RSA INSURANCE

# **Commercial Kitchens:** A Fire Risk Management Guide for Business Owners

# Risk Management Guidelines
## Commercial Kitchens

## Introduction

Commercial kitchens within restaurants, cafes, hotels and the like are very busy environments containing a number of risks due to the use of fryers, griddles and other cooking ranges which are a major cause of fires.

The potential for serious losses can be reduced by training staff to follow good policies and procedures as part of a formal risk management programme.

A senior member of staff must be tasked with ensuring that the programme is properly followed, and any required corrective action is immediately implemented.

The following is a guideline only and provides some information on the typical risks in kitchen along with examples of good risk management practices.

Business owners and managers must still ensure that they are fully aware of, and fully understand, any terms and / or conditions set out in their Insurance Policies that relate to the topics in the guide.

For example, the inspection and maintenance of cooking equipment, ducting, ventilation and extraction systems as well as the provision of automatic fire detection and fire extinguishers.

## Ignition Sources

Cooking equipment is the primary potential source of ignition and this includes gas-fired equipment providing an immediate source of flame, deep fat frying apparatus and electrical equipment such as toasters, fryers and griddles.

The risks of fires in commercial kitchens are:

a) Overheated oil leading to spontaneous ignition
b) Failure of safety devises such as thermostats and the absence of a second high-level thermostat
c) Poorly managed and cleaned extraction ducts resulting in flames, sparks or hot gases igniting combustible deposits inside extract ducts (see Extraction, Ventilation and Ducting)
d) Fan motor failure or overheating
e) Unattended cooking activities
f) Kitchen apparel (aprons and gloves), drying and cleaning cloths left haphazardly on or near cooking ranges
g) Absence of shut down procedures and therefore, equipment not being switched off at the end of the working day
h) Equipment being lit by matches or burning pieces of paper in the absence igniters
i) Absence of flame failure or safety shut off devices
j) Use of portable gas torches for browning of foods
k) Use of poorly maintained portable gas warming appliances

To help address these risks staff must be well trained to ensure their behaviours are correct and do not undermine health and safety, and fire prevention, in the kitchen.

Effective formal risk management practices must be implemented with regards to installation, use, management and maintenance of kitchen equipment and also fire detection and suppression systems.

## Fire Risk Assessments

As a starting point, a Fire Risk Assessment must be undertaken to include the use of kitchen equipment, it's location, all maintenance procedures on both the equipment and electrical installations, the provision and placement of safety devices such to switch off equipment (incl. gas supply) together with housekeeping practices and general fire precautions

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The results of the assessment must be documented, together with action points, and reviewed annually.

## Deep Fat Frying

a) Deep fat fryers must be fitted with non-self setting thermal cut out devices which shut off the heat source should the temperature of the fat exceed 230°C
b) Deep fat frying to only to be undertaken in purpose designed equipment and not in open pans on the hob
c) Caution to be exercised when changing or replenishing the pan with fat to avoid spillage or overfilling.
d) The cooking oil level in the pan to be kept within the stipulated levels for safe operation so the sensing device or the electrical heating element is not exposed during operation
e) Oil or fat to be changed in accordance with supplier's recommended intervals and must only be under taken when the appliance is switched off and oil has had time to cool

## Cooking Ranges

a) A major fire hazard is gas leaks behind cooking ranges and therefore the appropriate and approved heavy duty flexible gas hose must be fitted to kitchen equipment AND inspected during health and safety inspections
b) Emergency shut off controls (gas and electric supply) must be sited well away from the cooking equipment. A location along escapes routes would be a good practice
c) Only oven igniters owned by the business and manufactured under an approved and registered brand are to be used

## Electrical and Gas Supply Installations

a) Cooking equipment must only be installed in full accordance with the manufacturer's instructions
b) Connection to the power supply to be carried out by a qualified registered electrician and suitably qualified and registered contractor in terms of gas equipment
c) LPG gas bottles for cooking purposes to be sited externally in a secure metal cage in accordance with LPG Storage Regulations and Codes of Practice
d) Electrical equipment to be installed and tested in accordance with the National Rules for Electrical Installations such as IS10101:2020 and connected to an independent isolator or junction box fitted with an independent Residual Circuit Device (RCD) of suitable fuse rating
f) Annual portable appliance testing to be undertaken by a competent person in accordance with current Health and Safety Regulations governing Portable Appliance Testing (Safety, Health and Welfare at Work (General Application) Regulations 2007)

## Extraction, Ventilation and Ducting

a) Mechanical extract ventilation to be provided for all cooking equipment producing heat, fumes and products of combustion
b) Extraction to be via an overhead canopy and ducting system that discharges to the open so that grease will not be deposited on the building or adjoining properties. The system to be constructed of galvanised or stainless steel with all seams and joints liquid tight, smooth surfaces to enable cleaning and suitable lighting

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Fires in this equipment is caused by flames, sparks or hot gases from cooking activities igniting an excessive build up of cooking oil deposits within these systems, with some mixtures such as animal fats and vegetable oil particularly easy to ignite.

Therefore:

c) Where ducts pass through fire compartment walls they are to be fitted with automatic fire dampers which are subject to on-going maintenance or protected to the same fire resistance as the walls
d) If ducts pass through any combustible material it should, where possible, be cut away for a distance of at least 150mm
e) Ducts not to pass through or be contained within combustible floor or ceiling voids
f) Bends which might collect residues to be engineered out of the design or, at each change in direction of the duct, an opening with a grease tight cover provided for cleaning purposes
g) Filters or grease removal devices to be provided, with a weekly cleaning regime implemented and a record of cleaning kept
h) Ductwork to the extraction and ventilation system must be subject to a formal maintenance contract that includes a deep clean and service of ducting, fans and motors to remove deposits at regular intervals, usually every 12 months as per suppliers but often at intervals required **as part of the terms and conditions under a warranty in insurance policies.** In most instances this is 6 or 12 months, depending on use

A service or maintenance report must be issued by the contractor who serviced the equipment.

## Maintenance and Cleaning

a) Equipment must be subject to a preventative maintenance programme with all inspections, tests and maintenance carried out by qualified persons registered with the appropriate trade body
b) Only modern equipment to be used and operated in accordance with the manufacturer's instructions
c) All equipment to be serviced at least annually or in accordance with manufacturer's recommendations whichever is more frequent, **not withstanding the aforementioned insurance policy terms and conditions which may demand an increased frequency**, by qualified and registered persons

This must include all safety devices associated with the equipment, such as thermostats incl. calibration checks

d) A formal report and record of maintenance must be issued by the contractor to confirm the work has been done

e) Particular attention to be paid to deep fat fryers, with all surfaces cleaned regularly. Filters and grease traps to be cleaned at least weekly

f) A written log of inspections, cleaning schedule and remedial action to be maintained. Inspection and certification of all gas and electric consuming equipment and fridges to be documented

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## Automatic Fire Alarms

Consideration must be made for the installation of, or upgrading existing system to, an automatic fire alarm system conforming to I.S. 3218:2013+A1:2019 - Fire detection and alarm systems for buildings - System design, installation, commissioning, servicing and maintenance.

The installation within the kitchen must be designed and installed in accordance with category L1 with remote signalling to an approved alarm receiving centre.

## Automatic Fire Suppression Systems

a) Consider an automatic fixed suppression system approved to LPS1223 with a suitable class of extinguishing agent. The system is to be designed to protect both the cooking equipment and the overhead canopy and ducting system. An example would be an Ansul Fire Suppression System
b) Fire suppression systems to be linked to an audible or remote signalling device and to also automatically isolate/switch off the extraction system
c) A programme of testing and maintenance must be in place in accordance with the installer's recommendations and this must be documented. A service or maintenance report must be issued by the contractor who serviced the equipment

## Fire Extinguishers and Fire Blankets

Fire blankets and Class F extinguishers must be located in the kitchen with regular inspection and maintenance undertaken by an approved supplier recorded.

Extinguishers must be serviced every 12 months by a registered service provider.

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