

SECTION 11177

WASTE RECYCLING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Trash Chute.
- B. Recycling System.

1.2 RELATED SECTIONS

- A. Sections of Division 15 that affect, or are affected by, construction activities of this section.
- B. Sections of Division 16 that affect, or are affected by, construction activities of this section.

1.3 REFERENCES

- A. ASTM A 366/A 366M - Standard Specification for Steel Sheet, Carbon, Cold-Rolled, Commercial Quality.
- B. ASTM A 446/A446M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- C. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- D. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- E. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy- Coated by the Hot-Dip Process, General Requirements.
- F. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- G. NFPA 82 - Incinerators and Waste and Linen Handling Systems and Equipment.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements: Comply with NFPA 82.
 - 1. System: Pre-engineered in factory for specific project, shipped in sections for site assembly.
 - 2. Trash separator unit: Self-contained, completely assembled in factory for site installation.

- B. Performance Requirements:
 - 1. System: Intake chute accepts discarded mixed trash, metal items, and paper; trash separator unit separates mixed trash, discarded metal, and discarded paper into separate containers for disposal or recycling.
 - 2. Intake door assemblies and electro-mechanical interlock: Fire-rated; B label, 1-1/2 hour, for 250 degrees F (121 degrees C) temperature rise for 30-minute interval.
 - 3. Discharge door assembly: Fire-rated; B label, 1-1/2 hour.
 - 4. Flushing head and sprinkler head: UL Listed.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's descriptive literature for system, including each component.

- C. Shop Drawings: Dimensioned drawings which indicate the following:
 - 1. System layout, including locations of system components and supporting structures.
 - 2. Details of interface with adjacent construction, including required clearances.

- D. Quality Assurance Submittals:
 - 1. Test reports: Certified reports from independent testing laboratory documenting compliance of the following system components to requirements specified in SYSTEM DESCRIPTION Article of PART 1 of this section:
 - a. Intake door assemblies and electro-mechanical interlock system.
 - b. Roof vent assembly.
 - c. Flushing head.
 - d. Sprinkler head.
 - 2. Certificates:
 - a. Contractor's certification that:

- 1) Manufacturer meets specified qualifications; append list of completed projects.
- 2) Installer meets specified qualifications; append manufacturer's certification of installer approval.
- b. Manufacturer's certification that installer is approved.
3. Manufacturer's instructions: Printed installation instructions for system components, including storage requirements.

E. Closeout Submittals:

1. Operation and maintenance data: System operating and maintenance instructions, supplied by manufacturer.
2. Warranty documents specified in WARRANTY Article of PART 1 of this section.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Minimum five (5) years documented experience producing systems similar to that specified in this section, and supplying list of five (5) completed installations.
2. Installer: Minimum three (3) years documented experience installing systems similar to that specified in this section, and approved by manufacturer.

B. Regulatory Requirements: Conform to requirements of local authorities having jurisdiction over project.

C. Pre-Installation Meeting:

1. Convene at job site seven (7) calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
2. Require attendance by representatives of the following:
 - a. Installer of this section.
 - b. Other entities directly affecting, or affected by, construction activities of this section.
3. Notify Architect four (4) calendar days in advance of scheduled meeting date.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store system components in manufacturer's unopened packaging until installation.
- B. Maintain storage area conditions for system components in accordance with manufacturer's instructions until installation.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's 1-year warranty against defects not caused by normal use of, or misuse of, system.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Valiant Products, Inc.; P.O. Box 405, Lakeland, FL 33802. ASD. Tel: (800) 659-1797 or (941) 688-7998, Fax: (941) 683-9749.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

2.2 MATERIALS

- A. Carbon Steel Sheet and Bar: Conforming to ASTM A 366, Cold-Rolled, Commercial Quality.
- B. Galvanized Steel Sheet: Conforming to ASTM A 446/A446M or ASTM A 653/A 653M.
- C. Stainless Steel Sheet: Conforming to ASTM A 666.
- D. Aluminized Steel Sheet: Conforming to ASTM A 792/A 792M.

2.3 RECYCLING TRASH CHUTE SYSTEM

- A. Acceptable Product: Valiant Model V10.
- B. Vent Through Roof:
 - 1. Vent stack: Galvanized steel seamless tube, 22 gage (0.8 mm), 24 inches (609 mm) diameter, extending 48 inches (1220 mm) above finished roof.
 - 2. Vent cap: Formed steel sheet, 22 gage (0.7 mm).

3. Vent flashing: Formed steel sheet, 22 gage (0.7 mm), to interface with roofing materials.
- C. Intake Chute Assembly:
1. Chute: Aluminized steel seamless tube, 16 gage (1.5 mm), 24 inches (609 mm) diameter.
 2. Expansion joint: Located at each floor to accommodate building expansion/contraction.
 3. Floor support: Located at each floor to stabilize intake chute.
 4. Flushing system: 1/2 inch (12 mm) diameter IPS flushing head, located above intake section of top floor, with fitting for connection to piping.
 5. Sprinkler system: 1/2 inch (12 mm) diameter fusible-link sprinkler head, located above intake section of top floor and at alternate descending floors, with fitting for connection to piping.
- D. Intake Section:
1. Intake housing: Aluminized steel sheet, 16 gage (1.5 mm), welded to aluminized steel seamless tube, 14 gage (1.6 mm), 24 inches (609 mm) diameter, and connecting to intake chute assembly; one per floor.
 2. Intake door: Polished stainless steel fronts, 22 gage (0.8 mm), with 18 gage (1.2 mm) aluminized steel back and wings, bottom-pivot hinged, with polished 22 gage (0.8 mm) stainless steel frame overlapping rough wall opening; B label assembly, adjustable for variations in wall thickness, secured to intake housing, having the following:
 - a. Operating handle: Chrome-plated, tee-type.
 - b. Intake door interlock: B label electro-mechanical interlock keeps intake door in locked position until released by control panel button.
 3. Control panel: Wall-mounted unit in NEMA 4 enclosure, 12/24VDC, having the following:
 - a. Indicator light adjacent to "SYSTEM IN USE" label.
 - b. Three pushbuttons, labelled respectively "MIXED TRASH", "PAPER", and "METAL", which illuminate when activated; activating any of the three illuminates pushbutton, releases intake door interlock for local intake door, activates "SYSTEM IN USE" indicator light at control panels at all floors, activates trash separator unit, and overrides local pushbutton operation at control panels at all other floors.

- E. Discharge Assembly:
 - 1. Door and frame: Galvanized steel plate, 22 gage (0.8 mm), track-mounted; B label assembly, spring-loaded with 155 degrees F (68 degrees C) fusible link.
 - 2. Track: Steel bar, 1-1/2 inch (38 mm) by 1/4 inch (6 mm).

- F. Trash Separator Unit Assembly:
 - 1. Electrical/mechanical equipment:
 - a. Gear-and-rack motor: 1 inch (25 mm) diameter gear; 1 horsepower electric motor, 110VAC, 60 Hz.
 - b. Hydraulic torque motor: 0 - 2000 pounds per square inch (0 - 13.7 Mpa) operating pressure, 110VAC, 15 ampere, 60Hz.
 - 2. Equipment platform: Galvanized steel plate, 12 gage (1.8 mm), with pre-lubricated ball-bearing guide wheels.
 - 3. Guide wheels: Pre-lubricated ball-bearing movement.
 - 4. Track: Steel bar, 1-1/2 inch (38 mm) by 1/4 inch (6 mm).

- G. Discharge Chute Assembly:
 - 1. Chutes: Two aluminized steel seamless tubes, 14 gage (1.9 mm), 18 inches (457 mm) diameter, one for metals and one for paper; platform-mounted.
 - 2. Platform: Galvanized steel plate, 12 gage (1.8 mm), supported by galvanized steel tube frame, 11 gage (1.9 mm) wall thickness.

- H. Containers:
 - 1. Construction: Galvanized steel, 18 gage (1.2 mm), welded seams.
 - 2. Capacities:
 - a. Mixed trash: 2 cubic yards (1.5 cu m).
 - b. Paper: 1/2 cubic yard (0.38 cu m).
 - c. Metals: 1/2 cubic yard (0.38 cu m).

- I. Piping for flushing head and sprinkler heads are specified in Division 15 sections.

- J. Electrical service components are specified in Division 16 sections.

2.4 FABRICATION

- A. Assemble system to extent practical, subject to shipping limitations; incorporate provisions for correct chute alignment at site assembly.
- B. Join components by welding seams, grinding completed welds smooth, or by forming lock-seams.
- C. Applied fasteners, or rough-welded seams, protruding into chute opening are not permitted.
- D. Incorporate provisions for reinforcement and support of indicated offsets in chute path.

2.5 FINISHES

- A. Finish sight-exposed metal surfaces, except stainless steel surfaces and interface surfaces of moving components, with gray enamel over rust-inhibitive primer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Openings in structure are prepared in accordance with shop drawings for installation of system.
 - 2. Piping to flushing head and sprinkler heads is of correct type, and in correct location.
 - 3. Electrical service to electrical/mechanical components of system is of correct type, and in correct location.
- B. Installer's Examination:
 - 1. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
 - 2. Transmit two copies of installer's report to Architect within 24 hours of receipt.
 - 3. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
 - 4. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 INSTALLATION

- A. Install system in accordance with shop drawings and manufacturer's instructions; maintain plumb and level tolerances indicated.
- B. Installation of piping to flushing head and sprinkler heads is specified in Division 15 sections.
- C. Installation of electrical service components is specified in Division 16 sections.

3.3 FIELD QUALITY CONTROL

- A. Site Tests and Inspections: Arrange and pay for tests of system required by local authorities having jurisdiction.

3.4 ADJUSTING

- A. Adjust intake doors to operate correctly and in coordination with control system and electro/mechanical locking system.

3.5 DEMONSTRATION

- A. Demonstrate operation of system to Owner-designated personnel; include instructions for system maintenance.

END OF SECTION