

Which Fixtures Should Be Connected to a Grease Interceptor?

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Model plumbing codes such as the Uniform Plumbing Code, International Plumbing Code, National Standard Plumbing Code and the National Plumbing Code of Canada tend to use vague language regarding which fixtures to route to a grease interceptor. This inevitably leaves the decision up to specifiers, contractors or even the restaurants themselves to distinguish which fixtures that they believe will definitely discharge grease from those they believe will not. Compounding the problem is that the cost of construction increases with each additional fixture that is routed to the grease interceptor, which creates a direct and negative consequence that effected parties naturally want to minimize.

Restaurants are responsible for 100 percent of their wastewater discharges. Fats, oils and grease (FOG) finds its way into the sanitary sewer system through virtually every fixture in the kitchen at one time or another. The Interceptor Whisperer recommends all fixtures in a commercial kitchen be connected to a grease interceptor to minimize the potential discharge of FOG and to maximize the effort to collect the FOG at the source.

Let's consider some fixtures that either get over-looked or their impact may not be well understood:



Floor drains, floor sinks, and mop sinks are often ignored as FOG discharging fixtures, but spills like the one shown here are common in a busy commercial kitchen. Meal turn-around time is a critical element in kitchen operational decisions and a mess like this will have staff dumping hot water over the area to squeegee the spilled grease over to the nearest floor drain or floor sink as quickly as possible. Residual grease will be mopped up and dumped into the mop sink as time permits.

There is some debate as to whether bar sinks are potential FOG discharging fixtures, but common sources of FOG are cappuccinos, cafe' brevas, cafe' macchiatos, cafe' lattes, cafe' mochas, frappuccinos, hot chocolate, iced cafes with milk or cream, milk shakes, and mixed alcoholic beverages with milk or cream such as white russians, irish coffees, kahlua with cream and so on.



Food waste disposal units are another prime discharger of FOG. These devices are very efficient at grinding up food waste, which encourages restaurants to use them for all types of food scraps. In 2008 the New York Department of Environmental Protection conducted an investigation and published a report titled, Commercial Food Waste Disposal Study. The study investigated the impacts of approving the installation of commercial food waste disposers at food service establishments. The study concluded that the costs and risks associated with allowing the use of commercial FWDs in New York was not sustainable stating, “Due to the high fat content of food waste, use of FWDs would discharge substantial amounts of FOG to the sewer system, which could lead to more sewer backups and maintenance

needs.”

The fat content of the food was assessed from 172 samples taken from colleges and universities, medical facilities, retail food establishments (supermarkets), restaurants and hotels, as well as other FSEs such as caterers, shelters, non-public schools and senior centers. The samples were sent to City College of New York where they were subjected to FWD grinding and then analyzed for chemical composition. 29 samples from retail food establishments had an average effluent concentration of 6,160 mg/L, while 61 samples from area restaurants and hotels averaged 18,590 mg/L. Colleges and universities (15) averaged 14,830 mg/L, medical facilities (32) averaged 16,030 mg/L and other FSE's (35) averaged 18,210 mg/L. These reported concentrations are too high to ignore, justifying a jurisdiction either disallowing the installation of food waste disposers or requiring them to be routed to a grease interceptor and not directly to the sanitary sewer system. Of course, the volume of anticipated food waste would rapidly fill up any grease interceptor reducing its effectiveness at FOG removal.

The last fixture that should be carefully considered is the dishwasher. Dishwasher discharge is a high-temperature mixture of FOG, solids, water and surfactants from excess detergent. Testing has shown that higher temperatures actually assist in separation performance in hydromechanical grease interceptors. However, interceptors are designed to separate free floating FOG not FOG that has been emulsified by surfactants. Some jurisdictions believe that it is better to route the dishwasher through the grease interceptor and hope that excess surfactants do not emulsify previously captured FOG. This is a reasonable strategy because, the potential to strip a full grease interceptor of some existing grease is better than sending all of a dishwashers' effluent directly to the collection system.