



## Current Good Manufacturing Practices—Plant and Grounds

The Food Safety Modernization Act (FSMA) requires that all food facilities, including beer manufacturing, comply with current Good Manufacturing Practices (cGMP). As part of the Food Safety Bite published in March, personnel and best practices were covered. Continuing with cGMP, the July Food Safety Bite on Plant and Grounds covers all topics regarding facility design and the grounds around a food manufacturing site. It is important to note that all practices associated with plant and grounds are related to preventing contamination from the building or with lack of accessibility to get to items in your facility that may need to be addressed to prevent contamination. The brewery you work in should be clean, accessible from a cleaning standpoint, and secure to prevent unwanted entry from pests and personnel.

### What You Need To Do

#### **Grounds**

The grounds around a manufacturing facility must be maintained. For example, vegetation must be trimmed and away from the building; water must drain properly; outside storage areas must be kept tidy; and loose grains around silos must be swept up. All these areas are potential pest-control harborage points that could lead to infestation and food safety risks inside a food manufacturing facility.

Waste, trash, liquid by-product/spent grain, and all other areas outside of the manufacturing facility must be covered, cleaned, and maintained to reduce the risk of attracting pests. Pooling or stagnant water in areas close to the brewery or in areas where it could be tracked into the brewery by employees poses a contamination risk to your brewery. All drainage should flow away from production buildings.

#### **Plant Design**

**Equipment and storage:** The plant should have adequate spacing for all equipment and storage. Maintain a perimeter around equipment and materials to assure pest control personnel can move around the equipment and employees can clean.

**Allergens:** Allergen control must be considered, and the following questions should be considered in plant design:

1. Is a separate allergen packaging line required? (Not always realistic)
2. Is the area cleanable to prevent allergen cross-contact?
3. Should dedicated hoses, gas lines, and tanks, be used?
4. Is there a way to verify the existence of an allergen (test kits)?
5. How can allergenic products and ingredients be stored separately?
6. Does the production schedule align with cross-contamination prevention?

**Ingredient and food storage:** Outdoor storage of ingredients and food must be food safe:

1. Covered if applicable.
2. Vessels locked and sealed.
3. Inspections conducted routinely for pest infestations, damage, and tampering.

**Sanitation:** The plant should be built so that overheads, piping, and all floors and walls can be cleaned. Building materials need to be cleanable (no exposed dry wall or pipe insulation). Any wet or dirty/dusty areas should be cleaned at a frequency that prevents contamination (biological, physical, chemical). This can be achieved by adding cleaning cycles to the plant's master sanitation schedule.

**Lighting:** Hand wash areas, locker rooms, and toilet facilities must have adequate lighting to assure employees can wash their hands properly. Any areas where food, yeast, and beer are examined must have proper lighting to assure proper cleaning and handling occurs. All lighting in a manufacturing facility must have shatterproof bulbs or protective coverings to prevent glass contamination anywhere food handling may occur.

**Ventilation or control equipment:** Dust, odors, and vapors must be removed in areas where allergens may cause cross-contact. Proper ventilation is important to ensure air quality and that the production environment does not contaminate the product (humidity, chemical mists, mold, particle transfer/allergen, or physical).

**Doors and windows:** When doors and windows are left open screening must be in place and inspected regularly to assure no pests make their way into the facility:

1. Doors should be closed, properly, when not in immediate use. This includes overhead doors that are receiving materials or are open for fresh air and that have no screen.
2. All doors, windows, and overheads must be properly sealed (no daylight or gaps visible).
3. All doors and windows should be secure (screen doors should be lockable, etc.).

**Product flow and segregation:** Plant flow may be a food safety risk. It is important to look at cross points in traffic flow among people, maintenance personnel, and their tools and where and how items are stored to assess whether there is a risk to the product:

1. Use designated tools for higher risk equipment (like packaging lines).
2. Does the brewer have to walk through packaging to get to the grain silo or carry malt to the brewhouse?
3. Does the trash bin have to be wheeled through an open product area to be taken out?
4. Are there sufficient storage and workspaces?
5. Ensure that chemicals, raw materials, packaging, and finished goods are segregated; that food is always stored above nonfood products; and that the route to get materials to production locations does not potentially compromise food safety.
6. Ensure that elevated walkways that are perforated do not pose a hazard to materials or products stored below.

**Utilities:** Ensure there is sufficient and potable water at point of use (e.g., stored water is tested for microorganisms, water tanks are cleaned regularly, and tanks are checked for chemical residue). Water line dead ends should be removed to prevent biological buildup/growth.

Ensure gases do not pose a contamination risk to products (e.g., backflow/dirty gas hoses, allergen risk if dedicated lines are not used, hose pieces in product due to line wear).