

SUPPLIERS' TIPS

What safety features should I look for when selecting a new batch mixer?

Safety is an important issue that should be discussed at an early stage in any project and not be left as an afterthought subject to whatever money is left in the budget. Safety and risk assessment at the project's start helps dictate which batch-blending technology is best for your process. For example, if your safety concerns are centered on elevating your material or operator, consider adding a permanent mezzanine and feeding the material through the mezzanine floor. If that's not feasible, you could use a conveyor or an elevator to feed the material to an elevated position. Keep in mind that if you add any equipment to your process line, you'll have further complications to address, including contamination, additional time added to your process, safety, and dust problems.

During any safety review, you must consider the dust generated during your process. Even minor dust amounts can be a concern. You can use dust cowls to add a layer of protection or, in extreme circumstances, you may want to use an isolation booth to reduce or eliminate harmful omissions.

Another tactic is to use a bin blender rather than a horizontal blender, because bin blending completely eliminates dust emissions during material loading or unloading from the mixing vessel. However, bin blending often uses a large rotating bin that needs to be secured behind a safety fence or in its own room. For increased safety, make sure you have locks on any doors or gates to prevent access to the machine while it's rotating.

*Carl Andrews, general manager,
Matcon USA, 856-256-1330*

Generally speaking, look for warning labels on the mixer, an air lockout, an electrical lockout, proximity switches on all access doors to the mixing chamber, and guards on all moving parts except smooth rotating shafts. Guards can be removed either with or without tools, and those that can be removed without tools should also have a safety switch.

*Lyndon Flower, regional sales manager, A & J Mixing,
905-827-7288*

Safety begins with the blender's design. A batch blender should reduce pinch points between the cradle and the blender's outer frame. Also, blenders should be equipped with electronically sensed and manual emergency shut-off switches. Make sure the blender has warning lights to signal when it's about to be used. Pressure switches on the actuator clamps should automatically reclamp and repressurize in the event of pressure loss to ensure that the bin doesn't slip out of the cradle.

Your blender must have structural integrity and be properly installed prior to operating. For increased safety you'll also want to place gating around the blender that must be closed for the blender to operate.

*Doug Silverman, general manager
– dry products division,
Hoover Materials Handling,
678-228-3108*

Make sure all exposed dynamic mechanical areas are safety-guarded so that there are no pinch points or areas that can cause injury. Set up your equipment so that during a power loss you can start the blender under a full load, eliminating the need to access the machine and manually unload the batch. For safe and easy access, mount all attachments externally, including samplers, liquid spray lances, and zirk fittings for bearings, to a stationary part of the blender. Consider using automatic oilers and greasers so that you don't have to remove safety guards for routine maintenance.

Every blender should be accompanied with safety and operation manuals that illustrate safety stickers and their location on the blender. Manuals should clearly show all access openings and mark them with a lockout-tagout designation. Manuals should also include maintenance procedures with illustrations where applicable. Keep in mind that a faulty safety sticker, according to some legal interpretation, denotes a faulty piece of equipment.

*D. Coyne Callaghan Jr., director of sales, Continental Products,
414-964-0640*

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