

This is a basic guide consisting of steps, precautions, and measures that one should take, to safeguard himself/herself from kitchen fires. A bit of caution can certainly save many lives and safeguard from accidents.

Overview

Commercial cooking or Kitchens found in restaurants, hotels, hospitals, nursing homes, office cafeterias, etc. pose definite fire hazards due to the prevalence of oil and fire in almost all type of occupancies. Oil and fire make a deadly combination along with air, creating a high hazard fire triangle.

Causes of kitchen fires:

- Cooking with deep fat or vegetable oils produces grease-laden vapors that can be ignited.
- Full grease traps –These may have food pieces & inflammable stray paper products.
- Poor housekeeping - Fire can spread in dirty, cluttered walkways and storage areas.
- Faulty or frayed electrical cords - These are likely to cause an electrical fire.
- Improper storage of flammable materials - Flammable materials must be stored away from open flames or heat sources.



Case Studies

A fire started in fryers under a low profile hood. The fire suppression system did not activate automatically, likely because fusible links were coated with hardened, decomposed grease, nor was the system manually activated by workers. Fire escaped the hood through a rectangular hole for passage of electric conduits for fryer cooking timers.

It spread to the void space between the duct and surrounding fascia metal, and because of inappropriate sealing of the duct at the ceiling, fire spread to the attic and roof, where wood construction burned. Two-thirds of the building collapsed.



Safety Tips



Hoods:

Restaurant exhaust hoods are designed to eliminate excess grease, gases, smoke, and odors from the kitchen. When grease accumulates on hood filters, it creates a new fire. These systems should be cleaned and maintained regularly.



Fryers:

Deep fryers can quickly become a vat of fire fuel if proper precautions are not taken and should be placed at least 16 inches from open flames.



Maintenance and Cleaning:

To help prevent fires due to grease accumulation, enlist the services of a professional to regularly inspect and clean the hood and duct systems, exhaust fans, exhaust ducts, and hood filters.

Inspection Schedule for Grease buildup

Type or volume of cooking Inspection	Frequency
Systems serving solid fuel cooking operations	Monthly
Systems serving high-volume cooking operations, such as 24-hour cooking, charbroiling, or wok cooking.	Quarterly
Systems serving moderate volume cooking operations	Every six months
Systems serving low-volume cooking operations, such as churches, day camps, seasonal business, or senior centers	Annually



Cooking Equipment Safety Interlocks:

If a fire occurs, the source of fuel to the equipment should be disconnected since it can cause re-ignition. This is typically accomplished through the use of a solenoid valve.



Fire Extinguishing System:

To control and minimize damage from cooking fires, make sure all hood and duct systems are protected by a wet chemical suppression system that meets the requirements of UL 300 and NFPA 17A.

Kitchen area should have at least two fire extinguishers on-hand and ready for action. A Class K fire extinguisher is needed for initial response to grease fires. All staff should be trained in the use of both classes of fire extinguishers, which should be tested regularly.

General Tips

- To prevent fires in the general kitchen area, train employees in the safe operation of deep fat fryers.
- Establish maximum acceptable temperature settings.
- Establish proper oil levels — allow for expansion due to heating.
- Do not overload the cooking tank with products, which can cause overflow and spilling.
- Do not operate the equipment without the ventilation turned on.
- Do not operate the equipment without the filters in place.
- Do not drop food into the cooking tank, which can cause the oil to splash.
- Do not move fryers away from the extinguishing system and ventilation hood.
- Maintain a distance of at least 16 inches between a deep fat fryer and adjacent equipment with surface flames.
- Maintain good housekeeping in the kitchen, including:
 - Not storing combustible materials within 36 inches of any electrical panel.
 - Not storing combustible materials near cooking appliances, especially those using open flames.

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