

AMM Risk Management Seminar

April 5, 2023





Commercial Kitchens

Commercial Kitchens | Fire Protection Basics





Commercial Kitchen Fires

- Significant part of fire claims insurance companies' process
- Majority a result of poor construction and installation, and poor maintenance practices
- Tend to start when flare-ups ignite the grease residues on the filters and hood

A photograph of a commercial kitchen. In the center, there is a large stainless steel range hood with multiple vertical slats for ventilation. Below the hood is a stainless steel cooktop with several burners. The background wall is covered in reflective, metallic tiles. To the left, there are shelves with various kitchen items, including a white electric kettle. To the right, there are more shelves with containers and a rack of utensils.

Principles of Commercial Cooking

- Commercial Kitchen Ventilation (CKV) is defined as the properly designed and balanced air removal (exhaust) and return (makeup) system over commercial cooking equipment.
- Because combustible grease vapors condense and accumulate within the exhaust system, it is necessary for that section of the CKV system to be constructed and installed in a way to withstand the possibility of internal fire.

Cooking Fuels



Gas



Electric Systems



Solid Fuels

Appliances

- Oven
- Grill/Griddle
- Deep Fat Fryer
- Stove/Range
- Char Broiler
- Salamander
- Pizza Oven
- Wok
- Rotisserie
- Other
- Self-Contained Deep Fat Fryer



Hoods

- Most visible component
- Capture heat and effluents
- Primary filtration system
- Size and make depend on:
 - Number of appliances
 - Type of appliances
- Usually where the exhaust cleaning sticker is located



Type I Hood with Baffle Filters

Fire Extinguishing

- UL-300 and ULC/1254.6
- NFPA 96 and 17A - Fire Extinguishing System Requirements
- Generally includes:
 - Pre-engineered fixed pipe fire extinguishing system (Primary Protection)
 - Portable Fire Extinguishers (Secondary Protection)



Fire Protection Requirements

- Wet chemical installation
 - Dry chemical no longer approved!
- Emergency manual operation
- System approved by UL-300/ULC 1254.6
- Inspected and serviced semi-annually
- Class “K” Fire Extinguisher



Exhaust Ducts

- Welded, metal ductwork
- Similar to the drainpipe of our bathtub, only instead of water it carries heat and vapor
- Must be liquid-tight (grease-tight)

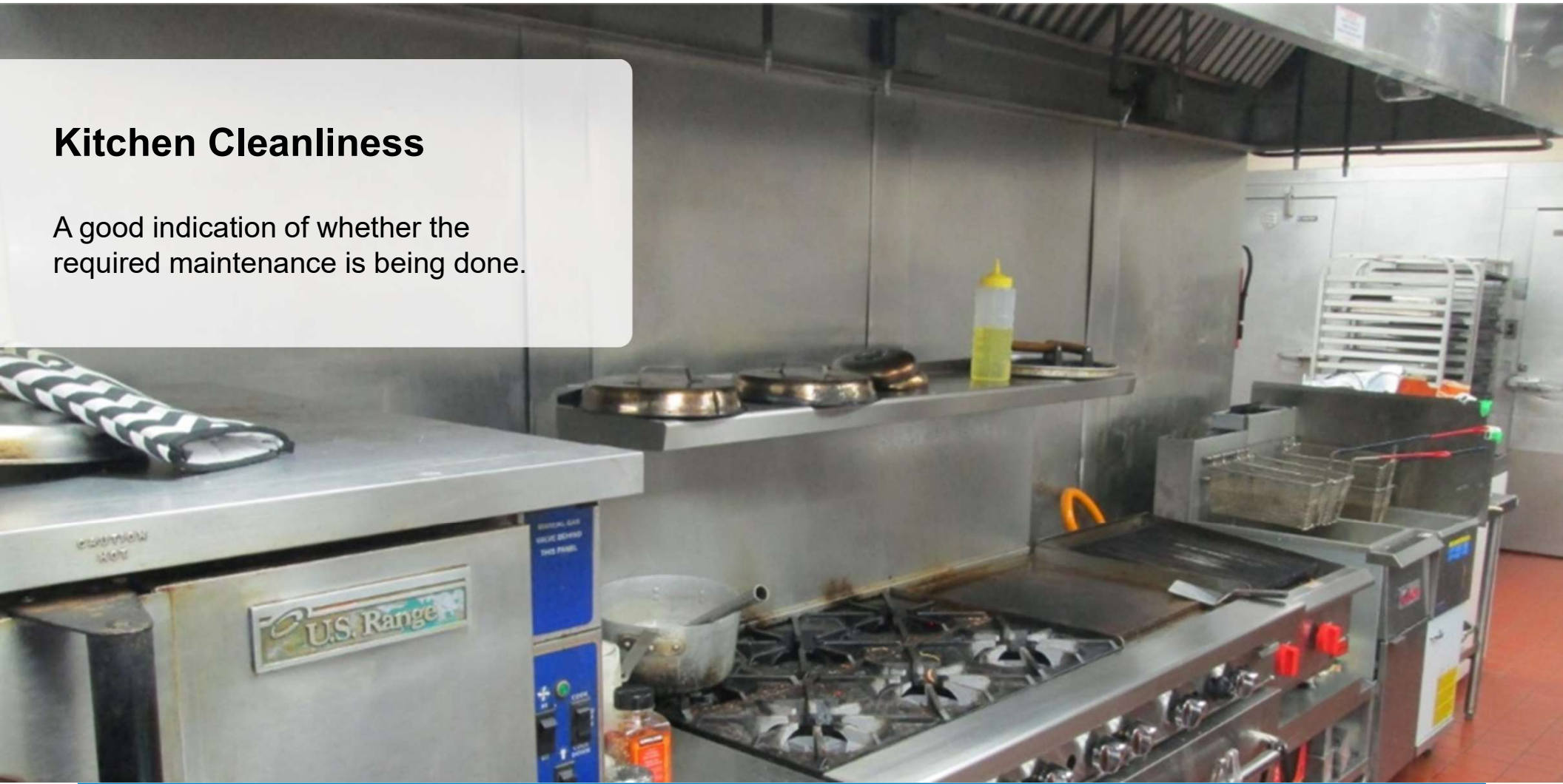


Exhaust Ducts - questions we need to ask:

- Do they discharge directly outside?
- Do they pass through combustible materials?
- Do they extend through the roof?
- Are they protected by a fixed extinguishing system? If so, what is the year of installation?
- Are the ducts cleaned at least semi-annually?
- What is the name of the duct cleaning company, and date of last cleaning?

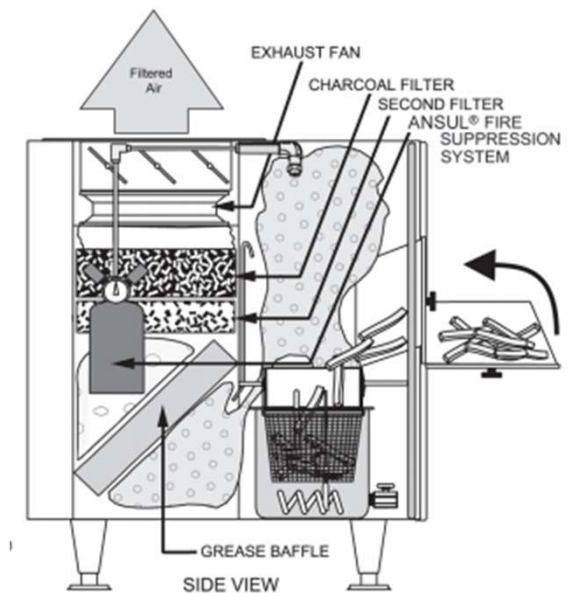
Kitchen Cleanliness

A good indication of whether the required maintenance is being done.



Fryer Alternatives

- Many options involving counter top self-contained, ventless deep fryers
 - Must contain a wet chemical extinguishing system
 - Must still be serviced on a semi annual basis by a qualified technician
- Example wording in the Perfect Fryer owner manual
 - The PFS automatic extinguisher must be inspected monthly by the owner/operator and semi-annually by authorized service personnel as per NFPA 17A. It is important that a maintenance program is set up with a local fire service company to ensure that local jurisdictional codes are being met.



Classification of Fires

- **Class A** - fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.
- **Class B** - fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.
- **Class C** - fires that involve energized electrical equipment.
- **Class D** - fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.
- **Class K** - fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats).

Wet Chemical Extinguishers

- In recent years
 - The development of high-efficiency cooking equipment with high-energy input rates
 - Widespread use of vegetable oils with high autoignition temperatures
- The wet chemical extinguisher was the first extinguisher to qualify to the new Class K requirements.
 - Rapid fire extinguishment,
 - Thick foam blanket
 - Improved visibility
 - Minimizing cleanup afterward



Service

- Fire extinguishers require annual inspection by a qualified contractor
- Extinguishers should be tagged with the date of last service and company
- Western Financial Group has compiled a database of fire extinguisher servicing and/or supply companies to provide clients









THIS EXHAUST SYSTEM WAS PROFESSIONALLY CLEANED BY:



**ASSINIBOINE FIRE
PROTECTION**
1911 Richmond Avenue, Brandon, MB R7B 0T4

YEAR	2020		2021		2022		2023		2024		2025		2026	
MONTH	J	F	M	A	M	J	J	A	S	O	N	D		

AREAS NOT ACCESSIBLE/CLEANED:

- ☒ VERT. DUCT ☐ HORZ. DUCT ☐ FAN ☐ FILTERS ☐ CANOPY
☐ COMPLETE SYSTEM CLEANED IN ACCORDANCE TO NFPA 96 11.6.1.1.1

Technician
Name: Matthew Cert # 200030



Next cleaning recommended: 3 months ☐ 6 months ☒ 12 months ☐

Phone: 204-727-FIRE (3473)

New Hood & Fire System Supply & Installations

email: afp@mts.net

Leach Printing 270480





This label verifies that this Fire Protection/Life Safety Installation has been inspected, tested or cleaned in accordance with the Manitoba Fire Code as of:

JAN FEB MAR APR MAY JUN JUL AUG SEPT OCT NOV DEC

2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Fire Protection/Life Safety Installation Address

Technician Name

Fire Safe Kitchen Exhaust Cleaning

Phone: (204) 231-8888

This Label is **NOT** a substitute for a report where required by the Manitoba Fire Code. Reference The report if applicable for detailed results of the inspection, test and/or cleaning of this Fire Protection/Life Safety Installation.

The Fire Protection/Life Safety Installation is Fully Functional

YES



NO



The Fire Protection/Life Safety Installation HAS Deficiencies



The next inspection, test, or cleaning is required as of

May 2022

TO MANUALLY ACTUATE SYSTEM:
PULL RING ON REMOTE PULL STATION

FOR MAINTENANCE, SEE TANK LABEL

ANSUL®

ANSUL INCORPORATED
MARINETTE, WI 54143-2542



FIRED

SERIAL NO. R 101808

LABEL NO. 419063



ABC
FIRE & SAFETY
EQUIPMENT LIMITED

800 MARION ST. WPG. MB 204-233-6083

www.abcfireandsafety.com

FOR 24 HOUR SERVICE CALL:
204-233-6083 • 1-800-665-1250

IN CASE OF FIRE DO NOT
TURN OFF FAN



This label verifies that this Fire Protection/Life Safety Installation has been inspected, tested or cleaned in accordance with the Manitoba Fire Code as of:

JAN 2020 FEB 2021 MAR 2022 APR 2023 MAY 2024 JUN 2025 JUL 2026 AUG 2027 SEP 2028 OCT 2029 NOV 2030 DEC 2031

Fire Protection/Life Safety/Installation address: 26 Maricota

Technician Name

Please Print

Signature

Lic. #



ABC Fire & Safety Equipment Ltd.
800 Marion St., Winnipeg, MB R2J 0K4
(204) 233-6083 800-665-1250

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The Fire Protection/Life Safety Installation is fully functional

Yes ☒

No ☐

The Fire Protection/Life Safety Installation has deficiencies

☐

☒

The next inspection, test or cleaning is required as of:

M-M

Y-Y-Y-Y







TEMP AT 325°F MIN/LB
165°C

BEEF	25 - 30	BOEUF
HAM	30 - 35	JAMBON
VEAL	40 - 45	VEAU
LAMB	35 - 40	AGNEAU
PORK	40 - 45	PORC
POULTRY	25 - 30	VOLAILE







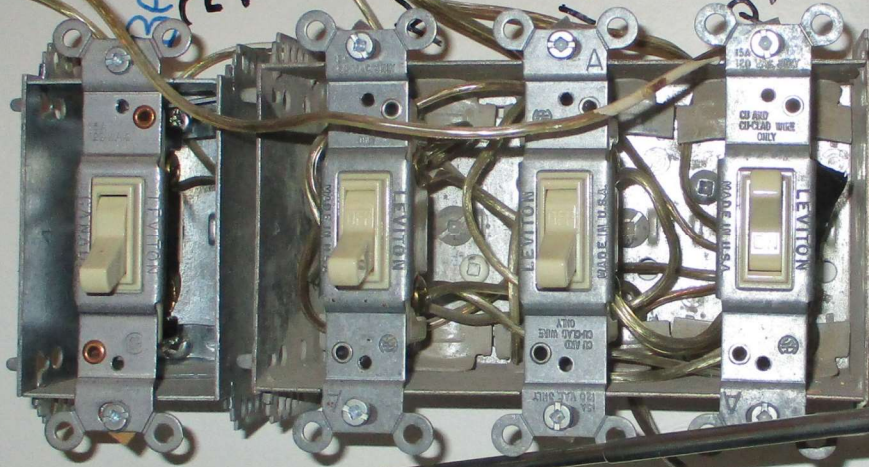
SPEAKERS

BATHROOMS

KITCHEN

LIVING AREA

POSTAIAS



- Deux sorties Jacks 6,35 mm
- Système fourni avec cordons Jack 6,35 mm et Jack 6,35 mm/RCA
- Adaptateur secteur fourni

AC Adapter
CRS6 Half-Rack VHF Receiver

WARNING: SHOCK HAZARD-DO NOT OPEN
AVIS-RISQUE DE CHOC ÉLECTRIQUE-NE PAS OUVRIR



Red logo or text on the top left edge of the stainless steel surface.









Questions?

Thank you for your time!