

**PART 1- GENERAL**

**1.1 SUMMARY**

Listed, double and single wall, prefabricated, modular, grease duct for use with commercial cooking equipment for removal of grease and smoke laden vapors from kitchen hoods in a fire resistant or not application (as described in NFPA 96), at a maximum temperature of 500°F under continuous operation.

**1.2 REFERENCE STANDARDS**

A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.

B. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within the following references.

C. Underwriters Laboratories, Inc. (UL):

a. Comply with applicable UL safety standards; provide products which have been UL listed and labeled appropriate to the application, manufacturer’s instructions and local requirements:

1) UL1978 – “Standard for Grease Ducts”

2) UL 1978 and UL 2221 – “Standard for Grease Duct and Fire Resistive Grease Duct Enclosure Assemblies”

 D. National Fire Protection Association (NFPA):

a. Comply with NFPA 96 – “Standard for Ventilation Control and Fire Protection of Commercial

Cooking Operations”

E. International Code Congress (ICC)

a. Comply with “International Mechanical Code” and “International Building Code” (if applicable to the project / site)

F. International Association of Plumbing and Mechanical Officials (IAPMO)

a. Comply with “Uniform Mechanical Code” (if applicable to the project / site)

**1.3 QUALITY ASSURANCE**

A. Source Limitations: Obtain listed system components through one source from a single manufacturer.

B. Must install duct in accordance with terms of NFPA 96, local code and manufacturer’s installation instructions.

**1.4 WARRANTY**

1. Listed grease duct shall have a limited lifetime warranty to begin at the date of installation.

**PART 2- PRODUCTS**

**2.1 GENERAL**

A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of Authorities Having Jurisdiction.

**2.2 AVAILABLE MANUFACTURERS**

1. Listed and Classified Single-Wall and Double-Wall insulated grease duct shall be manufactured by Security Chimneys or approved equal.

**2.3 LISTED GREASE DUCT**

1. The grease duct shall be insulated, double-wall or single-wall factory-built type for use with Type 1 kitchen hoods, as described in NFPA 96 for the transportation of air and grease-laden vapors from commercial cooking operations.
2. Clearance to Combustible – Product shall meet Clearance to Combustible requirements as per UL Listing – (Table 1).

 C. Product Description:

A. Single or Double Wall product appropriate to Clearance to Combustible and local requirements.



B. All section joints shall incorporate a self-centering feature to ensure proper alignment of mating flanges and proper spacing between the inner wall (flue) and the outer wall (casing). Alignment & Support Sleeve reduces installation costs and time, reduces potential of leaks. Sleeve also fosters durability and minimizes degradation over lifetime of cleaning.

C. The inner wall (flue) shall be laser or plasma welded.

D. System shall be rated for continuous operation at 500° F and intermittent operation at 2000° F.

E. All components of the grease duct system shall be provided by the manufacturer to ensure the system meets the requirements of the listing including duct supports, guides, fittings, cleanouts, and expansion joints required to install the duct.

F. System shall be designed to provide access for inspection and cleaning of each change of duct direction, permit drainage of grease residue through a duct section and enable the system to allow various types of fire suppression equipment to be installed into the grease ductwork. All code required doors and tee caps are to be accessible without the use of any tools or instruments.

G. Grease duct shall be certified to applicable listings:

1) UL 1978 – “Standard for Grease Ducts”

2) UL 1978 and UL 2221 – “Standard for Grease Duct and Fire Resistive Grease Duct Enclosure Assemblies”

H. Duct Construction:

i. Double wall duct sections shall be constructed of an inner wall and an outer wall with 1” air insulation, 1”, 2”, 3”, or 4” AES fiber blanket insulation between the walls.

a. The inner wall shall be constructed of Types 304 or 316 stainless steel.

 1. 5 through 36-inch diameter materials: 0.035-inch-thick inner wall.

 b. The outer wall shall be constructed of Types 304, stainless steel or Galvalume.

 1. 5 thru 36 diameter inch materials: 0.025-inch-thick outer wall.

 ii. Single wall duct sections

a. The inner wall shall be constructed of Types 304 or 316 stainless steel.

 1. 5 through 36-inch diameter materials: 0.035-inch-thick wall.

I. No leak factory tested welds

J. Materials should match functional requirement. Galvalume Outerwall should be used when stainless steel aesthetic requirements are not present or corrosive or salt external environments are not present. Galvalume is recommended. Galvalume can be painted for projects with architectural considerations for use of color.

K. Warranty – Limited Lifetime Warranty

L. Reduce Inspections – limit inspections by using UL Listed and reduced inspection code approved Manufactured Security Chimney Grease Duct. Installing contractor is responsible for all costs associated with additional testing requirements for substituted product including rectangular field welded duct. Factory built grease duct requires a single test following installation while field welded products require multiple inspections at different points of the installation process.

**PART 3- EXECUTION**

**3.1 INSTALLATION OF FACTORY BUILT GREASE DUCT**

A. Locate to comply with minimum clearances from combustibles and minimum termination heights according to product listing or NFPA 96, whichever is most stringent.

B. The installation shall be in accordance with the manufacturer’s installation instructions and shall conform to all applicable state and local codes.

C. Inner pipe joints shall be held together by means of formed ‘V’ bands and sealed with S650 Sealant.

D. Connection to the hood shall be made with a round hood collar or a square-to-round transition.

E. Curb mounted fans shall incorporate a fan adaptor plate.

F. All construction and supporting of the kitchen ventilation system will be in accordance with Security Chimney installation instructions.

G. Store grease duct sections inside or covered adequately to protect from weather or accidental damage.

H. The entire grease duct system from the appliance to the termination, including all accessories, except as noted, shall be from one manufacturer.

1. Grease Duct Test – Inspection - Prior to use or concealment of any portion of the grease duct system, a leakage test shall be performed. Ducts shall be considered to be concealed where installed in shafts or covered coating or wraps that prevent the ductwork from being inspected on all sides. The permit holder shall be responsible to provide the necessary equipment and perform the grease duct leakage test. The grease duct shall be tested by either of two methods.
	1. Water Testing – as described in ASHRAE 154, 2016 edition Section 5.2 1.2 be the method of execution for performing these tests.
	2. Pressure Test – tested by drawing a vacuum on or pressuring the installed, in place, grease duct to a minimum of 4 inches water column (995 pa. 0.144 psi). The test shall be witnessed by an authorized inspector. The grease duct will pass inspection if the pressure or vacuum applied holds for 15 minutes with zero leakage. The measurement range of the test gauge or manometer used shall be from 0 to no more than 10 inches WC.

J. All design and installation documents must contain proper placement and configuration of Access doors that meet code, manufacturers recommendations and local requirements. Ensure Access Doors are installed and to code. Site-built Access doors must be inspected at each stage of installation process to ensure they are installed, to code and at the end of the process not covered in insulation.

For more information and resources please visit

[**www.securitygreaseduct.com**](http://securitygreaseduct.com/)