

**SECTION 14 91 33****GRAVITY SOILED LINEN CHUTES**

SPEC WRITER NOTE: Delete // and between //\_\_// and paragraph content not applicable to project and write "not used" after title.

**PART 1 GENERAL****1.1 DESCRIPTION**

- A. This section specifies the engineering, furnishing and installation of the complete gravity soiled linen chute as described herein and as indicated on the Contract drawings.
- B. Drawings and general provisions of Contract, including General, Supplemental and Special conditions and Division 01 Specification Sections, apply to this Section.

**1.2 RELATED WORK**

- A. Section 07 84 00, FIRESTOPPING.
- B. Section 07 60 00, FLASHING AND SHEET METAL.
- C. Section 21 10 00, WATER-BASED FIRE-SUPPRESSION SYSTEMS.
- D. Section 23 09 23, DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC.
- E. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Complete layout drawings of system, including detail drawings of load stations, roof vent, discharge openings, riser anchoring and electrical riser.
- C. Shop Drawings of Fabricated Equipment and Manufacturer's Literature and Data:  
Submit as one package:
  - 1. Gravity Chute
  - 2. Roof Vents
  - 3. Flushing Head/Ring
  - 4. Gravity Chute Loading Stations
  - 5. Discharge Openings with Automatic Fire Damper
  - 6. Door Locks
- D. Manufacturer's certificate stating that the loading and discharge doors and frames meet the requirements of Underwriter's Laboratory, Inc. for the fire rating specified.

#### 1.4 QUALITY ASSURANCE

##### A. Criteria:

1. Manufacturer regularly and presently manufactures the item submitted as one of their principal products.
2. There is a permanent service organization maintained or trained by the manufacturer which will render satisfactory service to this installation within eight (8) hours of receipt of notification that service is requested.
3. Installer, or supplier of a service, has technical qualifications, experience, and trained personnel and facilities to perform the specified work. A minimum of three (3) years of experience in the installation of gravity chutes.
4. Manufacturer's system has been in satisfactory operation on two (2) installations like this system for at least two (2) years. Provide names of these facilities and contact information.

##### B. Product Criteria:

1. Multiple Units: When two (2) or more units of the same type or class of materials or equipment are required, these units are products of one manufacturer.
2. Assembled Units: Manufacturers of equipment assemblies, which use components made by others, assume complete responsibility for the final assembled product.
  - a. All components of an assembled unit need not be products of the same manufacturer, but component parts which are alike are the products of a single manufacturer.
  - b. Components are compatible with each other and with the total assembly for the intended service.
3. Nameplates: Nameplate bearing manufacturer's name or identifiable trademark securely affixed in a conspicuous place on equipment or name or trademark cast integrally with equipment, stamped, or otherwise permanently marked on each item of equipment.

##### C. Design Criteria:

1. The information shown on the contract drawings is intended to establish basic requirements of the system. Within these limitations, the Contractor is responsible for the final design of the gravity chute and to make whatever modifications of, and additions to the drawings, as may be required to fulfill the performance requirements.

2. Contractor is responsible for coordination of chute drawings and installation with all other building systems.
  3. Space Conditions: Contractor must pay special attention to existing structure provided in prior phases of construction.
- D. Transport soiled linen in laundry bags.
- E. Employee Instructions: Provide a qualified representative possessing complete knowledge of system and equipment to train employees in operation and maintenance of system. Training period must be as follows:
1. Four (4) hours instructing maintenance personnel on the operation and maintenance of system.
  2. In addition to verbal instruction, furnish written instructions in triplicate relative to care, adjustment, and operating of all parts of equipment in independently bound folders. Written instructions must include complete, correct, and legible wiring diagrams, complete and comprehensive sequence of operations, complete parts lists with descriptive literature and identifications, diagrammatic cuts of equipment and parts.

#### **1.5 MAINTENANCE SERVICE**

Furnish inspection and maintenance service on all chute equipment for a period of one (1) year after notification by Department of Veterans Affairs that system is turned over for beneficial use. This service must consist of examination by competent trained and qualified mechanic; cleaning, oiling, greasing, adjustments and replacement of any parts required to place equipment in proper working order, (except for parts requiring replacement due to improper use, accidents or operator negligence). Maintenance is to be preformed monthly.

#### **1.6 WARRANTY**

- A. Submit all labor and materials furnished regarding linen chute system and installation to terms of "Warranty of Construction" articles of FAR clause 52.246-21. The One-Year Warranty and Guarantee Period of Service must commence and run concurrent after final inspection, completion of performance test, and upon acceptance of each linen chute.
- B. No device will be accepted that will not give perfect satisfaction without excessive maintenance and attention. If it becomes evident during the warranty period that the equipment is not functioning properly, or in accordance with specification requirements, or, if in the opinion of the Contracting Officer excessive maintenance and

attention must be employed to keep equipment operating, the Contractor must remove equipment and install a new device meeting all requirements as part of the work until satisfactory operation on installation is obtained. Period of warranty must start a new from date of completion of new installation performed in accordance with foregoing requirements.

### 1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification. Installation must meet the requirements of the latest editions published and adopted by the United States Department of Veterans Affairs on the date contract is signed.
- B. Federal Specifications:
- QQ-S-571E.....Solder, Electronic
- WW-T-799F.....Tube, Copper, Seamless, Water (For Use with  
Solder-Flared or Compression-Type Fittings)
- C. National Fire Protection Association (NFPA):
- 80.....Fire Doors and Fire Windows
- 82.....Incinerators, Waste and Linen Handling Systems  
and Equipment
- 90.....Installation of Air-Conditioning and  
Ventilating Systems
- D. American Society for Testing and Materials (ASTM):
- A176-99.....Stainless and Heat-Resisting Chromium Steel  
Plate, Sheet, and Strip
- A463-10.....Steel Sheet, Cold-Rolled, Aluminum-Coated, Type  
1 and Type 2
- A653/A653M-11.....Steel Sheet, Zinc-Coated (Galvanized) by the  
Hot-Dip process, Commercial Quality
- E. Underwriter's Laboratories (UL):
- 555.....Safety Fire Dampers

## PART 2 PRODUCTS

### 2.1 GRAVITY CHUTE

- A. Risers:
1. 610 mm (24 in.) diameter tubes, constructed of 14-gauge galvanized steel conforming to ASTM A653 or 610 mm (24 in.) diameter tubes, constructed of 16-gauge aluminized steel conforming to ASTM A463.
  2. Chute parts extending above the roof must conform to ASTM A176, Type 430 stainless steel.

3. Provide slip type expansion joints in chute risers between floors, upper section telescoping into section below.
  4. Support chutes by frames and fasteners at each floor to prevent sound transmission to the floor slab as recommended by manufacturer. Weld and dress smooth connection joints between vertical shafts and horizontal intakes with no projections that may catch or tear the laundry bags.
  5. Provide factory applied sound insulation with sprayed on sound deadening material.
  6. Gravity chute must meet the NFPA 82 requirements.
  7. Vent: Extend full chute diameter a minimum of 121.9 cm (4 ft) feet above roof level. Cap roof vent to prevent rain from entering chute and allow for the circulation of air within the chute riser.
- B. Provide Chute Fire Damper at Discharge Opening as indicated on drawings.

SPEC WRITER NOTE: Select option 1 or 2 and renumber.

1. The base of the gravity chute must terminate with sliding gate type discharge opening with a fire damper that carries the UL 1.5-hour 250 degrees F "B" label, covering size, design and construction of gate, frame and closing mechanism. Dampers must conform to UL 555."
  2. The base of the gravity chute must terminate with a single 45-degree radius sweep section.
    - a. The 45-degree sweep must be reinforced at the bottom by steel. Support bottom of sweep with 51 mm (2 in.) diameter chromium plated standard steel or stainless-steel adjustable pedestal, with flange for bolting to floor.
    - b. Door for the Discharge Opening must be 610 mm (24 in.) wide by 762 mm (30 in.) high, top hinged with hold open device and fusible link.
  3. Provide Chute Fire Dampers with an electric interlocking mechanism so that no intake doors can be opened in the risers when the chute fire damper has been activated.
- C. Provide Gravity Chute disinfecting and sanitizing device as indicated on drawings.

SPEC WRITER NOTE: Select option 1 or 2 and renumber.

1. Equip the top of the chute with a copper flushing ring containing 1.5 mm (.0625 in.) diameter spray holes, 63 mm (2.5 in.) on centers with extra holes which must completely drain ring when water is shut off. In lieu of flushing rings, chute may be equipped with spray heads designed to flush inside of chute.
2. Equip chute at with flushing spray heads designed to wash the inside of chute. Equip chutes with 25 mm (1 in.) inside pipe size chrome plated brass flushing spray head, at 121.9 cm(4 ft) above the highest intake door, and with a 12.5 mm (.5 in.) inside pipe size, chrome plate brass sprinkler head located at discharge door at every second intake door.
3. Contractor must provide all necessary fittings to water supply piping to connect the disinfecting and sanitizing device to the plumbing system.
4. Equip bottom of chute with hinged access for cleaning and water removal.

## **2.2 GRAVITY CHUTE LOADING STATIONS**

- A. Fabricate loading station of 16-gauge stainless steel. Station must consist of the intake door mounted in a single face plate. The intake door must have pivot type hinges and be located as indicated on drawings.
- B. Intake doors must carry the UL 1.5-hour 250 degrees F "B" label, covering size, design and construction of the door, frame, latching, and closing mechanism. Fabricate door of stainless steel and provide self-closing and self-latching devices. Door size must be a minimum of 533 mm (21 in.) wide by 533 mm (21 in.) high, side hinged with cylinder lock. Install door frame flush with finished wall.
  1. Each intake door must have an indicator showing when the door is locked.
  2. Clearly letter on the intake door in letters approximately one-inch high, the word "LINEN". Raise or incise letters in door face in permanent manner. Raised lettering must be metal or plastic with metal attachment.
  3. Provide cylinder locks, keyed the same, for all load stations. Furnish 15 keys for each chute. Stamp the letters "LINEN CHUTE KEY" on each key tag to identify location of use.
- C. Provide intake doors with electric interlocking mechanism to permit only one door in a riser to be opened at a time.

- D. The shroud inside the intake door must be no less than 45°-angle but must be 60° when possible.
- E. Access Door to be 381 mm (15 in.) by 381 mm (15 inches), with an UL 1.5-hour 250 degrees F "B" label, located where indicated on drawings. Locate access door to service the flushing ring.
  - 1. Provide hand-operated latch release device.
  - 2. Provide anchors for door frame of type to suit material of wall in which they are installed.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Gravity Chute Loading Stations:
  - 1. Set station flush with adjacent surface.
  - 2. Attach face plate to supports with stainless steel screws.
- B. Hangers:
  - 1. Provide supports at each floor line and at the roof line.
- C. Automatic Fire Dampers: Must conform to UL 555 and NFPA 82.
- D. Protection: Protect all finish parts of equipment, such as shafts and bearing where accessible, from rust prior to operation by means of protective grease coating and wrapping. Close pipe openings with caps or plugs during installation. Cover and protect equipment against dirt, water, and chemical or mechanical injury. Clean all exposed surfaces and components at completion of all work.

**3.2 TESTS:**

- A. Demonstrate entire system will, with fully loaded linen bags, operate as specified. Demonstrate operation of fire damper at discharge opening.
- B. Resident Engineer or VA authorized representative must witness the system testing and final inspection.
- C. The VA must obtain the services of an Independent Certified Inspector.

**3.3 GUARANTEE PERIOD OF SERVICE: MAINTENANCE SERVICE AND INSPECTIONS**

- A. Furnish complete maintenance service and inspections on each linen chute installation for a period of one (1) year after completion and acceptance of each linen chute in this specification by the Resident Engineer. This maintenance service must run concurrently with the warranty.

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