

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 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 **(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.