and throughput (operational sequence and timing).
- 3. Ingredient locations, the actual weighing and batching location, and downstream process location.
- 4. The type, location, and function of any operator interfaces located throughout the system.
- 5. The batching system components' layout and accessibility for calibration and maintenance.
- 6. What historical information needs to be recorded and in what storage database type.
- 7. Special factors, such as hazardous area classification and materials of construction (sanitary or corrosive installations).

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Equipment suppliers are a valuable source of information about equipment and processes. In light of this, each month we ask suppliers a question of concern to 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 Kayla Carrigan, Associate Editor, Powder and Bulk Engineering, 1155 Northland Drive, St. Paul, MN 55120 (kcarri gan@cscpub.com).