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ROOFTOP GREASE *Contamination Regulations*

What The Roofing Industry Needs To Know To Help Control The Problem

By Joseph Baribeau

If you are in the roofing business and have not heard the terms Best Management Practices (BMPs), Fats, Oil, and Grease (FOG), Stormwater Pollution Prevention Plans (SWPPP), and Rooftop Grease Contamination (RGC), it's about time you did. The lexicon of grease management is spilling quickly from the world of food service into the roofing industry, as regulatory agencies increasingly hold restaurants and the food service industry accountable for grease-blocked sewer spills.

For a recent case history, look no further than Los Angeles, California. This past summer, restaurants in the City of Los Angeles were spared the requirement of installing costly underground interceptors for the disposal of fats, oil, and grease. Thanks to efforts by California Restaurant Association Government Affairs' staff, the City changed its proposal to require that all restaurants follow Best Management Practices in the disposal of fats, oil, and grease (FOG). Nationwide, the food service industry has the same problem of rooftop grease disposal. All industries that generate and discharge FOG and other potential pollutant sources are faced with the Environmental Protection Agency's (EPA's) Stormwater Pollution Prevention Plans and Best Management Practices.



Photo 1: Grease spilling from a typical rooftop exhaust fan that does not have proper grease containment product in place

Stormwater General Information

The National Urban Runoff Program (NURP) and Clean Water Act (CWA) 305(b) report submitted to Congress in the 1980s identified contaminated stormwater as one of the causes adversely affecting water quality. Congress amended the CWA in 1987 to require the EPA to address stormwater runoff [CWA 402(p)]. Federal regulations were promulgated in 1990 as 40 CFR 122.26 with the first general permits issued in 1992.

Two types of stormwater general permits were issued beginning on September 9, 1992. The first was for discharges associated with industrial activities, commonly referred to as the Baseline Industrial General Permit (BIGP). The second permit was for discharges associated with construction activities. The BIGP covered all facilities except those covered under construction permit. The BIGP permit language can be found in the Federal Register, Vol. 57, No. 175, September 9, 1992, pages 41297 through 41342. The Construction Permit can be found in the

Federal Register, Vol.57, No.175, September 9, 1992.

On the industry side of stormwater permits, approximately 1,400 groups applied for permits, which made it difficult for the EPA to produce group permits. To resolve the problem, the EPA issued the Multi-Sector Stormwater General Permit (MSGP). The MSGPs established 29 different industry sectors. The EPA further subdivided many of these sectors into 70 sub-sectors. The MSGPs became effective on September 29, 1995. The original industry groups with coverage under a BIGP were given until March 29, 1996, to apply for a MSGP. However, a MSGP does not cover all industry sectors and the EPA is currently evaluating the industry sectors for the MSGP program. The proposal is published in the *Federal Register*, Vol. 62, No. 133, July 11, 1997. More information regarding each industry sector and requirements for compliance can be found at *Federal Register*, Vol.60, No. 189, September 29, 1995.



Photo 2: Rooftop grease spilling into a roof drain is stormwater pollution.

All stormwater general permits require the permittee to complete, implement, and maintain a stormwater Pollution Prevention Plan (SWPPP). The SWPPP must meet the requirements set forth in the general permit and must be tailored to meet the specific site's specifications and requirements. A SWPPP guideline is available at the Department of Environmental Quality (DEQ) and can be furnished upon request. The

SWPPP requirements are designed so that small businesses may develop and implement a pollution prevention plan. However, obtaining services from a qualified consultant is another alternative in preparing a SWPPP. For more information regarding the stormwater program, call the EPA or Department of Environmental Quality.



Photo 3: Roof damage caused by installing the improper grease containment product.

To make it simple, Stormwater Pollution Prevention Plans (SWPPP) are required by a state general permit. They identify potential pollutant sources and describe the design, placement, and implementation of Best Management Practices (BMPs) to effectively prevent non-stormwater discharges and reduce pollutants in stormwater discharges during activities covered by the general permit. Stormwater permits require that all potential sources for stormwater pollution (such as rooftops) must be identified in a SWPPP and that BMPs must be used to control the pollution that results from this runoff. BMPs should include source reduction efforts and good housekeeping practices that reduce water pollution sources. Regarding roofs, this means businesses are responsible for controlling the runoff of fats, oil, and grease that spill onto roofs and into stormwater drain systems. Best Management Practices include relatively simple tasks, such as identifying, collecting, trapping, and properly disposing of all FOG generated in a restaurant.

One of the most overlooked areas of such a plan is grease that spills from rooftop exhaust equipment. "This is one problem

that the restaurant and food service industry needs to look at very closely,” notes David R. Hawn, RRC, President of Dedicated Roof and Hydro-Solutions and a registered roof consultant. He says, “Rooftop spills and grease contamination generated from exhaust ducts and ventilators continue to cost food service operators thousands of dollars each year. When grease comes in contact with a roofing system, it causes most roofs to soften, delaminate, blister, or crack, depending upon the specific material.” This, he says, “can lead to leaks, premature failure, and environmental hazards.”

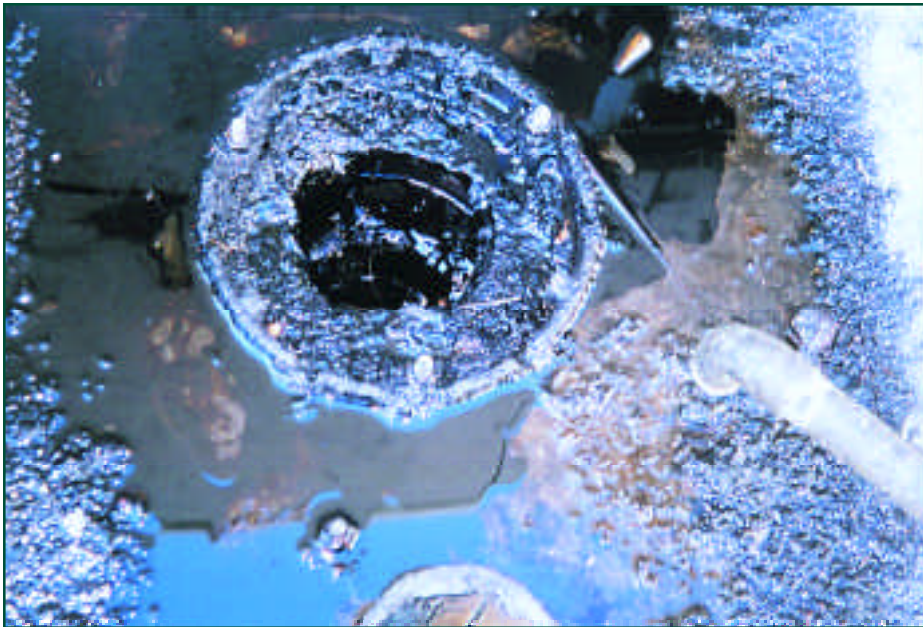


Photo 4: A roof drain that is contaminated with grease

The leading cause of rooftop grease contamination is a poorly designed collection device. Many fans and ventilators have some type of device typically found under the drain spout or around the lower base section of an exhaust duct. These are supposedly designed to catch grease spills. Unfortunately, many of these contraptions are not designed to collect and trap the volume of liquid grease that most commercial kitchens generate. They are also difficult to clean and maintain. When they fill with grease and rainwater, they overflow onto roofs and into storm drains, causing roof damage and stormwater pollution.

The EPA enforces plans such as SWPPPs. The EPA requires businesses that are discharging pollutants into stormwater drains to develop SWPPPs. These plans fall under EPA's National Pollutant Discharge Elimination System (NPDES). This is the national program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pre-

treatment requirements. The plans generally should contain descriptions of BMPs. In addition to the EPA's SWPPP and BMPs, the food service industry is also faced with the National Fire Protection Association's (NFPA) Code 96 section 7.8.2.1 found in the 2001 edition.

The section, called “Ventilation Control and Fire Protection of Commercial Cooking Operations,” says, “Section 7-8.2.1. Rooftop termination shall be arranged with or provided with the following:

The ability to drain grease out of any traps or low points formed in the fan or duct near the termination of the system into a collection container that is noncombustible, closed, rain-proof, structurally sound for the service to which it is applied, and will not sustain combustion. A grease collection device that is applied to exhaust systems shall not inhibit the performance of any fan.”

Rooftop grease spills are a major health and safety hazard. Rooftop grease attracts all types of pests and rodents. Rooftop grease spills also pose a safety hazard. Every time a contractor or employee is on a greasy roof, he or she runs the risk of coming in contact with grease. We all know what can happen when someone gets grease on the bottom of his or her shoes! This often results in slip and fall accidents that, in turn, cost thousands of dollars in workers' compensa-

tion claims and personal injury claims each year.

As the roofing industry knows, restaurants and food service establishments have special roofing needs. A roof can not be



Photo 5: A collection box full of grease that is about to overflow.

designed to be immune to the effects of FOG, but a designer can control how to collect and trap FOG better. The industry needs to start using the proper grease containment products. Property owners and managers need to be more vigilant when it comes to enforcing and maintaining these systems. When inspecting a roof, always make sure there is proper grease containment protection in place.



Photo 6: This GAP-1398 Side Mounted Drip Pan is equipped with a disposable Grease Diaper. The equipment has a water drainage system that allows rainwater to flow without spilling grease onto a roof. (Lids are optional.)

It is important to suggest removing any traditional devices such as sheet metal collection boxes, plastic buckets, sandboxes, and any other types of devices that do not have a replacement grease diaphragm or disposable filter in place.

A properly designed grease containment system will allow rainwater to drain out of the system without spilling the grease onto a clean roof. Replacement grease diaphragms or filters should be hydrophobic. Rainwater or FOG should not be able to pass through the collection material. If water passes through, the purpose of having a grease collection or containment system in place would be defeated. Any containment product that is found sitting directly on the roof around the base or duct curbing of an exhaust fan should be seriously reconsidered. These devices could trap the FOG between the system and the roof's surface, causing roof damage. If any of these devices is found, it should immediately be replaced with the proper type of grease containment system.

Another thing to remember when considering the purchase of grease containment products is to make sure the system chosen or recommended to an individual that is having a rooftop grease problem provides a disposable grease diaphragm or filter that can easily be replaced as needed. Most grease containment products are very expensive to install. Replacement filters are very costly to replace and maintain as well. A good rooftop grease containment system doesn't necessarily need to be an expensive piece of equipment to work properly. It is more important to

have a clear understanding what type of product is needed. Some grease containment manufacturers and distributors throughout the country provide free consultation. A consultant can even send a close-up photo of a rooftop grease ventilator/exhaust fan showing the grease spill area, and the company will provide a solution as to which type of containment product is needed. This will save time and prevent choosing the wrong product.

When choosing a grease containment product, it is important that the equipment/drip pan that holds the grease diaphragm or filter in place can easily be attached to any exhaust fan directly under the grease exhaust fan's drain spout. If grease is leaking from other areas of an exhaust ventilator/fan, there are great products on the market that can be installed for maximum protection. Be careful, as most four-sided grease containment systems are very effective and most are also an overkill to the problem. ■

Summary

The grease containment product chosen should always meet the requirements of local, state, and federal agencies. NFPA code 96 section 7.8.2.1 could be used as a guideline. Using the correct rooftop grease containment product is critical. When considering a grease containment product, make sure it works and is simple to install and maintain. As you can see, there is much to know about choosing the

proper rooftop grease containment product. Remember that the cost of corrective action is minimal compared to the cost of ignoring the problem.

ABOUT THE AUTHOR

Joseph Baribeau is president and founder of Coastal Environmental Solutions Inc., a Connecticut-based company with offices in California. Baribeau has been working in the environmental industry and providing solutions to rooftop grease and other environmental hazards successfully for 25 years. To learn more about cost-effective and approved grease containment products and how to purchase them, visit



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www.greasecontrol.com. For a copy of industry standards pertaining to rooftop terminations and information regarding rooftop grease-containment products and services, call Baribeau at 1-800-300-6661. Joseph may also be reached via e-mail at cesi@netwiz.net.