

**SECTION 22 13 23
SANITARY WASTE INTERCEPTORS**

SPEC WRITER NOTES:

1. Delete between // // if not applicable to project. Also delete any other item or paragraph not applicable in the Section and renumber the paragraphs.
2. Coordinate electrical requirements with the Electrical Engineer.
3. Coordinate details with the Structural Engineer for waste interceptors installed inside concrete pits.
4. This section covers sanitary waste interceptors within building envelope. Concrete interceptors constructed outside of the five foot building line are covered in Section 33 30 00, SANITARY SEWER UTILITIES.
5. Where amalgam solids may enter the wastewater stream, amalgam interceptors shall be provided. Amalgam interceptors are covered in Section 22 62 19.74, DENTAL VACUUM AND EVACUATION EQUIPMENT.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section pertains to concrete, polyethylene, and metal sanitary waste interceptors used for the removal of hair, oil, grease and sediment from waste streams for installations within the building envelope. Pre-cast concrete interceptors are covered in Section 33 30 00, SANITARY SEWER UTILITIES.
- B. A complete listing of common acronyms and abbreviations are included in Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS.
- B. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- C. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- D. //Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.//
- E. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.
- F. //Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//
- G. Section 22 13 00, FACILITY SANITARY AND VENT PIPING.
- H. Section 33 30 00, SANITARY SEWER UTILITIES.

1.3 APPLICABLE PUBLICATIONS

SPEC WRITER NOTE: Make material requirements agree with requirements

specified in the referenced Applicable Publications. Verify and update the publication list to that which applies to the project, unless the reference applies to all plumbing systems. Publications that apply to all plumbing systems may not be specifically referenced in the body of the specification but shall form a part of this specification.

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. Where conflicts occur these specifications and the VHA standards will govern.
- B. American Society of Mechanical Engineers (ASME):
 A112.14.3-2018.....Hydromechanical Grease Interceptors
- C. American Society for Testing and Materials (ASTM):
 A48/A48M-2003(R2016)....Standards specification for Gray Iron Castings
 A536-1984(R2019)e1.....Standard Specification for Ductile Iron
 Castings
 A615/A615M-2018e1.....Standard Specification for Deformed and Plain
 Carbon-Steel Bars for Concrete Reinforcement
 C890-2019.....Standard Practice for Minimum Structural Design
 Loading for Monolithic or Sectional Precast
 Concrete Water and Wastewater Structures
 C891-2019.....Standard Practice for Installation of
 Underground Precast Concrete Utility Structures
 C913-2018.....Standard Specification for Precast Concrete
 Water and Wastewater Structures
 C923-2018.....Standard Specification for Resilient Connectors
 Between Reinforced Concrete Manhole Structures,
 Pipes, and Laterals
 C1613-2017.....Standard Specification for Precast Concrete
 Grease Interceptor Tanks
- D. International Code Council (ICC)
 IPC-2018.....International Plumbing Code
- E. Plumbing and Drainage Institute (PDI):
 PDI-G101-2017.....Testing and Rating Procedure for Hydro
 Mechanical Grease Interceptors

1.4 SUBMITTALS

- A. Submittals, including number of required copies, shall be submitted in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Information and material submitted under this section shall be marked "SUBMITTED UNDER SECTION 22 13 23, SANITARY WASTE INTERCEPTORS", with applicable paragraph identification.
- C. Manufacturer's Literature and Data Including: For each type of interceptor indicated, the submittal shall include materials of fabrication, dimensions, rated capacities, retention capacities, operating characteristics, size and location of each pipe connection, furnished specialties, and accessories.
- D. Detailed shop drawing of clamping device and extensions when required in connection with the waterproofing membrane or the floor drain shall be submitted.

SPEC WRITER NOTE: Coordinate O&M Manual and commissioning requirements with Section 01 00 00, GENERAL REQUIREMENTS and Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS. O&M Manuals shall be submitted for content review as part of closeout documents.

- E. Complete operating and maintenance manuals including wiring diagrams, technical data sheets, information for ordering replaceable parts, and troubleshooting guide:
 - 1. Include complete list indicating all components of the systems.
 - 2. Include complete diagrams of the internal wiring for each item of equipment.
 - 3. Diagrams shall have their terminals identified to facilitate installation, operation and maintenance.
- F. //Completed System Readiness Checklist provided by the Commissioning Agent and completed by the contractor, signed by a qualified technician and dated on the date of completion, in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//
- G. //Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//

1.5 QUALITY ASSURANCE

- A. Bio-Based Materials: For products designated by the USDA's Bio-Preferred Program, provide products that meet or exceed USDA

recommendations for bio-based content, so long as products meet all performance requirements in this specifications section. For more information regarding the product categories covered by the Bio-Preferred Program, visit <https://www.biopreferred.gov>.

- B. Refer to Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS for additional sustainable design requirements.

1.6 AS-BUILT DOCUMENTATION

- A. Comply with requirements in Paragraph, AS-BUILT DOCUMENTATION of Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

PART 2 - PRODUCTS

2.1 HAIR INTERCEPTOR

- A. In barber and beauty shops, a hair interceptor shall be provided on shampoo bowls in lieu of P-traps. The hair interceptor shall be //chromium plated cast brass// //polyethylene// with top slip joint inlet, 38 mm (1-1/2 inch) slip outlet and screwed, gasketed, watertight cover in bottom. The interceptor shall be provided with a removable, perforated, cylindrical screen of corrosion resisting metal or brass.

2.2 GREASE INTERCEPTOR

SPEC WRITER NOTE: Capacity of interceptors shall be scheduled on the drawings.

- A. Precast Concrete Grease Interceptors: Comply with ASTM C913.
1. Include rubber-gasketed joints, //vent connections, //manholes, compartments or baffles, and piping or openings to retain grease and to permit wastewater flow.
 2. Structural Design Loads:
 - a. Light-Traffic Load: Comply with ASTM C890, A-8.
 - b. Medium-Traffic Load: Comply with ASTM C890, A-12.
 - c. Heavy-Traffic Load: Comply with ASTM C890, A-16.
 - d. Walkway Load: Comply with ASTM C890, A-03.
 3. Resilient Pipe Connectors: ASTM C923 (ASTM C923M), cast or fitted into interceptor walls, for each pipe connection.
 4. Steps: Individual FRP steps, FRP ladder, or ASTM A615/A615M, deformed, 13 mm (1/2 inch) steel reinforcing rods, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 305 to 406 mm (12 to 16 inch) intervals. Omit steps if total depth

from floor of interceptor to finished grade is less than 1524 mm (60 inches).

5. Grade Rings: Reinforced-concrete rings, 152 to 228 mm (6 to 9 inches) total thickness, to match diameter of manhole frame and cover.
 6. Manhole Frames and Covers: Ferrous; 610 mm (24 inch) ID by 178 to 228 mm (7 to 9 inch) riser with 100 mm (4 inch) minimum width flange and 660 mm (26 inch) diameter cover.
 - a. Ductile Iron: ASTM A536, Grade 60-40-18, unless otherwise indicated.
 - b. Gray Iron: ASTM A48/A48M, Class 35, unless otherwise indicated.
 - c. Include indented top design with lettering cast into cover, using wording equivalent to "GREASE INTERCEPTOR."
- B. Cast-Iron or Steel Grease Interceptors:
1. Standard: ASME A112.14.3 and PDI-G101, for intercepting and retaining fats, oils, and greases from food-preparation or processing wastewater.
 2. Plumbing and Drainage Institute Seal: Required.
 3. Body Material: Cast-iron or steel.
 4. Interior Lining: Corrosion-resistant enamel.
 5. Exterior Coating: Corrosion-resistant enamel.
 6. Body Extension: //Not required// //Required//.
- C. Plastic Grease Interceptors:
1. Standard: ASME A112.14.3// and PDI-G101//, for intercepting and retaining fats, oils, and greases from food-preparation or processing wastewater.
 2. Plumbing and Drainage Institute Seal: //Not required// //Required//.
 3. Body Material: Plastic.
 4. Body Extension: //Not required// //Required//.

2.3 GREASE/OIL REMOVAL UNIT

SPEC WRITER NOTES:

1. Modify specification when point of use application is required.
2. Coordinate and assure that the electrical characteristics specified below are clearly shown on the appropriate drawings. Coordinate with Electrical Engineer.

- A. Grease/oil removal unit shall comply with PDI-G101 and ASME A112.14.3.

- B. The grease/oil removal unit shall be welded stainless-steel, automatic self-cleaning interceptor with a rotating gear wheel assembly for automatic grease/oil removal.
- C. The grease/oil removal unit shall have a flow control device.
- D. The grease/oil removal unit shall include the following electrical components:
 - 1. Self-regulating electric immersion heater.
 - 2. A programmable 24 hour time control.
- E. The grease/oil removal unit shall have quick release, stainless-steel lid clamps, a gasketed and fully removable stainless-steel lid, a separate grease/oil collection container and an internal stainless-steel strainer basket for collection of solids and sediment.

SPEC WRITER NOTE: Coordinate use of radio frequency alarm with biomedical department to ensure there will be no potential frequency conflicts.

- F. The grease/oil removal unit shall have a high level alarm probe and light. The Alarm probe shall be constructed of corrosion-resistant material and utilize 120 VAC radio frequency and shall be provided fully calibrated and ready to use. The alarm light shall operate on 120 VAC and shall be actuated by the output relay on the alarm probe. The alarm light shall be located as shown on drawing. The alarm shall be tied to the building automation system (BAS) panel for monitoring.

SPEC WRITER NOTE: Pump and heater below may be necessary depending on the distance between the discharging fixtures and the grease/oil removal unit. Coordinate with the Electrical Engineer if required.

- G. //An internal pump and heater hose shall be capable of pumping grease/oils to 4.6 m (15 feet) head with a hose length of 15 m (50 feet). The integral pump drive shall have sprocket mating with the unit gear wheel. Heated hose assembly shall have an I.D. of 13 mm (1/2 inch) Teflon pipe, a 120 VAC self-regulating heating element, fibrous glass thermal insulation and black PVC jacket.//
- H. //Pit sump pump shall be constructed of an epoxy coated cast-iron housing, polypropylene base and polycarbonate cover. The Pump shall be controlled automatically with a float switch. The Pump shall be provided with 3 m (10 feet) long power cord, thermal overheat protection, screened intake, non-clog pumping head and impeller and

//38 mm (1-1/2 inch)// // mm (inch)// FNPT discharge pipe. The pump capacity shall be //2.84 L/s (45 gallons per minute)// // L/s (gpm)// at //14 kPa (5 feet)// // kPa (feet)// at 120 VAC.//

- I. //Grease/Oil collection container shall be constructed of corrosive resistant materials, with lid, and minimum //208 L (55 gallons)// // L (gallons)// capacity.//

2.4 SAND AND SOLID INTERCEPTOR

SPEC WRITER NOTE: Where sand, grit or sediment may enter the wastewater stream, sand interceptors should be provided. Otherwise, delete this paragraph.

- A. Provide sand and solid interceptor to intercept and collect sand, grit, and/or sediment in a wastewater flow to prevent entry into the sanitary sewer system. Factory-fabricated, //polyethylene// //cast-iron// //steel// body and //cast-iron// //steel// inlet grate; with settlement chamber and removable //basket// //strainer//. Outlet piping connection to be hub, hubless or threaded, unless otherwise indicated.

2.5 OIL INTERCEPTOR

SPEC WRITER NOTE: Where oil may enter the wastewater stream, oil interceptors should be provided. Otherwise, delete this paragraph.

- A. Provide oil interceptor to intercept and collect free oil in a wastewater flow to prevent entry into the sanitary sewer system. Factory-fabricated, double wall //polyethylene// //cast-iron// //steel// body and //cast-iron// //steel// gasketed lid; with settlement chamber and removable //basket// //strainer//; vents; and flow-control fitting on inlet. Outlet piping connection to be hub, hubless or threaded, unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Interceptors and grease/oil removal units shall be set level and plumb.
- B. Install interceptor and grease/oil removal unit, including trapping, venting, and flow-control fittings according to the manufacture's installation instructions and with recommended service clearances.
- C. Install interceptor and grease/oil removal unit with cleanout immediately downstream from unit that do not have integral cleanout on the unit.

- D. Interceptor and grease/oil removal unit covers shall be set flush with finished surface in pavements and the tops shall be traffic-rated. Set tops 75 mm (3 inches) above finished surface elsewhere unless otherwise indicated.
- E. If an installation is unsatisfactory to the COR, the Contractor shall correct the installation at no cost or time to the Government.

3.2 CONNECTIONS

- A. Pipe installation requirements are specified in Section 22 13 00, FACILITY SANITARY AND VENT PIPING.
- B. Piping connections shall be made between interceptor/grease/oil removal units and piping systems in accordance with manufacturer's written guidelines.

3.3 WARNING TAPE

- A. Warning tape shall be placed over ferrous piping.
- B. Detectable warning tape shall be used over nonferrous pipe and over the edges of underground structures.

3.4 STARTUP AND TESTING

- A. Perform tests as recommended by product manufacturer and listed standards and under actual or simulated operating conditions and prove full compliance with design and specified requirements. Tests of the various items of equipment shall be performed simultaneously with the system of which each item is an integral part.
- B. The tests shall include system capacity, control function, and alarm functions.
- C. When any defects are detected, correct defects and repeat test at no additional cost or time to the Government.
- D. //The CxA will observe startup and contractor testing of selected equipment. Coordinate the startup and contractor testing schedules with the COR and CxA. Provide a minimum notice of 10 working days prior to startup and testing.//

3.5 //COMMISSIONING

- A. Provide commissioning documentation in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.
- B. Components provided under this section of the specification will be tested as part of a larger system.//

3.6 DEMONSTRATION AND TRAINING

- A. Provide services of manufacturer's technical representative for //4//
// // hours to instruct VA Personnel responsible in operation and
maintenance of the system.
- B. //Submit training plans and instructor qualifications in accordance
with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING
SYSTEMS.//

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