Planning Is Important When Selecting Restaurant Fire Suppression Systems

Kitchen hoods often are thought of at the end of the restaurant planning process. Typically, hoods are nothing other than small outlines on plans, and in some cases it could be debated, they are afterthoughts. Naturally then, restaurant fire suppression systems are also late to the table. Any kitchen hood that is servicing grease-producing equipment is required to have a restaurant fire suppression system installed.

Heat, flame, grease and oils are recipes for fire inside a building, and in a restaurant those combinations are part of the cooking operation. With the risk of fire, a great deal of concern and planning should be put into ensuring that proper fire protection is implemented to protect the investment, not only in terms of material property but the human life within.

Understanding the appliances that will be required for a cooking operation is important in selecting the proper fire system. Thinking ahead of time also mitigates the risk of back charges.

When working with a manufacturer or representative to get a fire system design, it is important that you give them the size of the hazard area on the appliance versus only the appliance dimension. The hazard area is typically the part of the appliance that actually produces heat such as the burners, the griddle top, the fry oil vat, etc. This will allow for the most efficient and cost effective design.

Beware of local codes. Some jurisdictions require full dump tests to ensure proper system operation, which come at an additional expense. Some only require puff tests where air is pushed through the system. In addition, you may find local codes limit the distance from the hood or define the location for a remote pull station. Knowing about these regulations in advance will help you better allocate financial resources and time management on the project.

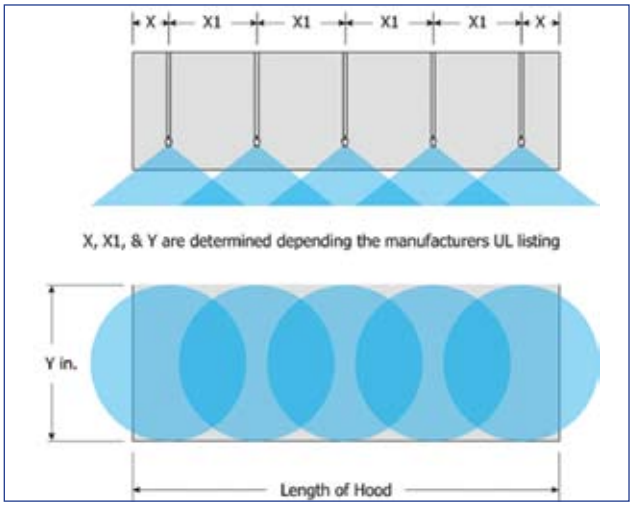

Figure 1. Pictured here is overlapping of full-flood protection. Overlapping protection provides protection across the entire length of the hood, regardless of equipment type with a few exceptions.

Know your fire suppression systems

Restaurant fire suppression systems use a wet chemical for suppressing fires. These chemicals vary by manufacturer but are typically a potassium-based chemical that essentially forms a foam blanket over the appliances. This blanket traps flammable vapors and prevents oxygen from fueling the fire. Another system on the market uses a wet chemical and then dispenses water which keeps rebuilding the foam blanket and cools the appliances faster mitigating the risk of re-flash. Regardless, all approved restaurant fire suppression systems are tested and Listed to UL 300 to ensure that they are an efficient means of suppressing a fire.

The most common fire suppression system is the appliance-specific system. This system features a specific type of nozzle positioned in a certain location for a particular type of appliance. For example, a fryer and a griddle each have a unique protection solution with a specific nozzle properly located to protect each of those appliances. If those two appliances are rearranged or the type of appliance is changed, that protection is no longer valid. Understanding this is critical, as this requires a certified installer to come to the facility and modify the system which may cost anywhere from a few hundred dollars to thousands depending on the change. This is a very common cause of unwanted change orders in the field.

If you anticipate line-up changes or have a line-up that puts different appliances in place for different occasions, more flexible systems are available. Some common changes that cause the line-up to be adjusted include:

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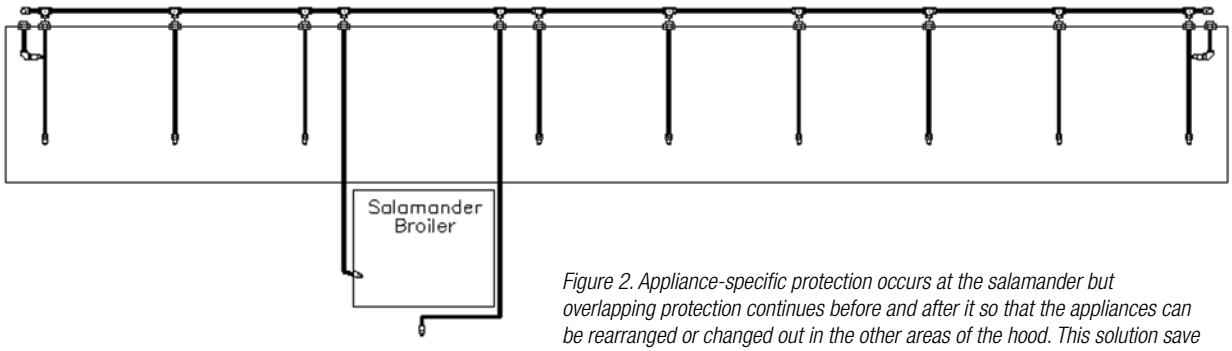

Figure 2. Appliance-specific protection occurs at the salamander but overlapping protection continues before and after it so that the appliances can be rearranged or changed out in the other areas of the hood. This solution save the time and expense of coordinating changes and modifying the system.

- Changes in appliance type before any ventilation equipment is installed but after it has been ordered.
- The hiring of a new chef demands that the cooking appliance order be changed.
- A menu change requires a different equipment line-up than previously installed.
- Likewise the clientele consumes more of a certain product, and to maintain service, one piece of equipment is changed out with a duplicate of another.

The alternative is to use what is commonly referred to as overlapping or full-flood protection. Overlapping protection provides protection across the entire length of the hood regardless of equipment type (Figure 1) with a few exceptions identified below. Two very reliable manufacturers of these systems are Amerex and Ansul.

Exceptions to this protection are upright broilers/ salamanders, cheese melters, and wide shelves*. However, that doesn't mean you can't utilize this protection. (Figure 2) Appliance-specific protection occurs at the salamander but overlapping protection continues before and after it so that the appliances can be rearranged or changed out in the other areas of the hood. This solution saves the time and expense of coordinating changes and modifying the system.

When your next project comes along, think about how to get ahead of the game both in terms of the appliance lineup and understanding the regulations in your area. Also, recognize that you have choices in manufacturers and systems to find a system that best meets your needs. Getting caught with insufficient protection or planning for testing can be a costly endeavor, especially if it delays the opening of a facility, when it can be prevented with a little forethought.

*The maximum shelf width is determined per the manufacturers UL listing.

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