

**ENGINEERING BULLETIN**

Date: 15.06.2018

Product Range: All AOM in hood and in duct filtration equipment

In order to guarantee full compliance with Building Codes of Australia and relevant Australian Standards regarding both in hood and in duct grease filtration devices (particle matter), the use of filters made of materials that are not deemed combustible (AS 1530.1) is highly recommended.

All it takes is for the cooking line to have an exposed gas flame (as found on a gas burner), for the following statements to come into force – even in an in-duct grease filtration plant.

Australian and NZ standards *The use of ventilation and air conditioning in buildings, Part 1: Fire and smoke control in building (AS1668.1-2015)* states the following.

6.2.9 Flame and Spark Arrestance

Where the length of an exhaust duct within the building exceeds 10 m and where an exposed flame or embers may be present as part of the cooking process, devices that prevent the spread of flames in accordance with UL 1046 shall be incorporated into kitchen exhaust hoods (or filtration systems).

UL 1046 provides the following key statements with regards to the above:

**Introduction**

5 Glossary

5.4 NON-COMBUSTIBLE – A material that, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion or release flammable vapors when subjected to fire or heat.

**Construction**

6 General

6.2 Parts of grease filters that are exposed to cooking effluent shall be constructed of non-combustible materials.

AOM Australia / University of Sydney testing of the composition of commercial kitchen exhaust showed that particle matter is composed almost exclusively of grease particles in different sizes. The includes the concept of "smoke", which is mainly composed of fine and ultra-fine grease particles.

Hence, AOM recommends that all particle filtration devices used within commercial kitchen exhaust and in contact with the grease effluent be made of non-combustible material. This therefore excludes the use of filters such as electrostatic filters, bag filters, HEPA, panel filters, pleat filters and other filters generally used in filtering non-kitchen exhaust effluent to high efficiencies – unless these are proven to be made of non-combustible material.

In addition, these filters capture and contain grease particles, which increases their combustion risk.

**AOM Australia will NOT supply such filters as in the case of a fire, the liability of these will be jointly shared between the specifier, the installer and the supplier.**

Electrostatic precipitators on the other hand capture grease particles, which then precipitate down into a grease tray. The AOM brand SCRUBBOX Electrostatic precipitators are made of non-combustible materials and have recently been certified to UL 867 - Electrostatic Air Cleaners.

AOM Australia SCRUBBOX Series electrostatic precipitators were recently involved in a duct fire which originated from solid fuel cooking equipment and rose into the ducting, burning the grease that had built up downstream of the filter. The intensity of the fire was such that the electrostatic cells located in the electrostatic precipitators buckled and partially melted (though they did not combust) thus blocking the fire from moving downstream of the filter into the ducting. The overall unit however maintained its structural integrity and contained the fire within the upstream duct work section.



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