

SECTION 22 05 00

ACID RESISTANT WASTE/VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. The Conditions of the Contract and applicable requirements of Division 1, "General Requirements", and Section 23 01 00, "Mechanical General Provisions", govern this Section.

1.2 SCOPE OF WORK:

- A. Work Included: Provide all labor, materials, equipment, tools and services, and perform all operations required in connection with or properly incidental to the construction of complete acid waste and vent system as indicated on the Drawings, and as required for a complete and functional system.

1.3 QUALITY ASSURANCE:

- A. Acceptable Manufacturers: Provide products complying with these specifications and produced by one of the following:
 - 1. PVDF Pipe and Fittings:
 - a. GSR Sloan.
 - b. Orion

1.4 SUBMITTALS:

- A. Shop Drawing submittals shall include, but not be limited to, the following:
 - 1. Cut sheets of acid waste/vent pipe, fittings and other required accessories clearly indicating all features, options, materials and dimensions.
 - 2. Additional information as required in Section 23 01 00.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver acid resistant waste/vent piping system components in factory-fabricated water-resistant wrapping.
- B. Handle acid resistant waste/vent piping system components carefully to avoid damage to material component, enclosure and finish.
- C. Store acid resistant waste/vent piping system components in a clean, dry space and protect from the weather.

PART 2 - PRODUCTS

2.1 ACID WASTE AND VENT PIPE AND FITTINGS:

- A. Above ground pipe and fittings located within spaces utilized as air plenums shall be IAPMO listed, Schedule 40, FR-PVDF manufactured from Kynar 740-02, flame retardant Polyvinylidene Fluoride (PVDF) conforming to ASTM F 1673, with a limiting oxygen index (LOI) of 60, Resin must have a vertical burn rating of 94 V-0. Kynar 740-02 resin based on testing to ASTM E84 (UL 723) must have surface burning characteristics greater than or equal to a flame spread 5 and smoke development 35. Fittings shall be third party certified to ASTM F 1673 and ASTM E84, and IAPMO approved, with a tapered elastic retaining ring designed to lock into a machined groove on the

mating piping. All fittings shall have integrally molded union connections. No metallic grab rings or clamps shall be allowed.

- B. Polyvinylidene Fluoride pipe and fittings shall be as manufactured by IPEX, "Plenumline", or approved equivalent.

2.2 HANGERS AND SUPPORTS:

- A. Horizontal Piping: All horizontal piping shall be supported on clevis type hangers.
- B. Vertical/Riser Piping: All vertical/riser piping shall be supported using riser clamps padded with 1/4" thick solid neoprene or Buna-N rubber.
- C. Wall Chase Piping: All wall chase piping shall be supported using the wall/chase support system specified in Section 22 00 00.

3.1 INSTALLATION:

- A. General: All piping, fittings and accessories shall be installed in strict accordance with the manufacturer's written installation instructions and applicable codes.
- B. Pipe Slope: Slope waste and vent piping as specified in Section 22 00 00.
- C. Damaged Piping: Any damaged piping shall be removed and replaced at the Contractor's expense.
- D. Expansion Provisions: All PPFR piping systems shall be installed with adequate provisions taken where the installation temperature is outside the range of 65°F to 85°F. Vertical expansion joint assemblies, offsets and restrain as recommended by the piping system manufacturer shall be provided wherever the installation temperature is more than 10°F different from the normal building temperature.
- E. Hangers and Supports: The entire piping system and related hangers and supports shall be installed such that the piping system is properly aligned and free of stress.

- 1. Vertical stacks shall be supported at each floor using riser clamps. The lowest riser support shall be located below the lowest coupling/hub on the stack and shall restrict sideways as well as downward motion.
- 2. Horizontal piping shall be supported using Clevis type hangers with maximum hanger spacing as follows:

PPFR Pipe Size	Support Spacing
1-1/2"	4' - 0"
2"	4' - 0"
3"	5' - 0"
4"	6' - 0"
6"	7' - 0"

- 3. Hangers shall also be located at each offset, bend or fitting on PPFR piping.

- F. Training: The Contractor shall instruct the Owner's maintenance staff the proper procedure for fusing acid waste pipe joints and shall provide the Owner with all special tools and fusing equipment required to properly fuse acid waste pipe joints.

3.2 TESTING:

- A. Test acid resistant waste and vent piping as specified in Sections 23 05 93 and 22 00 00. In addition to water test, apply peppermint or smoke tests, if required by local code.

3.3 IDENTIFICATION:

- A. Refer to Section 23 03 00 for applicable painting, nameplate and labeling requirements.

END OF SECTION 22 05 00