

**SECTION 23 00 52
FLUSHING, CLEANING AND DISINFECTING**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions, Division 1, and Division 23 of the Specification Sections, apply to work of this Section. Provide MSDS sheets for all detergents and chemicals used in the cleaning process.

1.02 WORK INCLUDED

- A. Flushing, cleaning and disinfection of piping systems in the field by the Contractors (Mechanical and Plumbing).

1.03 SUBMITTALS

- A. Contractor shall prepare a cleaning, flushing testing and treatment plan. Plan shall include the following:
 - 1. Sequence of testing and testing procedures for each section of pipe to be tested, identified by pipe zone or sector identification marker. Markers shall be keyed to Drawings for each pipe sector, showing the physical location of each designated pipe test section. Drawings keyed to pipe zones or sectors shall be formatted to allow each section of piping to be physically located and identified when referred to in pipe system cleaning, flushing, hydrostatic testing, and chemical treatment plan.
 - 2. Description of equipment for flushing operations.
 - 3. Tracking checklist for managing and ensuring that all pipe sections have been cleaned, flushed, hydrostatically tested, and chemically treated.

1.04 QUALITY ASSURANCE

- A. Commissioning of a system or systems specified in this section is part of the construction process. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with NYCHA and the Commissioning Agent (CxA). Project Closeout is dependent on successful completion of all commissioning procedures, documentation, and issue closure. Refer to Section 017700 Closeout Procedures, for closeout details. Refer to Section 019113 Project Commissioning Requirements, for detailed commissioning requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Alkaline Oakite Solution: 1 lb. Oakite per 50 gallons of water.

PART 3 - EXECUTION

3.01 FLUSHING, CLEANING AND DISINFECTION OF PIPING/UTILITY SYSTEMS

- A. General:
 - 1. Detergents, solvents, and other cleaning materials shall be compatible with the materials of construction of the systems in which they are to be used. They shall not adversely affect the materials or mechanisms in the systems and they shall be acceptable to equipment manufacturers. Detergents, solvents, and other cleaning agents shall also be compatible with the systems in which they are used, and must be approved by the Owner's Representative.

2. Materials in blinds, gaskets, bolts, etc. used in isolating segments of piping systems shall be compatible with the systems being cleaned and/or tested. New gaskets shall be used when removing blanking plates or blind flanges.
 3. After completion of piping tests in accordance with Section 230053 flush, clean, and disinfect piping to satisfaction of Owner's Representative and all authorities having jurisdiction. Place temporary screens at connection to all equipment, at automatic control valves and where permanent strainers are not provided.
 4. Notify Owner's Representative not less than 2 days prior to flushing operation so that he may witness the operation (field flushing only).
 5. For field flushing, secure approval of Owner's Representative for a method of wastewater disposal after flushing. Contractor shall provide disposal of wastewater from pipe flushing at off-site location as required by Owner.
 6. Provide and remove temporary pipe and equipment required.
 7. Remove dirt and debris collected at screens, strainers and other points from the system. Clean, and reinstall strainer screens after flushing, cleaning, and disinfecting.
 8. After cleaning, verify that valves, traps, controls, and related equipment are operable.
- B. Flushing of the Steam and Condensate Piping During Start-up:
1. Flush system with clean water. Clean strainers.
- C. Cleaning Steam and Condensate Piping:
1. Clean steam system by blowing down and purging with steam.
 2. Clean condensate system by flushing with water.
 3. Dispose of waste water by:
 - a. Closing stop valve upstream of steam trap and installing temporary valved connection from dirt pocket to waste.
 4. Purge and flush system with water until scale, sediment, pipe compound and other foreign materials are removed and water runs clear.
 5. Check traps, valves, and other equipment for operability after cleaning.
- D. Disinfecting Domestic Water and Various Water Systems:
1. Thoroughly flush hot and cold water piping system, water heaters, and storage vessels at full line pressure; per latest published procedure of AWWA-C 601, prior to disinfecting until water runs clear.
 2. Disinfect domestic water systems per AWWA standard D102-64 Section 5.3.2. and to satisfaction of authorities having jurisdiction.
 3. As a minimum procedure, fill every part of new system with water containing 50 ppm chlorine for at least 6 hours.
 4. After, recirculation is completed, drain and flush the system with city water until the effluent water Ph is neutral (Ph=7.0).
- E. Cleaning Drainage Piping:
1. Clean interior of pipe of any wood, metal, dirt, joint filler, or other debris.
 2. Run dry cloth through pipe sections prior to joining.

END OF SECTION 23 00 52 23 00 52