

SECTION 02470 – POTABLE WATER PIPE MATERIALS

(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Replace Section 02470 of the Standard Specifications except for the Section number and title with the following:

Description

02470.00 Scope - This Section includes the requirements for ductile iron, steel, and polyvinyl chloride (PVC) pipe 16 inches in diameter and smaller, for potable water systems.

Materials

02470.10 General - Clearly mark all pipe with the type, class, thickness, and manufacturer's name, as applicable. Use lettering that is legible and permanent under normal conditions of handling and storage. Ensure all Materials in contact with potable water conform to ANSI/NSF Standard 61, Drinking Water System Components - Health Effects, or equivalent, and ANSI/NSF Standard 372, Drinking Water System Components - Lead Content.

02470.20 Ductile Iron Pipe:

(a) **General** - Use centrifugally cast ductile iron pipe meeting the requirements of AWWA C151. Furnish ductile iron pipe having a cement-mortar lining and seal coating meeting the requirements of AWWA C104. Furnish Special Thickness Class 53 ductile iron pipe where joined using bolted flanged joints. Furnish Special Thickness Class 50 for all other ductile iron pipe, unless otherwise shown or specified.

(b) **Nonrestrained Joints** - Furnish nonrestrained joints that are rubber gasket, push-on type, or mechanical type meeting the requirements of AWWA C111.

(c) **Restrained Joints** - Furnish restrained joints according to 02475.50.

02470.31 High Density Polyethylene (HDPE) Pipe - Use HDPE pipe meeting the requirements of NSF/ANSI 61 and ANSI/AWWA C906, Standard Code Designation of PE4701, minimum cell classification PE 345464 C, D or E, and oxidative resistance classification CC3 according to ASTM D3350. Furnish all pipe with a minimum dimension ratio (DR) of 9 unless otherwise shown or specified. Furnish pipe that is iron pipe size (IPS) outside diameter or ductile iron pipe size (DIPS) outside diameter. Furnish pipe with color coding according to the APWA Uniform Color Code. Join pipe using thermal butt fusion method that meets the requirements of ASTM D3261.

02470.40 Polyvinyl Chloride (PVC) Pipe 4 Inches and Larger:

(a) PVC Pipe Smaller than 14-inch Diameter - Furnish PVC pipe 4 inches in diameter up to but not including 14 inches in diameter meeting the requirements of AWWA C900, have the same outside dimensions as ductile iron pipe, and having a minimum dimension ratio (DR) of 18 or as specified or indicated.

(b) Large Diameter PVC Pipe - Furnish PVC pipe 14 inches in diameter to 16 inches in diameter meeting the requirements of AWWA C905, having the same outside dimensions as ductile iron pipe, and having a minimum dimension ratio (DR) of 18 or as specified or indicated.

(c) Joints - Furnish joints meeting the requirements of ASTM D3139 using a restrained rubber gasket according to ASTM F477. Solvent-welded pipe joints are not allowed.

02470.45 Polyvinyl Chloride (PVC) Pipe Under 4 Inches - Furnish polyvinyl chloride (PVC) under 4 inches in diameter meeting the requirements of ASTM D2241. Furnish pipe Material that is PVC 1120, PVC 1220, or PVC 2120, and having a minimum wall thickness equal to or greater than a standard dimension ratio (SDR) of 21, or as specified or indicated. Furnish joints meeting the requirements of ASTM D3139 using a restrained rubber gasket meeting the requirements of ASTM F477. Solvent welded pipe joints will only be allowed when specified or indicated.

02470.50 Polyethylene Encasement - Ensure polyethylene encasement conforms to AWWA C105.

02470.60 Marking Tape and Wire:

(a) Marking Tape - Furnish marking tape consisting of inert polyethylene plastic impervious to all known alkalis, acids, chemical reagents and solvents likely to be encountered in the Soil. Furnish tape width as recommended by the manufacturer for the depth of installation. Furnish blue tape that is imprinted continuously over its entire length in permanent black ink with the words "Caution - Water".

(b) Detectable Marking Wire - Furnish detectable marking wire with blue colored insulation and according to 00445.11. Furnish splice kits according to 00445.48.

02470.70 Acceptance - Ductile iron, HDPE, and PVC pipe is accepted according to 00165.35 and this Section.