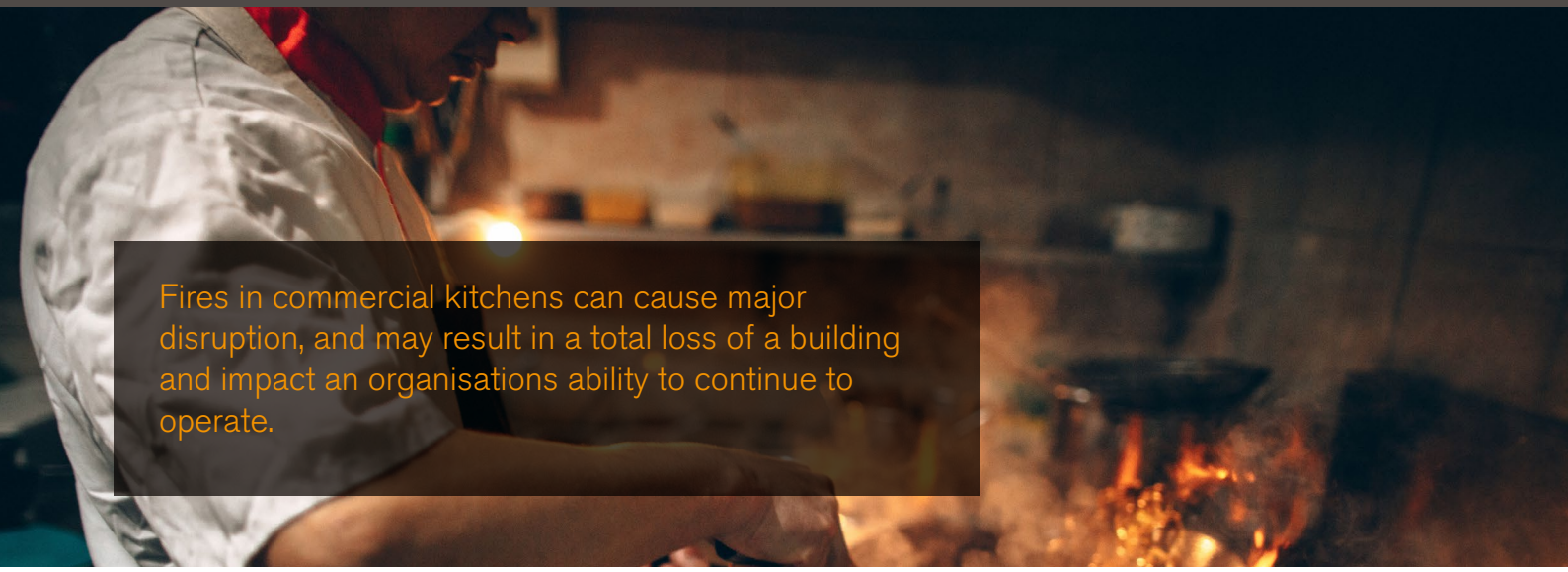
Kitchen Fire Suppression Systems



Fires in commercial kitchens can cause major disruption, and may result in a total loss of a building and impact an organisations ability to continue to operate.

Introduction

Fires in the foodservice industry account for 10% of all fires in non-dwelling buildings and 17% of non-fatal casualties (Source: Home Office Incident Recording System. 2014/15 Statistics).

The most common causes of commercial kitchen fires include: defective or damaged heating controls, overheating of cooking oils and fats, unattended devices, burners overheating and grease / dirt residue build-up.

Good housekeeping and maintenance regimes along with staff training will reduce most of the above exposures, but will not fully eliminate the risk of fire in kitchens.

Kitchen fire suppression systems can provide an additional layer of protection to your kitchen by offering a unique way of putting out a fire quickly and efficiently.

Kitchen fire suppression systems are automatic fire extinguishing systems designed for the protection of catering and extraction equipment in commercial kitchens.

What is a Kitchen Fire Suppression System?

A kitchen fire suppression system is an automatic, pre-engineered, fire suppression system designed to protect areas associated with ventilating equipment (including cooker hoods, extraction ducting, plenums, and filters) and cooking equipment (such as fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite, or gas-radiant char-broilers; and woks).

These systems are installed in commercial catering facilities across a wide variety of premises including restaurants, hospitals, nursing homes, hotels, schools, airports, and other similar facilities.

Typically systems are cartridge-operated, regulated pressure type systems containing a wet chemical fire extinguishing medium, with a fixed discharge nozzle distribution network.

As well as automatic detection and actuation, kitchen fire suppression systems can also be manually activated.

In order to offer the best level of protection the system should also be connected to the building fire alarm panel, electrical shutdown and/or interface and mechanical or electrical gas line shut-off applications.

How does it work?

The majority of kitchen fire suppression systems are triggered by fusible links (a thermal link fixed to a wire which breaks at a predetermined temperature to release a control valve) fitted over the protected area, or by a manual pull switch.

During a fire the fusible link will break when the temperature of the fire exceeds the rating of the link. The breaking of the link allows the regulated release of the extinguishing agent via the discharge nozzles.

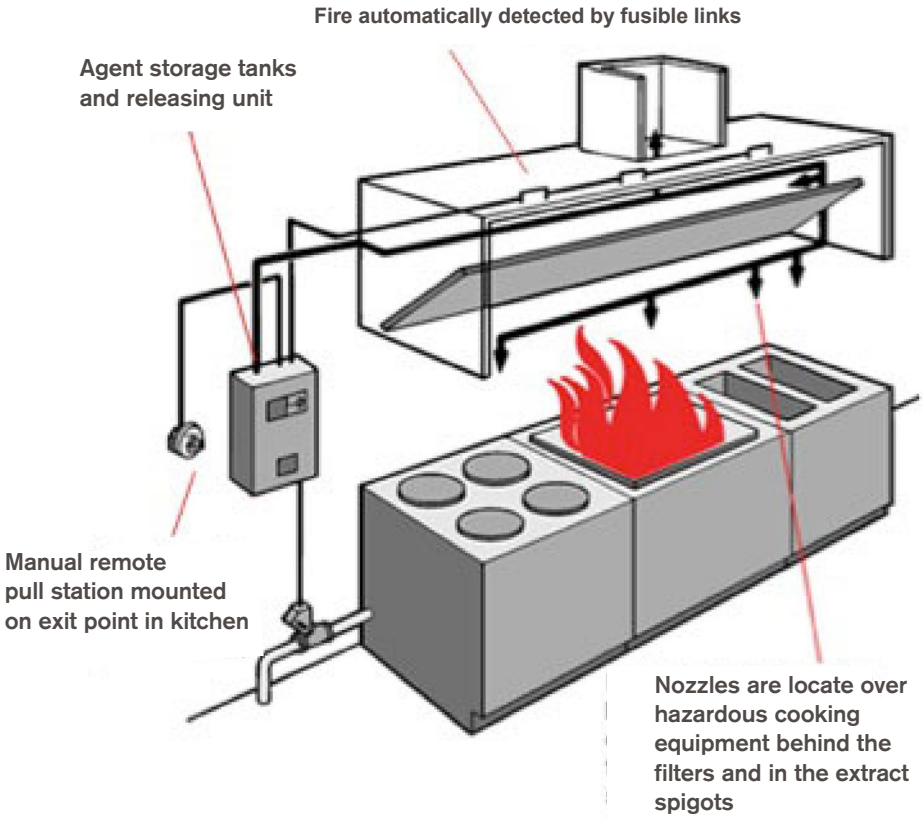
Some kitchen fire suppression systems are triggered from automatic fire detection systems.

When triggered the suppression system dischargers the extinguishing agent through all of the nozzles. The extinguishing agent attacks the fire by rapidly knocking down the flame and reacting with the heat and cooking grease to produce a saponified foam layer, starving the fire of oxygen to prevent re-flash.

As the extinguishing agent is water based, the kitchen can be quickly cleaned down ready to be re-utilised.

The water based extinguishing agent is stored in one or more stainless steel tanks (depending on the size of the system) which are mounted adjacent to the kitchen extract canopy. Pipework from the nozzles terminate at the tanks and a valve operates the release. Once the system is triggered the agent is propelled from the tank to the nozzles.

After operation, the system can be recharged and ready to work again in a very short period of time.



Standards and Accreditations

Kitchen fire suppression systems should meet the requirements of LPS1223 “Requirements and testing procedures for the LPCB certification and listing of fixed fire extinguishing systems for catering equipment” or UL 300 (Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment).

The system should only be installed by authorised distributors that are trained by the manufacturer and preferably who are also BAFE Scheme SP206 “Design, Installation, Commissioning, Recharge & Maintenance of Kitchen Fire Protection Systems” accredited.

Once installed the system should be serviced in accordance with the manufacturer’s guidelines, preferably by a BAFE Scheme SP206 accredited company.

The BAFE SP206 Scheme has been developed to provide end users that use kitchen equipment with the confidence that the kitchen fire protection system they have had installed or maintained, has been undertaken by a provider that has been independently assessed for their competence to complete these works.

This third party certification scheme covers the Design, Installation, Commissioning, Recharge and Maintenance of kitchen protection/suppression systems. This scheme is not modular, meaning that the company must have the competence, and will be assessed, in all these skills to gain third party certification.

The result being that when a BAFE SP206 Registered Company installs or maintains a system they will have the skills required to make adjustments to the system in the event that kitchen equipment has been moved, removed or added. Furthermore, they will have to demonstrate, through the assessment process, that they completed the work in accordance with the scheme requirements.

Each system visit, whether a new installation or maintenance will require a Certificate of Conformance to be issued in line with scheme requirements to confirm it is in full working order in the event of a fire. You should retain these certificates for future reference.

The BAFE Kitchen Fire Protection Systems Scheme observes best practice, including LPS 1223 (fixed fire extinguishing systems for catering equipment) and the UL 300 (Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment) Approval Standards.

You can find an approved BAFE 206 scheme member here. Alternatively, Ecclesiastical customers can benefit from preferential rates from our preferred supplier Global Fire & Security Systems.

Need to contact us?

For further advice Ecclesiastical customers can call our Risk Management Advice Line on 0345 600 7531 (Monday to Friday 09:00 to 17:00, excluding Bank Holidays) or email us at risk.advice@ecclesiastical.com and one of our experts will call you back within 24 hours.

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