

Suppliers' Tips

What considerations are often forgotten when selecting the appropriate mechanical conveyor for a project?

In our company's experience, the following factors are often forgotten or overlooked by buyers when selecting a mechanical conveyor for a project.

- **Instantaneous-rate versus hourly-rate capacities.** Buyers should take care to distinguish between the amount of material that needs to be moved at a moment in time versus the amount that needs to be moved per unit of time. Using an instantaneous rate rather than a desired rate per unit of time to determine capacity can result in buying a wrongly sized conveyor.
- **Maximum infeed and discharge equipment capacities.** Knowing the rate at which upstream equipment introduces material into a conveyor is important for determining if accumulation or transport buffers that will be required and whether infeed controls will be needed.
- **How the conveyor will be fed.** This is important for determining how integration with upstream equipment will be carried out and whether infeed controls are required.
- **Confusing a conveyor with a feeder.** A conveyor moves material from point A to point B. Feeders and other metering devices introduce material into a process or other equipment at a controlled rate. A common mistake is to try and use a conveyor as a feeder.
- **Environmental conditions.** Environmental factors, such as dust, heat, cold, and moisture, may be detrimental to conveyor operation and performance. Identifying these factors can help you make a purchase decision that can save significant maintenance and service costs.
- **Cleaning considerations.** The frequency and ease of required cleaning help determine equipment availability and uptime. Equipment that's hard to clean will consume more time and resources.
- **Compatibility between conveyor components and materials or cleaning agents.** Certain materials and cleaning agents may attack and degrade conveyor components. Determining compatibility can reduce maintenance costs and part replacement.
- **Material testing.** Because materials vary widely in their raw and in-process properties and characteristics, there can often be uncertainty about how a material will behave when fed into, moved through, and discharged from a conveyor. Before purchasing a conveyor, it's often prudent to have the supplier conduct a test to determine how the conveyed material will behave and interact with the equipment. This will reduce the risk of having any problems with material handling and movement once the conveyor is installed in the field.
- **Replacement parts availability and service responsiveness.** Unplanned equipment downtime robs throughput and revenue. Carefully assess a vendor's capability for quickly supplying any needed service and replacement parts.

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When specifying the build details of your conveyor, remember to determine the equipment's materials of construction compatibility with auxiliary conveyor components and how the components will perform in your process with your process materials. Bearings, valves, seals, and internal seal components can be made from metals, plastics, and elastomers. Properly selecting the components should help extend their service life and give better conveyor performance.

Bearing materials vary greatly in their properties. Wood, plastic, ceramic, and rolling element bearings each have characteristics that have them performing best in a given process. Wood, for example, is a very shaft-friendly material especially in agricultural or abrasive processes. Keep in mind the abrasiveness, chemical properties and temperature of the process materials. Is the process food-grade? Will the conveyor process varied materials with different properties?

All of the chemical, abrasive, and temperature specifications also will affect seal performance and life. Also keep in mind your washdown procedures, cleaning frequency, and the chemicals used during cleaning. Would a stainless steel, aluminum, or nylon seal be most compatible with your washdown chemicals? These considerations also will affect the choice of other auxiliary components such as valves, gauges, regulators, and others.

Including the abrasiveness, chemical properties, flow characteristics, and temperature of your process and process materials when specifying all of your conveyor's components will help get you the conveyor that works best for your application.

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