

SECTION 226600 – Chemical Waste Systems for Laboratory and Healthcare Facilities

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Special waste piping
- B. Related Requirements:
 - 1. Section 226600 "Chemical-Waste Systems for Laboratory and Healthcare Facilities" for chemical-waste and vent piping systems.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
 - 1. [<Double click to insert sustainable design text for adhesives.>](#)
- C. Shop Drawings: Include plans, elevations, sections, and details.

1.4 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: For waste and vent piping, accessories, and components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - 2. Detailed description of piping anchorage devices on which the certification is based and their installation requirements.
- B. Field quality-control reports.

1.5 FIELD CONDITIONS

- A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
1. Notify [Architect] [Construction Manager] [Owner] no fewer than [two] <Insert number> days in advance of proposed interruption of sanitary waste service.
 2. Do not proceed with interruption of sanitary waste service without [Architect's] [Construction Manager's] [Owner's] written permission.

1.6 WARRANTY

- A. Listed manufacturers to provide labeling and warranty of their respective products.

PART 2 - PRODUCTS

SPECIAL WASTE & VENT PIPING

1. CPVC Chemical Waste Drainage System
 - A. CPVC Drainage Pipe and Fittings: Shall be manufactured from CPVC type IV Grade 1 compounds with a minimum cell class of 23447. Pipe and Fittings shall conform to ASTM F2618. Schedule 40 pipe, and socket type (solvent cement) drainage pattern fittings
 - B. Joints: solvent welded with cement conforming to ASTM F493 Use one step solvent cement specially formulated for CPVC Chemical Waste applications that has a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), and
 - C. All pipe, fittings, and cement shall be certified by NSF International for use with Chemical Waste Drainage Systems and shall bear the mark "NSF-cw".
 - D. Installation shall be in accordance with manufacturer's instructions and all applicable code requirements
 - E. P-traps with union, jar traps manufactured from CPVC with solvent cement connection.
 - F. Acceptable Manufacturers: ChemDrain by Charlotte Pipe and Foundry Co., or approved equal.
2. Polypropylene Chemical Waste Drainage System
 - A. Joints: Electrical resistance fusion. Make polyolefin drainage piping joints according to ASTM-F1290
 - B. Drainage Pipe & Fittings: Polypropylene ASTM-F1412, pipe extruded and drainage pattern fittings molded, with schedule 40 dimensions, from polypropylene resin with fire-retardant additive complying with ASTM- D1401; with fusion joint ends.

1. Exception: Pipe & fittings made from polypropylene resin without fire-retardant additive may be used for underground installation.

- C. Acceptable Manufacturers: Orion Fittings, Inc., Sloan, George Fischer, Inc., or approved equal.
- D. Installation shall be in accordance with manufacturer's instructions and all applicable code requirements.

2.1 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
 - 1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 - 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary waste and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
 - 1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
 - a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 - 2. Leave uncovered and unconcealed new, altered, extended, or replaced waste and vent piping until it has been tested and approved.
 - a. Expose work that was covered or concealed before it was tested.
 - 3. Roughing-in Plumbing Test Procedure: Test waste and vent piping except outside leaders on completion of roughing-in.
 - a. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water (30 kPa).
 - b. From 15 minutes before inspection starts to completion of inspection, water level must not drop.
 - c. Inspect joints for leaks.
 - 4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight.
 - a. Plug vent-stack openings on roof and building drains where they leave building.

- b. Use U-tube or manometer inserted in trap of water closet to measure this pressure.
 - c. Air pressure must remain constant without introducing additional air throughout period of inspection.
 - d. Inspect plumbing fixture connections for gas and water leaks.
5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
 6. Prepare reports for tests and required corrective action.

2.2 CLEANING AND PROTECTION

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect sanitary waste and vent piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops.
- D. Repair damage to adjacent materials caused by waste and vent piping installation.

END OF SECTION 226600