SECTION 23 31 13

VENTILATION DUCTS

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\*\* NOTE TO SPECIFIER \*\* Selkirk Corp.; chimney, venting and air distribution products.
This section is based on the products of Selkirk Corp., which is located at:
5030 Corporate Exchange Blvd. S.E.
Grand Rapids, MI 49512
Toll Free Tel: (800) 848-2149
Email: selkirkquoting@selkirkcorp.com
Web: http://www.selkirkcommercial.com
[Click Here] for additional information,
Selkirk Corporation is a leading manufacturer of chimney, venting and air distribution products for the commercial and residential HVAC and hearth industries. Selkirk manufactures products in the United States, Canada and Mexico.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete types below not required.

* + 1. Classified, fire-rated general ventilation duct with or without internal subducts.
		2. Classified, fire-rated kitchen ventilation grease ducts.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 22 05 00 - Common Work Results for Plumbing.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards institute (ANSI)
			1. ANSI/UL 1479 - Standard for Fire Tests of Through-Penetration Firestops.
		2. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).
		3. National Fire Protection Association (NFPA):
			1. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.
			2. NFPA 211 - Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances.
		4. International Standards Organization (ISO)-6944 - Fire Resistance Tests -- Ventilation Ducts.
		5. Underwriter's laboratory (UL):
			1. UL 1978 / ULC S662 - Grease Ducts.
			2. UL 2221 / ULC S144 - Fire Resistive Grease Duct Enclosure Assemblies.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Installation methods, drawings and instructions.
			3. Sample of extended warranty.
		3. Shop Drawings: The manufacturer shall provide "to scale" drawings depicting the actual layout. The exhaust system shall be installed as designed by the manufacturer and in accordance with the terms of the manufacturer's warranty and in conjunction with sound engineering practices.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
		2. Manufacturer Representation: The factory built modular exhaust system shall be furnished by a vendor organization that assures design, installation and services coordination. As well as, providing "in-warranty" and "post-warranty" unified responsibility for owner, architect, consulting engineer and contractor.
		3. Installer Suggested Qualifications: Minimum 1 year experience installing similar products.
		4. Product Requirements: The exhaust system shall be installed as designed by the manufacturer and in accordance with the terms of the manufacturer's warranty and in conjunction with sound engineering practices.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	1. PRE-INSTALLATION MEETINGS
		1. Convene minimum two weeks prior to starting work of this section.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
		2. Handling: Handle materials to avoid damage.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. SEQUENCING
		1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	5. WARRANTY
		1. The exhaust system shall have a limited lifetime warranty against functional failure due to defects in material and manufacturer's workmanship from the date of installation.
		2. Listed Ventilation Duct shall be warranted by the duct system manufacturer against defects in material and workmanship for a limited lifetime from the original date of installation. Any portion of the ventilation duct repaired or replaced under warranty shall be warranted for the remainder of the original warranty terms and conditions.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Selkirk Corp., which is located at: 5030 Corporate Exchange Blvd. S.E.; Grand Rapids, MI 49512; Toll Free Tel: 800-848-2149; Tel: 616-656-8200; Email: [request info (info@selkirkcorp.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Selkirk+Corp.&coid=41048&rep=&fax=&message=RE:%20Spec%20Question%20(15810sel):%20%20&mf=); Web: <http://www.selkirkcommercial.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
			1. Submittals shall specify manufacturer's model number, and other pertinent identification, and attest that the alternate material is in compliance with all specification requirements as approved equivalent by the Project engineer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. CLASSIFIED VENTILATION DUCTS
		1. Ventilation Ducts: Modular, factory-built duct system.
			1. Fire-Rated Model: Selkirk Model IPS-Z3 double-wall 2-hour fire rated duct up to 36 inch (914 mm), with or without internal subducts and feeder branches.
			2. Non-Fire-Rated Model: Selkirk Model G single-wall non-fire-rated duct up to 52 inch (1321 mm) with or without internal subducts and feeder branches.
		2. Performance Standards:
			1. All products furnished under this section shall be certified under Underwriters Laboratories, Inc. (UL) category for Fire Resistive Duct Assemblies - Ventilation Ducts and thereby conform to the requirements of ISO-6944 and having fire stops tested in accordance to ANSI/UL 1479. Products shall carry the appropriate UL and classification marks or labels.
			2. Fire resistance ratings for Ventilation Duct shall be applicable to ducts and qualify for a minimum 2 hour fire resistance rating for criteria of duct "Integrity", "Stability" and "Insulation".
			3. Alternatively, if hourly fire rating of duct is not needed, then ducts shall be of single wall pressure stack design.
		3. Construction (2 Hour Classified Fire-rated):
			1. Ventilation duct sections shall be constructed of an inner and an outer wall with a 3 inch (152 mm) annular insulating space.

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Inner Material: The inner wall shall be constructed of .035 inch (0.90 mm) thick type aluminized steel for diameters 5 inches (127 mm) through 36 inches (914 mm).
			2. Inner Material: The inner wall shall be constructed of .035 inch (0.90 mm) thick type stainless steel for diameters 5 inches (127 mm) through 36 inches (914 mm).

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - 1. Outer Material: The outer wall shall be constructed of .025 inch (0.64 mm0 thick aluminized steel for sizes 5 inches (127 mm) through 24 inches (610 mm) and .035 inch (0.90 mm) thick for sizes 26 inches (660 mm) through 36 inches (914 mm).
			2. Outer Material: The outer wall shall be constructed of .024 inch (0.61 mm) thick 304 stainless steel for all sizes.
			3. Inner and outer walls shall be connected by means of spacer clips, which maintain the concentricity of the annular space.
			4. The high-density, high-temperature, body-soluble fiber insulation between the inner liner and outer jacket shall be a nominal 3 inches (76mm) thick.

\*\* NOTE TO SPECIFIER \*\* Delete weather exposure requirement not required.

* + - 1. Weather Exposure: Aluminized steel outer wall ventilation duct parts exposed to weather shall be protected by one coat of corrosion and heat resistant primer and one coat of heat resistant paint. Paint shall be furnished and applied by installer.
				1. Where exposed to weather, the outer channel band shall be sealed with P-600 silicone sealant to prevent rainwater from entering the space between the inner and outer walls.
			2. Weather Exposure: All ventilation duct parts exposed to the weather shall be 304 stainless steel outer wall.
				1. Where exposed to weather, the outer channel band shall be sealed with P-600 silicone sealant to prevent rainwater from entering the space between the inner and outer walls.
			3. Supports, fan adapters, square to round transitions, hood transitions, drain fittings and adjustable / variable lengths required to install ventilation duct shall be included.
			4. Roof penetration pieces shall be either UL listed products of the ventilation duct manufacturer or roof curbs complying with local code.
			5. Inner pipe joints shall be held together by means of formed, overlapping V-bands to secure the mating pipe flanges together.
			6. V-bands shall have duct manufacturer's P-600 silicone sealant applied to the V-band groove.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. KITCHEN HOOD EXHAUST GREASE DUCT
		1. Type 1 Kitchen Hood Exhaust Grease Duct: Modular, factory-built duct system.
			1. Zero-Clearance Model: Selkirk Model IPS-Z3 Zero Clear grease duct. www.selkirkcommercial.com.
		2. Performance Standards:
			1. Provide factory built grease duct that is tested and listed by the Underwriters' Laboratories, Inc. (UL 1978 / ULC S662) for use with commercial cooking equipment, as described in NFPA-96.
			2. The U.L. listed insulated grease duct shall be certified for zero clearance to combustible material per UL 2221 / ULC S144 with a 2 hour fire. Hourly ratings are met with use of factory TPF fire stop at necessary floor/wall penetrations.
		3. Construction:
			1. The double wall exhaust system shall have a 304 stainless steel inner liner (20 gauge minimum) and an aluminized steel outer jacket (24 gauge minimum). The materials and construction of the modular sections and accessories shall be as specified by the terms of the product's U.L. listing.
				1. The high-density, high-temperature, body-soluble fiber insulation between the inner liner and outer jacket shall be a nominal 3 inches (76mm) thick.
			2. Aluminized steel surfaces exposed to the elements shall be protected by a minimum of one base coat of primer and one finish coat of corrosion resistant paint suitable for outer jacket skin temperatures of the given application. All primer and paint to be supplied by the installing contractor. Alternatively, an outer jacket constructed of 304 or 316 stainless steel may also be considered in lieu of painting.
			3. This exhaust system shall be designed and installed to be liquid tight and thus prevent leakage of grease and/or grease laden vapors into a building.
			4. Inner pipe joints shall be securely connected and sealed with factory supplied over-lapping V-bands and P600 sealant as specified in the manufacturer's installation instructions.
			5. Each 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, enable the system to allow for the thermal expansion and allow various types of fire suppression equipment to be integrated into the grease ductwork, as necessary per local code.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. KITCHED HOOD EXHAUST INSTALLATION
		1. The exhaust system shall be installed according to the manufacturer's installation instructions and shall conform to all applicable state and local codes. A minimum of 1/16 inch per ft (5 mm per m) slope is permitted by the manufacturer's UL listing. Reference installation instructions.
		2. Inner pipe joints shall be sealed by use of factory supplied overlapping V bands and sealant.
		3. Roof penetrations shall be suitable for a noncombustible roof and shall be according to the manufacturer's detail drawings and installation instructions.
		4. When installed according to the manufacturer's installation instructions, the exhaust piping and its supporting system shall resist side loads at least 1.5 times greater than the weight per foot of the piping for both horizontal and vertical portions of the system.
		5. Provide all supports, guides, expansion joints, guy sections, guy tensioners, roof thimbles, roof flashings, storm collars and terminations as required to provide a complete system.
		6. The entire exhaust system from hood to the termination point, including all accessories, except as noted, shall be from one manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. CLASSIFIED VENTILATION DUCT INSTALLATION
		1. Store delivered materials inside, out of the weather. Protect materials from accidental damage or vandalism.
		2. Installation shall conform to the manufacturer's installation instructions, UL classification and state or local codes.
		3. Support ventilation duct from building structure using rigid structural shapes for attachment of fixed point supports (Plate Support Assembly). Anchor supports to structure by welding, bolting, steel expansion anchors, or concrete inserts. Size of structural shapes shall be in accordance with manufacturer's recommendations.
		4. Coordinate installation of dampers or fans. Dampers or fans shall be supported independently from the ventilation duct sections. Protect ventilation duct from twist or movement due to fan torque or vibration.
		5. Protect incomplete ventilation duct installations by attaching temporary closures over open ends of sections.
		6. Clean ventilation duct sections of dust and debris prior to final connection to fans.
	2. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION