

## COMMERCIAL COOKING EQUIPMENT EXHAUST AND REPLACEMENT AIR SYSTEMS

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The following guidelines represent the requirements of the BC Building Code 2018 and the referenced standard NFPA 96 2017 edition “Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations”

### GENERAL REQUIREMENTS:

A complete set of plans and specifications shall be submitted for review prior to permit issuance or commencing construction. The work shall be performed by a qualified trade’s person. Trade qualifications may be required. Inspections shall be performed on all systems including a dry trip test.

All new systems should be designed by a Professional Engineer registered in the Province of BC. The letters of assurance B and C are required.

Upgrades to existing systems may be designed by a Professional or a person who is in the field of constructing and the Installation of Equipment for the Removal of Smoke and Grease Laden Vapours from Commercial Cooking Equipment.

If adequate drawings are not available detailed shop drawings may be acceptable.

### PLANS AND SPECIFICATIONS – MINIMUM INFORMATION REQUIREMENTS

The following information shall be provided on the plans and specifications:

- 2.1 The size and location of all cooking equipment.
- 2.2 The location and size of the canopy in relation to the cooking equipment.
- 2.3 Details of the canopy construction, the location of filters (size, type and angle), materials used, depth of canopy, lights and any other accessory equipment.
- 2.4 Details of the canopy to exhaust duct connection.
- 2.5 Construction details and materials used for the exhaust duct, including size and location of clean-outs.
- 2.6 Manufacturer, model type, capacity and location of the commercial cooking equipment exhaust fan.
- 2.7 Method used to protect combustible ceiling and wall finishes within 450mm of the canopy and duct.
- 2.8 Method used to protect combustible materials at exhaust duct penetrations of ceiling/floor and ceiling/roof assemblies.
- 2.9 Method used for mounting roof top equipment (curb details).
- 2.10 Location of the replacement air unit (manufacturer, model type and capacity) and associated duct work.
- 2.11 Manufacturer, model type and capacity of the fire suppression system. The location of discharge heads and fusible links are to be shown as well as the location of manual pull stations.
- 2.12 Location of roof access for maintenance of rooftop mounted equipment.

## **COMMERCIAL COOKING EQUIPMENT EXHAUST AND REPLACEMENT AIR SYSTEMS**

### **REPLACEMENT AIR:**

Replacement air should be provided by mechanical means (incoming air must also be filtered).

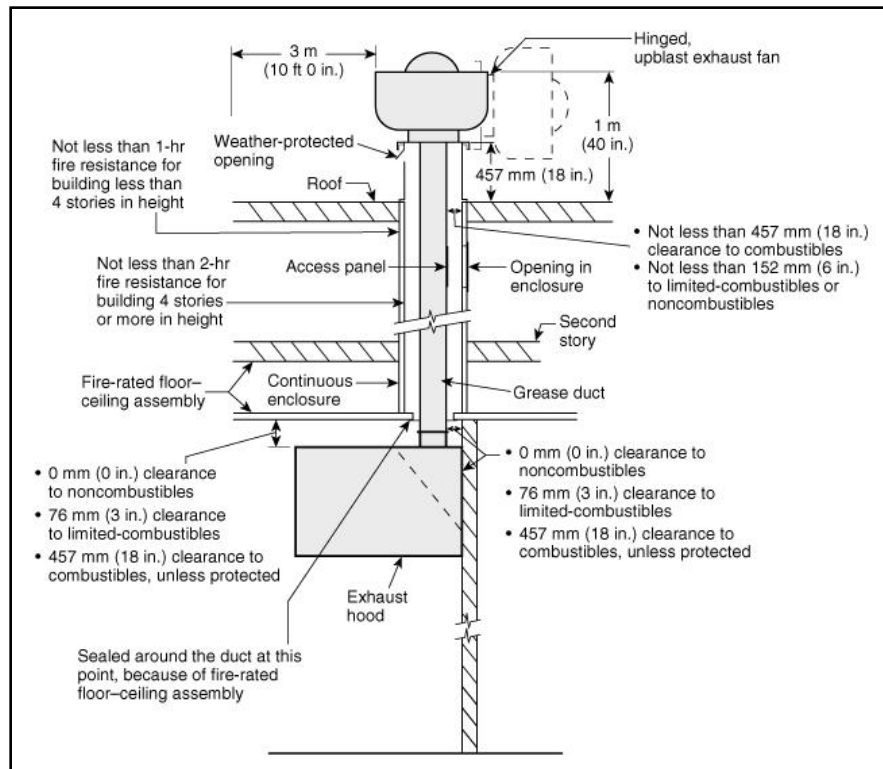
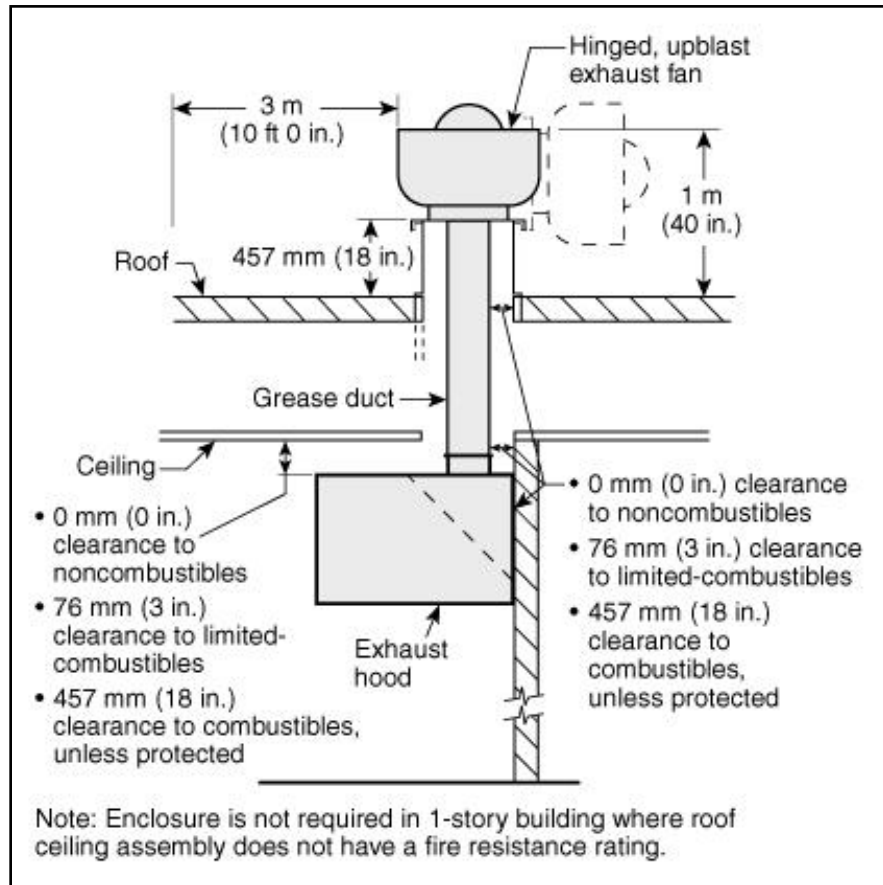
Replacement air supplied to the building should meet “comfort” conditions outlined in the A.S.H.R.A.E. Fundamentals Handbook. (this means the heating equipment must be capable of heating the air from winter design temperatures to approximately 20-deg. cel).

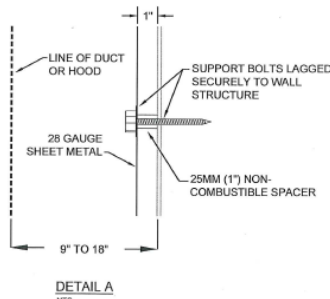
A screened opening in a wall or floor for supplying make-up air may be acceptable, provided air flow calculations are submitted for review.

### **EXHAUST FANS AND HOODS:**

An exhaust fan used to ventilate commercial cooking equipment must be listed by U.L.I or U.L.C. and conform with the referenced UL publications in NFPA 96 2017 Edition. Electrical components must be listed by C.S.A.

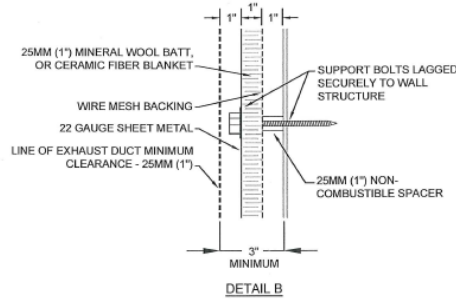
TYPICAL DESIGN DETAIL: (N.T.S.)





**CLEARANCE REDUCTION SYSTEM "A" (NFPA 96 - 4.2.3.1)**

WHERE CLEARANCES ARE LESS THAN 18" BUT GREATER THAN 9" PROVIDE A 28 GAUGE (MIN) SHEET METAL SHIELD SECURED TO BUILDING SURFACE ON 1" NON-COMBUSTIBLE SPACERS.  
NOTE: METAL SHIELD SHALL NOT BE SECURED TO EXHAUST DUCTING OR HOOD.



**CLEARANCE REDUCTION SYSTEM "B" (NFPA 96 - 4.2.3.2)**

WHERE CLEARANCES ARE LESS THAN 9" PROVIDE A 3 LAYER (SANDWICHED) CLEARANCE REDUCTION SHIELD ASSEMBLY AS SHOWN ON DETAIL-B. SHIELD SECURED TO BUILDING SURFACE ON 1" NON-COMBUSTIBLE SPACERS.  
NOTE: METAL SHIELD SHALL NOT BE SECURED TO EXHAUST DUCTING OR HOOD.

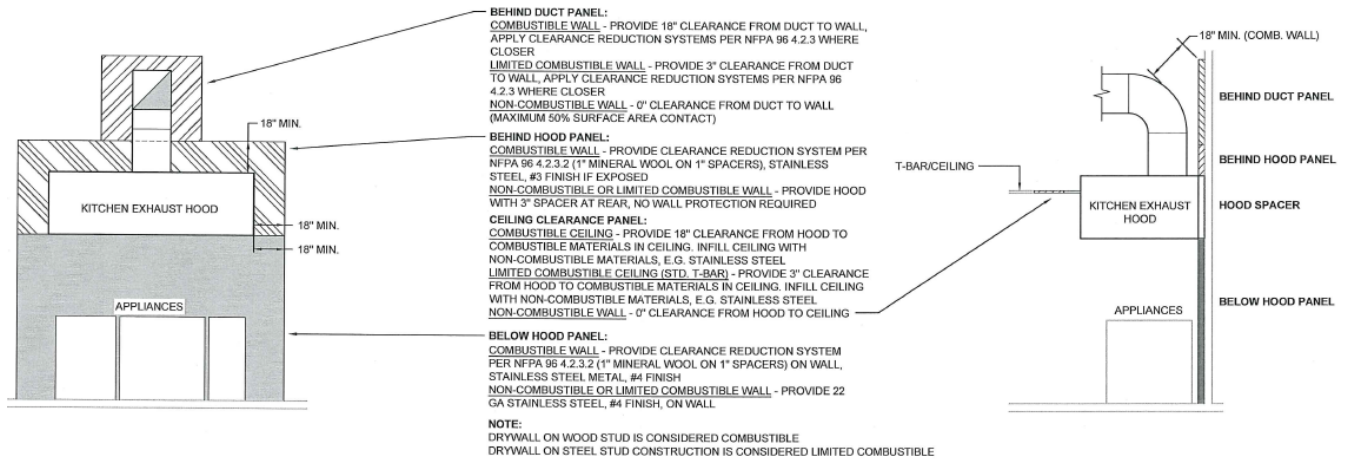
**CLEARANCE REQUIREMENTS**

WHERE ENCLOSURES ARE NOT REQUIRED, ALL HOODS, GREASE REMOVAL DEVICES, EXHAUST FANS, AND DUCTS SHALL HAVE A MINIMUM CLEARANCE OF 18" FROM ANY COMBUSTIBLE MATERIAL, AND 3" CLEARANCE FROM LIMITED-COMBUSTIBLE MATERIAL, AND 0" TO NONCOMBUSTIBLE MATERIAL. CLEARANCE REQUIREMENTS TO COMBUSTIBLE MATERIAL MAY BE REDUCED IF ONE OF THE FOLLOWING "CLEARANCE REDUCTION SYSTEMS" IS USED.

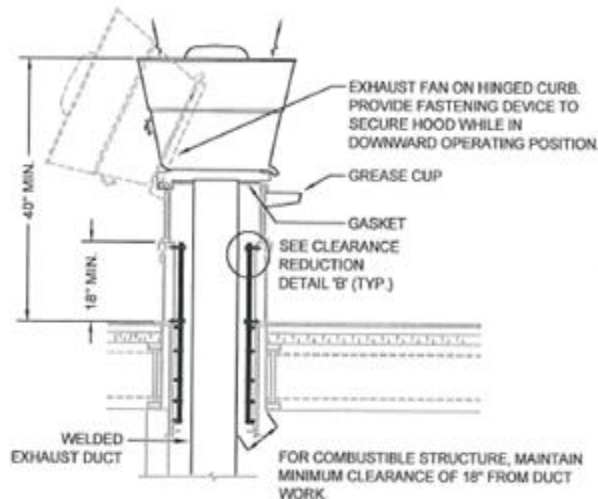
NOTE: "COMBUSTIBLE ASSEMBLIES" INCLUDE (BUT NOT LIMITED TO) ANY WOOD FRAME STRUCTURE COVERED WITH DRYWALL AND PLASTIC PIPES. "LIMITED COMBUSTIBLE ASSEMBLIES" INCLUDE (BUT NOT LIMITED TO) ANY STEEL STUD STRUCTURE COVERED WITH DRYWALL AND T-BAR CEILINGS.

THESE DETAILS ARE FOR INFORMATION PURPOSES ONLY. WHERE CONFLICTS ARISE BETWEEN THESE DETAILS AND NFPA 96, NFPA 96 SHALL APPLY.

**NFPA 96 - CLEARANCE REDUCTION SYSTEMS**



**NFPA 96 - KITCHEN HOOD CLEARANCES AND REDUCTIONS**



**NFPA 96 - ROOFTOP EXHAUST (NO SHAFT)**