

SECTION 23 31 00

ROUND, FACTORY BUILT, ZERO-CLEARANCE, FIRE-RESISTANT GREASE DUCT

PART 1 – GENERAL

1.1 SUMMARY

Factory built, double wall round grease duct, UL listed for fire-resistance and zero-clearance to combustibles suitable for the removal of smoke and grease laden vapors from commercial, industrial, institutional, and similar cooking applications where continuous operating temperatures are 500° F (260° C) or less and for intermittent temperatures not exceeding 2000° F (1093° C) as per NFPA 96.

1.2 REFERENCE STANDARDS

- A. The latest published edition of a standard shall be applicable to this project unless identified by a specific edition date.
- B. All materials and installation shall comply with the applicable requirements and standards.
 1. Underwriters Laboratories, Inc. (UL):
 - a. Provide products which have been listed and labeled to the following UL standards:
 1. UL 1978 / ULC S662 – *Standard for Grease Ducts*
 2. UL 2221 / ULC S144 – *Standard for Safety for Tests of Fire Resistive Grease Duct Enclosure Assemblies*
 2. ASTM International:
 - a. Provide products which have been listed and labeled to the following ASTM standards:
 1. ASTM E814 - *Standard Test Method for Fire Tests of Penetration Firestop Systems*
 3. National Fire Protection Association (NFPA):
 - a. Comply with NFPA 96 – *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*
 4. International Code Congress (ICC)
 - a. When applicable to the project site, comply with:
 1. *International Mechanical Code*
 2. *International Building Code*
 5. International Association of Plumbing and Mechanical Officials (IAPMO):
 - a. When applicable to the project site, comply with:
 1. *Uniform Mechanical Code*

1.3 QUALITY ASSURANCE

- A. Obtain listed system components from a single manufacturer.
- B. Comply with NFPA 96, unless otherwise indicated, or comply with local authority having jurisdiction.
- C. Grease duct system shall be installed in accordance with the manufacturer's listings and written instructions.

1.4 WARRANTY

- A. Listed grease duct shall have a 1 year limited warranty starting at the date of installation.

PART 2 – PRODUCTS

2.1 AVAILABLE MANUFACTURERS

- A. Listed Double Wall insulated round grease duct shall be Model GZ, as manufactured by the Van-Packer Co.

2.2 LISTED GREASE DUCT

- A. The round grease duct shall be insulated, double-wall factory built type for use with Type I kitchen hoods, as described in NFPA 96, for the transportation of grease laden vapors from commercial cooking operations.
- B. Product Description:
 1. Zero Clearance, 2-hr Fire-Resistance rated model GZ Round Grease Duct by Van-Packer Co.
 2. Factory pre-fabricated, double-wall type, listed and labeled to UL 1978 and UL 2221 for the venting of grease laden vapors from Type 1 kitchen hoods requiring grease duct as described in NFPA 96.
 3. Grease Duct shall be rated for continuous operation at 500°F and for intermittent operation up to 2000°F.
 4. All components of the grease duct system, including duct supports, guides, fittings, cleanouts, expansion joints and through penetration fire-stops, shall be provided by a single manufacturer to ensure the system meets the requirements of the listing.
 5. The grease duct system, along with its supports and through penetration firestops, shall an “F” rating of at least 2 Hours and a “T” rating of at least 2 Hours as proven by test to ASTM Standard E814.
 6. Access doors shall be provided, spaced and located in accordance with the requirements of NFPA 96.
 7. The round grease duct sections shall be constructed of a liner and shell with ceramic fiber insulation in the annular space.
 - a. The liner shall be constructed of Type **(430, 304 or 316)** stainless steel.
 - i. Liner (inner wall) thickness for all sizes is 0.035"
 - b. The shell shall be constructed of **(Aluminized Steel, or Type 304, 316 or 430 Stainless steel)**.
 - i. Shell (outer wall) thickness from 12” to 26” diameters is 0.025”
 - ii. Shell (outer wall) thickness from 28” to 42” diameters is 0.035”
 - c. The duct shall include a 3” thickness of ceramic fiber insulation between the liner and shell.
 8. The grease duct assembly shall be tested and listed to 0 inch clearance to combustibles.
 9. Duct shall be installed at a slope not less than 1/16 unit vertical in 12 units horizontal toward the hood or toward grease reservoir. Where horizontal ducts exceed 75 feet in length, the slope shall not be less than 3/16 unit vertical in 12 units horizontal.

PART 3 – EXECUTION

3.1 INSTALLATION OF FACTORY BUILT GREASE DUCT

- A. Duct liner joints shall be held together by means of formed vee bands and sealed with P/N 101087A sealant. Liner joints shall be wrapped with insulation strips provided by duct manufacturer and shell to shell gap covered with formed draw band provided by duct manufacturer.
- B. Connection to hood will be made with a hood collar provided to hood manufacturer to assure proper fit with duct.
- C. Connection to curb mounted fans shall be by means of a fan adapter plate provided by the duct manufacturer.
- D. Support duct in accordance with Van-Packer's installation instructions.
- E. All supports and guides shall be designed for installation with no required welding.
- F. Store grease duct components inside, or covered adequately to protect from weather or accidental damage.