

Practical insights from the leaders in bakery design and construction

Bakery Plant Design for Employee Safety

From the parking lot to the shipping dock, there are many opportunities to implement employee safety features into the design and construction of a bakery production facility. In this issue of Bakery Insights, we discuss some key areas for consideration.

1. Parking – Separate truck traffic from employee parking areas.
2. If tanker inspection is required, provide proper access to tops of cars and use stairs instead of ladders.
3. Ingredients receiving and handling – Wherever possible, utilize silos or super-sacks instead of 50-lb. bags. Lifting and breaking bags are prime sources of back injuries.
4. Facility design should incorporate as much of the storage system inside as possible, to eliminate the hazards associated with working in hot, wet or icy conditions, all of which can lead to injuries. This includes oil, sugar and yeast tanks.
5. Dust is a hazard to the pulmonary system. Some people are more susceptible to irritation than others and some locations within the bakery are likely to have higher concentrations than surrounding areas – for example, bag dumps and dusting locations. Eliminate hand-adds to mixers, install bag dumps with well-designed dust collection, and reduce or eliminate dusting



flour. Use of dusting flours is often a traditional approach, rather than a necessity.

6. Ideal design includes a single staircase to access ingredient tank tops and the building roof. Eliminate ladders as much as possible. Stairs not only reduce risk of injury, they significantly improve maintenance due to ease of access.
7. Understandably, slippery floors are a common cause of accidents. Don't forget dry floors can also be slippery due to flour dust, bread crumbs or corn meal. Diamond polishing concrete floors improves their appearance and makes them less slippery. In areas that water and oil may increase slipperiness, eliminate or reduce the sources. Design wash troughs and faucets to minimize splashing, add floor drains, and gently pitch floors to drains.
8. Pinch points and head knockers must be eliminated in the early stages of facility design. This requires close coordination between equipment and building layout.
9. Pan handling – Manual handling of pans is hard, physical labor, in addition to exposing workers to high temperatures of pans and in the work area. Automating all aspects of pan handling will significantly reduce labor costs and, more importantly, eliminate the accidents and injuries associated with this operation.



10. Basket stacking – Manual basket stacking is also challenging labor that results in many back injuries. Automated basket stacking and unstacking eliminates this issue. Automation here may be a large investment up-front, but systems are reliable and pay for themselves through labor savings and injury reduction.

11. Heat and baking go together. For employees it can be uncomfortable and reduce their efficiency. While air conditioning for People Comfort is typically cost-prohibitive, the answer lies in changing the air inside the bakery and providing air movement at the level of employees. Air movement helps employees feel more comfortable and by providing a cooling effect on the skin. Typically, designing to change the air from the floor to ten feet above the floor, six to ten times an hour in the summer, and four to six times an hour in the winter, is adequate. For workers who stay in a warm area constantly, such as slicing and packaging, spot cooling is a good way to provide economical comfort.



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12. Health and Wellbeing Space – Consider dedicating a room for exercise and wellbeing classes. Local gyms and hospitals are happy to demonstrate fitness techniques and talk about wellness, as a way to advertise their services. Fit and healthy employees are much less likely to injure themselves with strains and accidents. In addition to being a great employee benefit, fit and healthy workers perform better and are less susceptible to injury.

13. Several hazards exist in the shipping area. Safety considerations include:

- Establish a well-organized system to pick product and stage loads.
- If hand picking is done, keep working level close to waist height.
- Using dollies slightly larger than the baskets can eliminate finger pinch points.
- Vertical-storing dock levelers interconnected with the dock door, dock lock and lights, virtually eliminates the risk of dock accidents.

