

SECTION 15088COUPLINGS & CONNECTORSPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install couplings and connectors of the type(s) and size(s) in the location(s) shown on the Drawings and as specified herein.
- B. Related Work Specified Elsewhere: "Pipe & Pipe Fittings - General" is specified in this Division.

1.2 QUALITY ASSURANCE

- A. Minimum pressure rating equal to that of the pipeline in which they are to be installed.
- B. Couplings and connectors, other than those specified herein, are subject to the Engineer's approval.

PART 2 - PRODUCTS2.1 MATERIALS

- A. All Couplings and Connectors:
 - 1. Gasket Materials: Composition suitable for exposure to the liquids to be contained within the pipes.
 - 2. Diameters to properly fit the specific types of pipes on which couplings and connectors are to be installed.
- B. Sleeve Type Couplings (When Applicable):
 - 1. Exposed Couplings (When Applicable):
 - a. Steel middle ring,
 - b. Two steel follower rings,
 - c. Two wedge-section gaskets,
 - d. Sufficient steel bolts to properly compress the gaskets,
 - e. Acceptable Manufacturers:
 - (1) Dresser Manufacturing Co. - Style 38,
 - (2) Rockwell - Style 431,
 - (3) Or equivalent.
 - 2. Buried Couplings (When Applicable):
 - a. Cast iron or epoxy coated steel middle rings with pipe stops removed,
 - b. Two malleable iron or epoxy coated steel follower rings with ribbed construction,
 - c. Two wedge-section gaskets,
 - d. Sufficient AWWA C-111 or galvanized steel nuts and bolts to properly compress the gaskets,

- e. Acceptable Manufacturers:
 - (1) Dresser Manufacturing Co. - Style 38 and/or 153,
 - (2) Rockwell - Style 431, and/or 441,
 - (3) Or equivalent.
- C. Split Type Couplings (When Applicable):
 - 1. Constructed from malleable or ductile iron.
 - 2. For use with grooved or shouldered end pipe with minimum wall thickness as required so as not to weaken pipe.
 - 3. Cast in two segments for 3/4 inch through 14 inch pipe sizes, four segments for 15 inch through 24 inch pipe sizes, and six segments for pipe sizes over 24 inch.
 - 4. Coating: Enamel.
 - 5. Bolts: Carbon steel.
 - 6. All gaskets shall be Manufacturers Standard or as required for intended service with respect to fluid, temperature and pressure.
 - 7. Acceptable Manufacturers:
 - a. Victaulic Company of America, Style 77 for IPS Pipe, Style 31 for Ductile Iron Pipe.
 - b. Gustin-Bacon Co.,
 - c. Or equivalent.
- D. Flanged Adapters (When Applicable):
 - 1. For joining plain end or grooved end pipe to flanged pipes and fittings.
 - 2. Adapters shall conform in size and bolt hole placement to ANSI standards for steel and/or cast iron flanges 125 or 150 pound standard unless otherwise required for connections.
 - 3. Exposed Sleeve Type:
 - a. Constructed from steel.
 - b. Coating: Enamel.
 - c. Bolts: Carbon steel or ASTM A588 steel.
 - d. Acceptable Manufacturers:
 - (1) Dresser Manufacturing Co. - Style 128 for cast iron, ductile iron and steel pipes with diameters of 2 inches through 96 inches,
 - (2) Or equivalent.
 - 4. Buried Sleeve Type:
 - a. Constructed from cast iron.
 - b. Bolts: ASTM A588 steel or galvanized steel.
 - c. Acceptable Manufacturers:
 - (1) Dresser Manufacturing Co. - Style 127 locking type for cast iron, ductile iron, asbestos cement and steel pipes with diameters of 3 inches through 12 inches,
 - (2) Or equivalent.
 - 5. Split Type:
 - a. Constructed from malleable or ductile iron.
 - b. For use with grooved or shouldered end pipe.
 - c. Coating: Enamel.

- d. Acceptable Manufacturers:
 - (1) Victaulic Company of America - Style 741 for IPS pipe, or Style 341 for Ductile Iron Pipe, for pipe diameters of 2 inches through 12 inches,
 - (2) Victaulic Company of America - Style 742 for IPS pipe, or Style 342 for Ductile Iron Pipe, for pipe diameters of 14 inches through 16 inches,
 - (3) Or equivalent.
- E. Flexible Joints:
 - 1. Expansion Joints:
 - a. Materials shall be capable of withstanding the temperature, pressure and type of material in the pipeline.
 - b. Shall be the filled arch type that will prevent sediment build up for all sludge, sewage, and other lines with similar service.
 - c. Supplied with control rods to restrict elongation and compression.
 - d. Metal retaining rings shall be split and bevelled galvanized steel for placement against the flange of the expansion joint.
 - 2. Deflection Joints:
 - a. Joints designed to permit a nominal maximum deflection of 15 degrees in all directions from the axis of the adjacent pipe length, will prevent pulling apart, and will remain watertight at any angle of deflection under 15 degrees.
 - b. Material to be manufactured from a composition material suitable for exposure to the liquid, pressure and temperature to be contained within the pipe.
 - c. Supplied with control rods as required.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Sleeve Type Couplings (When Applicable):
 - 1. Thoroughly clean pipe ends for a distance of 8 inches from the ends prior to installing couplings, and use soapy water as a gasket lubricant.
 - 2. Slip a follower ring and gasket (in that order) over each pipe and place the middle ring centered over the joint.
 - 3. Insert the other pipe length into the middle ring the proper distance.
 - 4. Press the gaskets and followers evenly and firmly into the middle ring flares.
 - 5. Insert the bolts, finger tighten and progressively tighten diametrically opposite nuts uniformly around the adapter with a torque wrench applying the torque recommended by the manufacturer.
 - 6. Insert and tighten the tapered threaded lock pins.
 - 7. Insert the nuts and bolts for the flange, finger tighten and progressively tighten diametrically opposite bolts uniformly around the flange to the torque recommended by the manufacturer.

- B. Split Type Flange Adapters (When Applicable): Install in the same manner as Split Type Couplings.
- C. Buried Cast Iron Couplings, Adapters and Connectors (When Applicable): Thoroughly coat all exterior surfaces, including nuts and bolts, after assembly and inspection by the Engineer with a heavy-bodied bituminous mastic as approved by the Engineer.
- D. Buried Epoxy Coated Steel Couplings: Thoroughly coat all exterior surfaces, including nuts and bolts after assembly and inspection by the Engineer with a coal tar approved by the Engineer. Prior to coating, roughen the epoxy with emory paper and follow with a solvent cleaner (aeromatic similar to xylol). Dry film thickness of the coal tar is to be 12-16 mils.
- E. Install thrust rods, supports, and other provisions to properly support pipe weight and axial equipment loads.
- F. All interior sleeve interior couplings shall be restrained with tie rods when used on pressurized lines. All buried couplings on pressure lines shall be restrained (solid sleeve) type.

END OF SECTION