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SAFETY IN THE KITCHEN

EXTRACTION CANOPY – A POTENTIAL FIRE HAZARD

Cleaning of the extraction canopy is essential on both hygiene and fire safety grounds. Although a greasy extraction canopy may not increase the risk of food poisoning, the greasy deposits and build-up inside an extraction canopy is a great breeding ground for all types of bacteria. The contaminated grease may drip from the canopy and contaminate food and utensils. Regular cleaning to ensure that no dripping grease is present will minimise the risk.

However, the extraction canopy is a very real fire hazard. Some 70% of kitchen fires originate in the extraction canopy and associated ductwork. In kitchens, a good ventilation system will remove heat and grease coming off cooking equipment and will also remove dangerous carbon monoxide gases from the combustion of gas cooking. Grease that builds up in the extraction canopy is easily ignited. A small flame from flambéing or flame-grilling could easily ignite and have disastrous consequences. Kitchens have been known to ignite even after shut down due to the heat from the cooling cooking equipment. Cleaning of the extraction canopy is therefore essential on both hygiene and fire safety grounds.



Source: National Fire Protection Association, "Structure Fires in Eating and Drinking Establishments"

Thus, there is a national standard (SANS 1850) covering kitchen exhaust systems and its requirements are generally beyond the scope of in-house stewarding and maintenance staff.

Cleaning the Canopy

1 Canopy, grease removal devices, fans, ducts and other appurtenances shall be cleaned to bare metal at a minimum interval of six months.

2 After the exhaust system has been cleaned to the bare metal, it shall not be coated with powder or other substances

3 After cleaning has been completed, the cleaning contractor shall not be coated with powder or other substances.

4 A certificate that indicates the date on which the cleaning was done and the name of the servicing company.

5 Provide a report containing the following:

- The system(s) cleaned
- Pre-clean measurements
- Post Clean Measurements
- Photographic records
- Additional works carried out (if any)
- MSDS for any chemicals used
- Recommendations for future cleaning requirements
- Observations on the condition of the ductwork system

FRYING OIL

Deep frying is a method of cooking foods by submerging the food items into extremely hot oil until it reaches safe core temperatures. When food is deep fried correctly it will be hot and crispy on the outside and safely cooked in the centre. However, deep frying food can be dangerous and can pose certain health risks.

Potential Health Risks

Fried food quality is a function of oil quality. If the cooking oil is abused or damaged, it affects the texture, taste and overall flavour perception of the food. Improperly maintained deep fryers and frying oils can result in degradation of the oils leading to serious food safety hazards, including:

- If food is undercooked, pathogens will survive, leading to foodborne illnesses. Although there have been no documented cases of food poisoning attributed to fried foods, if frying oils are not maintained properly, the oils may not adequately cook foods, such as chicken, therefore allowing pathogens such as *salmonella* to survive.
- Degraded frying oil can contain increased levels of oxidized lipids that may be harmful to health.
- Allergens often pose a great risk in fryers. Many operations that fry different products in a single fryer increase the risk that an allergen can be transferred into the oil and onto another product
- Hot oil can burn people and start fires.

Preventing problems

Maintaining deep fryers and frying oil:

- Frying oil should not be heated above 180°C.
- The level of degradation of the oil should be tested with a commercial test kit/colour chart or hand held measuring device.
- Food particles and crumbs should be removed frequently.
- Frying oil should be changed when the level of Total Polar Materials is greater than 24%.
- Use separate fryers for different food items such as potatoes and fish.
- Oil fryers should be drained and cleaned daily.
- Oil should be filtered on a daily basis.

Stage I: Oil Break – in.	Stage II: Fresh Oil	Stage III: Optimum Oil	Stage IV: Degrading Oil	Stage V: Spent Oil
Clear in color, no odor, very little oil soaked up by food	Slight browning at edges of fry, crisping, more oil soaked up by food.	Golden brown color, good crispiness, minimal soak into food	Darker browning of food, uneven frying and hardening, too much soak into food	Hardened frying of food, bad or "off" odor and too much oil soak. Very uneven frying.



Fryers and Safety

- *Most kitchen fires start due to someone forgetting about the oil they are heating.*
- *Always make sure that the oil fryer is switched off when you leave the kitchen, especially if there is load shedding!*
- *Never leave water or other liquid near the fryer where it can accidentally be spilled. Hot oil can spray violently in all directions.*

For a copy of our Oil Safety Checklists, please see <http://foodconsulting.co.za/documents/>



THE BENEFITS OF HOT AND COLD HOLDING FACILITIES

Over the past few years, more and more restaurants have started implementing buffet areas as a strategic move to improve their public appeal. The advantage of having a buffet is that it offers the customer a wide variety of food choices, which of course increases customer satisfaction. It can also assist with food cost when catering for larger numbers. However, various other factors also need to be implemented by kitchen staff to ensure that the development of foodborne illnesses is reduced.



A la Carté

Serving a meal straight from the stove to the plate (*a la minute* or to order) is one of the safest ways to ensure that the customer receives food which is free of contaminants such as pathogenic germs. Additionally, plates are placed on a hot pas to maintain correct food temperatures. The only disadvantage of this method would be timing, i.e. the time taken for the waiter to fetch the plate and deliver to the customer. Ideally, no foods should drop below 45°C as this is one of the critical temperatures whereby bacteria multiply rapidly

Refrigeration

To refrigerate items prepared in advance (*mise en place*) would be the best precautionary method to keep foods free of contaminants. Once food is prepared, there is a 15 to 20 minute waiting period for foods to be kept at room temperature; this is to ensure that the food is not too hot when it is transferred into the refrigeration unit (as this could cause mechanical damage to the refrigeration unit). However, it is advised that the foods be monitored with a probe thermometer to guarantee that foods do not reach temperatures of below 45°C, in which case they should be immediately placed in a fridge. The ideal solution here is a blast chiller. Having a blast chiller allows food to drop to low temperatures within minutes and they can then be safely stored in a fridge or freezer.



Serving food al la carte is one of the safest ways of serving food. When displaying foods on a buffet, there are various risks involved and various foodborne illnesses attached to a specific group:

- **Staphylococcus aureus**- Prolonged storage for contaminated cooked foods at room temperature
- **Clostridium perfringens**- improper cooling and re heating of foods
- **Vibrio parahaemolyticus**- contaminated sea foods
- **Norwalk-like virus**- contaminated raw oysters and infected food handlers
- **Salmonella species**- Cut fruits and tiramisu using raw eggs as ingredients



A few critical points which should be implemented:

1. Do not display foods too far in advance as this will allow temperatures of food to increase rapidly
2. All foods should be protected from all contaminants while transferring to the display facilities (kept covered)
3. Keep foods as cold or hot as possible (cold foods at 4 C and hot foods at 65 C or above)
4. Cold and Hot facilities should be operational for keeping foods at the correct temperatures. The safest and best option for cold-holding facilities would be as ice well. For hot holding facilities, bain maries are one for the best solutions.

Preventative measures, to prevent food borne illnesses

A food safety plan should be a part of every kitchen and it usually contains preventative measures if things go wrong. A few preventative measures which can be implemented in your kitchen

- Encourage regular hand washing
- Do not prepare food when sick
- Always segregate ready to eat foods from any raw foods
- Foods in the refrigeration units should always be covered and dated to ensure no foods are left in the unit for extended periods of time
- Invest in a digital probe thermometer and always use this to test the food core temperatures
- When displaying foods on a buffet, be sure to monitor temperatures and always have refrigerated back-up dishes
- Have proper cold- and hot-holding facilities to maintain correct food temperatures

In essence, food borne illness can be controlled on a buffet. With the correct preventative measures and correct procedures, not problems should arise.

