

## What is GREASE DUCT?

Exhaust Duct System between hood and fan in a commercial cooking application. Hood captures and contains vapors from the cooking process. Duct conveys these (often heavily) grease laden vapors to the outside atmosphere. Fan provides differential to create / maintain the flow.



## What are THE RISKS?

Grease laden vapors contact walls of duct, leaving grease deposit which build up over time. These deposits are highly combustible and pose a severe fire hazard.

If not liquid-tight, grease could migrate to exterior and build up or drip. This creates or expands the fire hazard outside of the duct and surroundings. Leaks also cause water damage during cleaning and maintenance process.

## What is UL2221?

Due to the inherent fire risk Codes require grease ducts to be installed within a fire protective enclosure. UL2221 – Standard for Fire Resistive Grease Duct Enclosure Assemblies A standard for evaluating a heavily insulated version of a UL1978 Listed Grease Duct as a combination grease duct with integral fire rated enclosure. Per UL2221:

- **2-hour fire resistance rating of duct & through penetration assembly**
- **0" clearance to combustibles**

### DESIGN TIP

Reduce Risk by requiring water testing for leaks of site-built duct work. Water testing stimulates the real world application and ensures installation compromises and quality issues don't put you at risk or add costs. Another option: all ductwork must be tested in factory or controlled setting.

### DESIGN TIP

Use Prefab, Factory Tested and UL Listed Duct to reduce probability and consequences of a fire event.

*"It's better to find your duct leaks by using water during inspection then learn the first time you clean it, it leaks"* **Restaurant Chain Owner**

## Benefits of Prefabricated, Factory Tested & UL Listed Duct over Site Built Duct

Specific Application requirements can favor Prefab vs. Site-built and vice versa. In general, there are a long list of benefits of Prefab over Site-Built.

### Reduce Risks

**Doesn't Leak (water, grease or fire)**  
**No Welding on Jobsite**  
**Peace of Mind**

### Reduce Costs

**Use Less Space • Lower Installed Costs**  
**Lower Lifecycle expense**  
**Shorter Project Schedule • Shorter Time on Jobsite**  
**Warranty • Survive a fire**

### Aesthetics

**Modern Stainless "look"**  
**No exposed insulation**

## Maintenance and Inspection of Grease Duct

One of the most vital components of a Kitchen Ventilation's safe operations over its lifecycle is proper maintenance/cleaning. To ensure proper cleaning NFPA 96 requires inspections based on the **Cooking Frequency** or the **Type of Fuel**.

All solid fuel and wood fuel systems require monthly inspection. Inspections most often lead to required cleaning.

**Grease buildup within the ductwork is required to be < .125". For more cleaning information go to NFPA 96 Code 11.6.2**

### NFPA96 – 11.4 EXHAUST SYSTEM INSPECTION (Cleaning) SCHEDULE

Type or Volume of Cooking	Inspection Frequency
Systems serving solid fuel & wood cooking operations	Monthly
Systems serving high-volume cooking operations, such as 24-hour cooking, charbroiling, or wok cooking	Quarterly
Systems serving low-volume cooking operations	Semiannually
Systems serving low-volume cooking operations, such as churches, day camps, seasonal businesses, or senior centers	Annually

Jet spray technologies are the best cleaning solution.



To ensure inspection (and cleaning) access doors must be installed depending on the code:

	Horizontal Spacings	Vertical Spacing:
NFPA 96	12'	One per floor where personal entry not possible.
IMC	20'	No declaration. However when personal access isn't available place at top and bottom of stack at minimum
California Mechanical Code follows NFPA 96		

### KITCHEN APPLICATIONS WHERE FIRE CONSEQUENCES ARE HIGH: INCREASING REQUIREMENT TO REDUCE RISKS & CONSEQUENCES OF FIRE EVENT

1) Population Proximity | Nursing Homes/Assisted Living | Hospitals | Hotels | Education | Childcare

2) Fuel Type: Wood or solid fuel | Pizza Ovens

3) Business Disruption Risks – (included or adjacent Kitchen/Restaurant):

Supermarket & Convenience Stores

Restaurants

Manufacturing, Mission Critical or Business Campus Food Court

4) Financial & Other Risks – (included or adjacent Kitchen/Restaurant):

Adjacent Retail to Kitchen/Restaurant

Residential and Commercial Occupancy above Kitchen/Restaurant

Stadium/Convention Center/Arena/Event Centers/Casinos

Cultural /Historic / Museum / Music Clubs

### DESIGN TIP

Ensure site-built access doors are actually installed. Specifically call out the requirement for drawings and inspections of access doors so no jobsite shortcuts take place that compromise the safety of a Grease Duct system over its lifecycle.