



Move over appliances

Why stainless steel drainage is critical to your kitchen operation

By Michael O'Brien

Oh the unappreciated commercial kitchen drain. It so often neglected. Kitchen designers, facility managers, chefs and other personnel tend to focus on a commercial kitchen's many stainless steel appliances—whose brand names, equipment size and layout—when considering a kitchen's capabilities.

Granted, cooking is important in a large kitchen. But what about the most often overlooked facets of keeping a busy kitchen operational and clean, and yet another use for stainless steel: floor drains.

Consider the need for kitchen sanitation. Many food morsels or ingredients, and most every drop of sauce, soup or stew that does not leave a kitchen on a plate or in a bowl, ends up on the floor. That is why many kitchens are cleaned between meals or, for food and beverage processing, as routinely as the need requires.

Making sure that floor surfaces are squeaky clean and free of bacteria and debris places great expectations on a kitchen's





drainage—to say nothing of the volume of water required to wash the floor and flush the drains.

As the saying goes, time is money, right?

Here are a few important facets to consider when considering drainage for commercial kitchens of food/beverage processing facilities.

Sizing drain channels is a facet of the design tied directly to the volume of drainage required. One of the most important functions of a drain is to get waste material and water off the floor—quickly. Drainage should never be a bottleneck. The sooner the floor is cleaned, and dry, the sooner it is safe to work on again.

Typically, there is a 4-inch drain and a P-trap. This meets the majority of flow capacity needs. While, in some cases, a larger drain surface and channels are needed. At larger facilities, the drains may be several square feet in size (we prefer sturdy, stainless steel grates), with water and waste material flowing into a broader and deeper channel for faster disposal.

Keeping the floor dry is not just a safety issue. Sanitation is very important, especially when considering the possible presence of toxic contaminants such as listeria, salmonella and e-coli—what is occasionally referred to as the “Big 3.”

Material considerations

For kitchens drain systems, there is no doubt that stainless steel is the best material. It is best for plenty of reasons. It is extremely durable and easy to clean and sanitize.

Another important consideration is the manufactured channel grade. All drains are not created equal. Be sure to compare the effectiveness of a drain’s ability to carry away wastes and flush water.

The best vendors use only stainless steel for the drains, grates, the drain channel and even the P-trap.

Drains, especially those for larger kitchen, brewing and food processing operations, may be 16 inches x 16 inches in size, or 20 x 40 inches, or larger. They should be chosen for their strength (sufficient to tolerate the weight of a fully-loaded fork lift) and durability. They should also be easy to clean, assuring that solids do not get hung up in them; avoid drains with square corners.

Stainless P-traps have a distinct advantage in their ability to withstand the very temperatures of water that is either dumped into them from large kettles, or used to flush the drain channels, and surfactants (cleaning chemicals) that may also be used. There may also be organic materials and proteins going down the drain and into the P-trap; all of these can cause serious problems with PVC P-traps, over time.

When very hot water is used to flush drains, PVC P-traps—especially when they are snaked during troublesome cleaning operations—are prone to deterioration, cracking and breakage.

Location, steel, cleaning

Because the main purpose of drainage is to eliminate waste and flush water with a facility, it stands to reason that the best place for the location of drains is where the most water is. Not only water dumped from kettles, but also water used to clean floors and flush the drains.

Many cleaning procedures involve the drainage of highly acidic materials. This consideration alone has led to an industry debate comparing the effectiveness and durability of 316 and 304 stainless steel



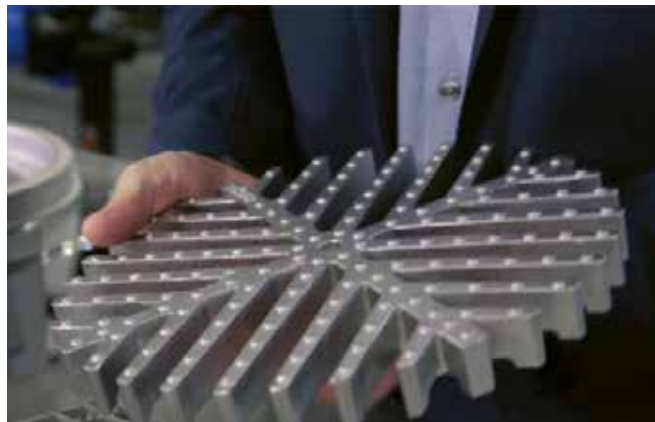
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formulations. The superior steel for most drainage is 316; it contains 16% chromium, 10% nickel and 2% molybdenum. The molybdenum is added to help resist corrosion to chlorides and acidic compounds.

When cleaning, it is best to avoid strong chlorine solutions—such as industrial bleach or sodium hypochlorite. Even stainless steel can oxidize, often looking like white blemishes. This will eventually weaken the material.

Installation

Typically, drainage is sloped to 1% from the drain and is anchored in place to become



a part of the floor. It is important to protect it during the concrete pour with a durable channel cover that is in place during all floor work.

Application notes

Some drains are designed specifically for use in the food and beverage industry, where maintaining hygiene is critical.

Lacking corners or inside cavities to harbor bacterial growth and with resistance to a wide range of cleaning chemicals, these drain systems are unaffected by high-temperature cleaning, caustic cleaners and effluent, or steam disinfection.

In Cincinnati, MadTree Brewery chose to install BLÜCHER HygienicPro® trench drains in its new 50,000-square-foot brewhouse. In its old facility, employees would spend 10 minutes to 15 minutes hosing down the floor after a tank cleaning to get all solids down the drain. With these drains in its new facility, most of the solids would make their way down the drain with little effort; an employee would only need to spend a minute or so cleaning up any loose ends.

Floor/drain washing is required twice a day at MadTree's brewing facility, so the new drains free-up half an hour of labor and save hundreds of gallons of water each day. Over a year's time, the savings is significant and greatly impacts their ROI, simply by selecting the right drainage product.

"The design and engineering of the drains made them stand out," says Mike Stuart, MadTree director of people and social strategies.

Clearly, use, function and drain design should be among the first considerations when selecting a commercial kitchen drain. **CK**