SECTION 233533 - LISTED KITCHEN VENTILATION SYSTEM EXHAUST DUCTS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
	* + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			1. SUMMARY
				1. Section Includes:

Listed grease ducts.

Access doors.

* + - 1. SUBMITTALS
				1. Submittals for this section are subject to the er-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for listed grease ducts.

* + - * 1. Shop Drawings: For listed grease ducts.

Include plans, elevations, sections, and attachment details.

Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

Detail fabrication and assembly of hangers and seismic restraints.

Retain "Welding certificates" paragraph below if retaining "Welding Qualifications" paragraph in "Quality Assurance" Article.

* + - * 1. Welding certificates.
			1. QUALITY ASSURANCE

Retain "Welding Qualifications" Paragraph below if shop or field welding is required. If retaining, also retain "Welding certificates" Paragraph in "Informational Submittals" Article.

* + - * 1. Welding Qualifications: Qualify procedures and personnel according to the following:

AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.

AWS D9.1/D9.1M, "Sheet Metal Welding Code," for shop and field welding of joints and seams in listed grease ducts and field-fabricated grease ducts.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and Masterworks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications. For definitions of terms and requirements for Contractor's product selection, see Section 016000 "Product Requirements."

* + - 1. LISTED GREASE DUCTS

* + - * 1. [Manufacturers:](http://www.specagent.com/Lookup?ulid=11858) Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:

[AMPCO Stacks](http://www.specagent.com/Lookup?uid=123457109980).

[McGill AirFlow LLC](http://www.specagent.com/Lookup?uid=123456993004).

[Van-Packer Company, Inc](http://www.specagent.com/Lookup?uid=123456993011).

Approved equivalent.

* + - * 1. Description: Factory-fabricated, -listed, and -labeled, double-wall ducts tested according to UL 1978 and rated for 500 deg F continuously, or 2000 deg F for 30 minutes; with positive or negative duct pressure and complying with NFPA 211.
				2. Construction: Inner shell and outer jacket separated by at least a [**1-inch**] [**2-inch**] [**3-inch**] [**4-inch**] annular space filled with high-temperature, ceramic-fiber insulation.

Inner Shell: ASTM A666, [**Type 304**] [**Type 316**] stainless steel.

Outer Jacket: [**Aluminized steel**] [**Stainless steel**] where concealed. Stainless steel where exposed.

* + - * 1. Gaskets and Flanges: Ensure that gaskets and sealing materials are rated at 1500 deg F minimum.
				2. Hood Connectors: Constructed from same material as grease duct with internal or external continuously welded or brazed joints.
				3. Accessories: Tees, elbows, increasers, terminations, adjustable roof flashings, storm collars, support assemblies, thimbles, firestop spacers, and fasteners; fabricated from similar materials and designs as vent-pipe straight sections; all listed for same assembly. Include unique components required to comply with NFPA 96 including cleanouts, transitions, adapters, and drain fittings.
				4. Grease Duct Supports: Construct duct bracing and supports from non-combustible material.

Ensure that bolts, screws, rivets and other mechanical fasteners do not penetrate duct walls.

* + - * 1. Comply with ASTM E2336.

Retain option in "Factory Tests" Paragraph below to require fire-resistance testing to be witnessed by Owner at the fabrication facility.

* + - * 1. Factory Tests: Test and inspect fire resistance of grease duct system according to ASTM E2336 [**in presence of Director’s Representative**].

Retain subparagraph below if consultant is to witness fire-resistance testing at the fabrication facility.

Allow consultant [**two**] <**Insert period**> days' minimum notification before test is performed.

* + - 1. ACCESS DOORS

* + - * 1. [Manufacturers:](http://www.specagent.com/Lookup?ulid=11859) Subject to compliance with requirements, provide products by one of the following:

[3M](http://www.specagent.com/Lookup?uid=123456993031).

[Ductmate Industries, Inc; a DMI company](http://www.specagent.com/Lookup?uid=123456993030).

Approved equivalent.

* + - * 1. Description: Factory-fabricated, -listed, and -labeled, double-wall [**personnel**] [**and**] [**maintenance**] access doors tested according to UL 1978 and rated for 500 deg F continuously, or 2000 deg F for 30 minutes; with positive or negative duct pressure and complying with NFPA 211.

Construction: [**0.0625 inch**] ASTM A666, [**Type 304**] [**Type 316**] stainless-steel inner shell and [**aluminized-steel**] [**stainless-steel**] outer cover with two handles.

Fasteners: Stainless-steel bolts and wing nuts.

Ensure that bolts do not penetrate interior of duct space.

Maintenance Access Door Dimensions: [**7 x 7 inches**] <**Insert dimensions**>.

Personnel Access Door Dimensions: [**22 x 20 inches**] [**24 x 24 inches**] <**Insert dimensions**>.

Door Label: Mark door with uppercase lettering as follows: "ACCESS PANEL. DO NOT OBSTRUCT."

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
				2. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. INSTALLATION
				1. Coordinate installation of roof curbs, equipment supports, and roof penetrations. Comply with requirements in Section 077200 "Roof Accessories."
				2. Coordinate connections to kitchen exhaust hoods with requirements in Section 233813 "Commercial-Kitchen Hoods."
				3. Coordinate connections to exhaust fans with requirements in Section [**233413 "Axial HVAC Fans."**] [**233416 "Centrifugal HVAC Fans."**]
				4. Coordinate firestopping where grease ducts penetrate fire separations with requirements in Section 078413 "Penetration Firestopping."
				5. Comply with minimum clearances from combustibles and minimum termination heights according to product listing or NFPA 211 and UL 2221, whichever is most stringent.
				6. Install airtight [**personnel**] [**and**] [**maintenance**] access doors where indicated.

Retain first paragraph below if specifying positive-pressure vents.

* + - * 1. Seal between sections of grease exhaust ducts according to manufacturer's written installation instructions, using sealants recommended by manufacturer.
				2. Connections: Make grease duct connections according to the International Mechanical Code.

Grease duct to exhaust fan connections: Connect grease ducts to inlet side of fan using flanges, gaskets, and bolts.

Grease duct to hood connections:

Retain one of two subparagraphs below to best suit Project conditions.

Make grease duct to hood joints connections using internal or external continuously welded or brazed joints.

Make watertight grease duct to hood joints connections using flanges, gaskets, and bolts.

* + - * 1. Support ducts at intervals recommended by manufacturer to support weight of ducts and accessories, without applying loading on kitchen hoods.

Securely attach supports and bracing to structure.

Retain "Grease Duct Enclosures" Paragraph below if grease duct is concealed.

* + - * 1. Grease Duct Enclosures: Comply with requirements of the International Building Code and ASTM E2336.
				2. Coordinate fire-rated enclosure construction with Section 092116.23 "Gypsum Board Shaft Wall Assemblies."
				3. Repair damage to adjacent materials caused by listed kitchen ventilation system exhaust ducts installation.
			1. FIELD QUALITY CONTROL
				1. Perform air leakage test [**in presence of Director’s Representative**]before concealment of any portion of the grease duct system.

Retain subparagraph below if consultant is to witness fire-resistance testing at the fabrication facility.

Notify Director’s Representative a minimum of [**two**] <**Insert period**> days before test is performed.

END OF SECTION 233533