

**SECTION 02110 - ASBESTOS CEMENT PIPE REPAIRS,
DEMOLITION, AND DISPOSAL**

PART 1 - GENERAL

1.1 WORK INCLUDED IN THIS SECTION

- A. The WORK of this Section includes the repair, demolition, and disposal of asbestos cement pipe (ACP).

1.2 REFERENCED SPECIFICATIONS

- A. Except as otherwise indicated, the current editions of the following apply to the WORK of this Section.
 - 1. AWWA C213 Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
 - 2. AWWA C400 Asbestos-Cement Transmission Pipe 4 inch through 16 inch for Water and Other Liquids.
 - 3. AWWA C401 The Selection of Asbestos Cement Distribution Pipe, 4 inch through 16 inch for Water and Other Liquids.
 - 4. AWWA C402 Asbestos-Cement Transmission Pipe 18 inch through 42 inch for Potable Water and Other Liquids.
 - 5. AWWA C403 The Selection of Asbestos-Cement Transmission and Feeder Main Pipe, 18 inch through 42 inch.
 - 6. AWWA C800 Underground Service Line Valves and Fittings.

PART 2 - PRODUCTS

2.1 GENERAL

- A. ACP shall be used only as authorized by the DISTRICT for connections to existing ACP systems. All connections shall be made at existing joints. Field cutting of ACP shall not be permitted.
- B. ACP installations, other than for repairs and connections shall not be considered by the DISTRICT.
- C. The manufacturer of each shipment of pipe may be required to supply a statement certifying that each length of pipe has been subjected to the tests specified for ACP, and has been found to meet all requirements of the aforementioned AWWA Standards and as specified herein.
- D. The pipe and couplings shall be carefully inspected for defects. Any length of pipe, couplings or gaskets found to be defective in workmanship or materials, or so damaged as to make repair and use impossible, shall be rejected and removed from the job site the day defect is discovered.

2.2 ASBESTOS CEMENT PIPE

- A. ACP shall be a minimum of Class 150.
- B. The pipe and couplings shall comply with the latest edition of the AWWA Standards.
- C. Pipe ends shall be step machined to provide automatic end separation without the use of mechanical spacers. When assembled, the pipe will have only two rubber rings per coupling.
- D. ACP shall be provided in standard lengths of 13 feet, 6 feet 6 inches (6'-6"), 3 feet 3 inches (3'-3"), and 19 inches. Random lengths shall not be permitted.
- E. Cast iron fittings shall be used for all bends where deflections exceed maximum allowable deflection.

2.3 ASBESTOS CEMENT PIPE SADDLES

- A. Bronze double strap saddles shall be used on pipe sizes 8 inch through 16 inch. The saddle body shall be manufactured from cast bronze in accordance with ASTM B62 or B584 and AWWA C800. The gasket shall be Buna N.
- B. A fabricated steel saddle shall be used for all connections on pipe sizes larger than 16 inch.
- C. The carbon steel used in the fabricated steel saddle shall have a minimum yield strength of 30,000 psi. The bolts and nuts shall be stainless steel, Type 316. The entire sleeve shall be shop coated with 8 to 10 mils of fusion bonded powder epoxy in accordance with AWWA C213.
- D. No wet taps will be allowed where the outlet is the same size as the main.
- E. Fabricated steel and cast iron saddles shall have a minimum 1/2 inch threadolet or coupling for testing.
- F. Cast iron saddles shall be shop coated with 8 to 10 mils of liquid epoxy.

PART 3 - EXECUTION

3.1 GENERAL

- A. The CONTRACTOR shall install all repair and connection pipe, closure sections, fittings, valves and appurtenances shown on the plans including bolts, nuts, gaskets, and jointing materials.
- B. The CONTRACTOR shall maintain the inside of the pipe clean, sanitary, and free from foreign materials. At all times when the work of installing pipe is

not in progress, all openings into the pipe and the ends of the pipe in the trenches shall be kept tightly closed to prevent the entrance of animals and foreign materials.

- C. Where closure sections are required by the CONTRACTOR's laying operations, the sections shall be installed in accordance with the manufacturer's installation guide and shall only be used with the approval of the DISTRICT.
- D. The radius of curvature of the trench shall determine the maximum length of pipe section that can be used without exceeding the allowable deflection at a joint.
- E. Combined deflections at rubber gasket or flexible coupling joints shall not exceed 2 1/2 degrees.
- F. Use of 3 feet-3 inch (3'-3") or 19 inch pipe sections shall only be permitted with the approval of the DISTRICT.
- G. Any ACP water line(s) being abandoned shall be abandoned in place unless otherwise noted.

3.2 ABANDONMENT AND DISPOSAL

- A. If it is necessary to remove any abandoned ACP line(s) and/or appurtenances to accommodate improvements, the ACP line(s) and/or appurtenances shall be removed and salvaged if requested by the DISTRICT; otherwise, ACP shall be removed and disposed of in accordance with all applicable laws.
- B. All work involved in the removal, salvage or disposal of ACP shall be the responsibility and at the expense of the CONTRACTOR.
- C. All scrap ACP shall be properly manifested and prepared for transport following the criteria of the County of San Diego Department of Public Works, Solid Waste Division. The scrap material shall be delivered to a landfill permitted for disposal of non-friable asbestos containing materials.
- D. County of San Diego landfills do not accept friable asbestos-containing materials for disposal. Friable asbestos-containing materials are regulated as hazardous waste (22 CCR 66261.24). A friable material is defined as material that can be crumbled, pulverized, or reduced to powder in the hand.

County of San Diego landfills do accept non-friable asbestos-containing pipe (ACP) under the following conditions:

- 1. Small pieces of A/C pipe less than three feet long must have all broken edges encapsulated (sealed) with an approved product and double wrapped in a durable 6 mil plastic which is properly sealed to prevent expulsion of dust particles.

2. Intact A/C pipe over three feet long does not have to be double wrapped in 6 mil plastic. Any broken edges, however, must be encapsulated with an approved product. Certane 1000 Post Removal Encapsulant or equal.
 3. Make an appointment for disposal with the Solid Waste Division Office at least two working days prior to requesting disposal. Inform the appropriate Field Services section of appointment date and time.
 4. Asbestos containing pipe will be accepted into the landfill if the pipe is intact and if all broken edges are encapsulated using approved products and techniques. Small pieces of asbestos containing pipe less than three feet long must have any broken edges adequately encapsulated and it must be double wrapped in a durable 6 mil plastic which is properly sealed to prevent the expulsion of dust particles.
 5. The landfill will accept a maximum of two packaged loads per day per generator, unless prior approval has been obtained from the Solid Waste Division.
 6. Each load must be accompanied by a Department of Public Works Non-Hazardous, Non-Infectious Special Waste Manifest.
 7. All loads may be subject to inspection by County personnel prior to admittance to the landfill.
- E. The completed Generator copy (yellow) manifest shall be returned to the DISTRICT.

3.3 INSTALLATION

- A. Proper care shall be used to prevent damage in handling, moving, and placing the pipe. Tools and equipment satisfactory to the DISTRICT shall be provided and used by the CONTRACTOR.
- B. The pipe shall not be dropped, dragged, or handled in a manner that will cause bruises, cracks, or other damage.
- C. All pipe, fittings, valves, and other pipeline materials shall be lowered into the trench in a manner that prevents damage.
- D. Rubber rings for pipe joints shall be stored and protected in a proper manner to prevent deterioration.
- E. All material damaged in the course of installation shall be identified and removed from the job site.
- F. Pipe sections shall be laid by mechanical means in the trench to true alignment and grade in accordance with the drawings. The pipe grade shall be approved by the DISTRICT.

- G. Bell holes shall be excavated at each joint to permit proper assembly and inspection of the entire joint.
- H. Field cutting of ACP will not be permitted. All connections shall be made at existing joints.
- I. The CONTRACTOR shall be permitted to utilize Poly Vinyl Chloride (PVC) Pressure Pipe, 4-12 Inches for Water (Section 02500) in lieu of ACP. This general approval shall be limited for use of PVC to "milled over all" (MOA) pipe sections with a maximum six feet six inch (6'-6") pipe length. PVC pipe sections shall be provided by a DISTRICT approved manufacturer.
- J. The CONTRACTOR shall provide six feet six inch (6'-6") pipe lengths (shorts) on both sides of fittings. Other size shorts shall be permitted only with prior approval of the DISTRICT.
- K. The CONTRACTOR shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source. The CONTRACTOR shall assume full responsibility for any damage due to this cause; and shall, at their own expense, restore and replace the pipe to its specified condition and grade before any displacement occurred due to floating.
- L. Fittings shall be temporarily supported by placing concrete blocks under the bells until thrust blocks and supports are poured so that the pipe is not subjected to the weight of the fitting.
- M. Concrete thrust blocks of the size shown on the Standard Drawings or as instructed by the DISTRICT, shall be provided at the locations of all fittings and valves, at not additional cost to the DISTRICT.

END OF SECTION