

SECTION 610

Case 17-12

Revised 9/5/17

610.4.5 Testing: Hydrostatic testing shall be in accordance with [Section 611](#). After pressure testing and before placing in service, all water lines shall be disinfected. Disinfection shall be accomplished in accordance with [Section 611](#). All corporation stops used for testing and chlorination shall be left in the pipe line with the stop closed and all connecting pipe removed.

610.5 SEPARATION:

610.5.1 General: Water lines and sewer lines shall be separated to protect water lines from contamination by sewer lines.

The angle of a water line and sewer line crossing shall be limited to between (45) forty-five degrees and (90) ninety degrees. Intersection angles of less than (45) forty-five degrees shall not be allowed.

Separation distances are measured from the outside diameter of the water or sewer line, or the centerline of a manhole.

When water and sewer lines cannot meet separation requirements, extra protection is required as described in Subsection [610.5.5](#) and shown in Standard Details 404-1, 404-2 and 404-3.

Extra protection requirements for line crossings are measured from the closest outside surfaces of the sewer and water line.

Water line service connections to individual building supply and distribution plumbing shall not be placed below sewer lines, and shall otherwise comply with the separation requirements of the applicable plumbing code as applied by the Agency (Administrative Authority). Methods described for extra protection do not apply to these service lines.

Water and sewer lines shall not be constructed parallel within a common trench.

610.5.2 Water Line Separation from Gravity Sewer Lines: Water lines shall not be placed within two (2) feet horizontal and one (1) foot vertical above and two (2) feet vertical below gravity sewer lines.

Extra protection is required where a water line is placed within six (6) feet horizontal and two (2) feet vertical above a gravity sewer line.

Extra protection is required where a water line is placed within six (6) feet horizontal and any distance below a gravity sewer line.

610.5.3 Water Line Separation from Pressurized Sewer Lines: Water lines shall not be placed within six (6) feet horizontal and within two (2) feet vertical below or within two (2) feet vertical above a pressurized sewer line.

Extra protection is required where a water line is placed within six (6) feet horizontal and within six (6) feet vertical above a pressurized sewer line.

Extra protection is required where a water line is placed within (6) feet horizontal and any distance below a pressurized sewer line.

610.5.4 Water Line Separation from Manholes: Water lines shall not pass through or come into contact with any part of a sewer manhole and shall be separated six (6) feet horizontal from the center of a sewer manhole.

610.5.5 Extra Protection: New water lines that require extra protection from new sewer lines, shall have extra protection provided by using ductile iron pipe (DIP) for both lines. Lines of standard pipe length shall be centered at the point of crossing so that no joints exist within six (feet) horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal.

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New carrier water or sewer lines may also be installed and encased within a new outside casing/pipe material made of steel, ductile iron pipe, PVC pipe or HDPE pipe as approved by the utility owner. The new protection casing shall be centered at the point of crossing so that no joints exist within (6) feet horizontal and the casing shall extend a minimum distance of ten (10) feet on each side of the other crossing utility being protected against, measured from the pipe's outside diameter.

New water lines that require extra protection from sewer lines, shall have identification wrap and/or tape installed on the water and sewer lines for the length that requires extra protection for each line.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line:

- (1) shall be reconstructed using a standard length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal, or
- (2) shall be encased in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.
- (3) shall be encased within a new outside casing/pipe material made of steel, ductile iron pipe, PVC pipe, HDPE pipe or a steel split casing as approved by the utility owner. The protection casing shall be centered at the point of crossing so that no joints exist within (6) feet horizontal and the casing shall extend a minimum distance of ten (10) feet on each side of the new water line utility being protected, measured from the pipe's outside diameter.

Existing water lines that require extra protection from new sewer lines shall provide for extra protection by:

- (1) constructing the new sewer line and reconstructing the existing water line using ductile iron pipe for both lines with standard pipe lengths centered at the point of crossing so that no joints exist within six (feet) horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
- (2) encasement of both the existing water line and the new sewer line in six (6) inches of concrete for the horizontal distance of the lines that require extra protection but for a distance no less than ten (10) feet horizontal.
- (3) Extra protection for existing ductile iron water lines can be met by the installation of restrained or mechanical joints on the existing water line within ten (10) feet horizontal of the crossing and either
 - (a) construction of new sewer line using a standard pipe length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
 - (b) encasement of the new sewer line in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.
 - (c) encasement of the new sewer line in a new outside casing/pipe material made of steel, ductile iron pipe, PVC pipe, HDPE pipe or a steel split casing as approved by the utility owner. The protection casing shall be centered at the point of crossing so that no joints exist within (6) feet horizontal and the casing shall extend a minimum distance of ten (10) feet on each side of the existing water line utility being protected, measured from the pipe's outside diameter.

610.6 POLYETHYLENE CORROSION PROTECTION:

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WATER LINE CONSTRUCTION

610.5 SEPARATION:

610.5.1 General: Water lines and sewer lines shall be separated to protect water lines from contamination by sewer lines.

The angle of a water line and sewer line crossing shall be limited to between (45) forty-five degrees and (90) ninety degrees. Intersection angles of less than (45) forty-five degrees shall not be allowed.

Separation distances are measured from the outside diameter of the water or sewer line, or the centerline of a manhole.

When water and sewer lines cannot meet separation requirements, extra protection is required as ~~described in Subsection 610.5.5 and~~ shown in Standard Details 404-1, 404-2 and 404-3 and described in Subsection 610.5.5.

Extra protection requirements for line crossings are measured from the closest outside surfaces of the sewer and water line.

Water line service connections to individual building supply and distribution plumbing shall not be placed below sewer lines, and shall otherwise comply with the separation requirements of the applicable plumbing code as applied by the Agency (Administrative Authority). Methods described for extra protection do not apply to these service lines.

Water and sewer lines shall not be constructed parallel within a common trench.

610.5.2 Water Line Separation from Gravity Sewer Lines: Water lines shall not be placed within two (2) feet horizontal and one (1) foot vertical above and two (2) feet vertical below gravity sewer lines.

Extra protection is required where a water line is placed within six (6) feet horizontal and two (2) feet vertical above a gravity sewer line.

Extra protection is required where a water line is placed within six (6) feet horizontal and ~~any distance~~ below a gravity sewer line.

610.5.3 Water Line Separation from Pressurized Sewer Lines: Water lines shall not be placed within six (6) feet horizontal and within two (2) feet vertical below or within two (2) feet vertical above a pressurized sewer line.

Extra protection is required where a water line is placed within six (6) feet horizontal and within six (6) feet vertical above a pressurized sewer line.

Extra protection is required where a water line is placed within (6) feet horizontal and ~~any distance~~ below a pressurized sewer line.

610.5.4 Water Line Separation from Manholes: Water lines shall not pass through or come into contact with any part of a sewer manhole and shall be separated six (6) feet horizontal from the center of a sewer manhole.

610.5.5 Extra Protection: New water lines that require extra protection from new sewer lines, shall have extra protection provided by installing each new line through an approved protective casing, concrete encasement, or by using ductile iron pipe for both lines.

Protective casings shall be of a material approved by the utility owner and installed centered on the point of crossing. Protective casings shall extend a minimum distance of ten (10) feet on each side of the crossing measured from the outside of the pipe.

When protective casings are not used lines Lines of standard pipe length shall be centered at the point of crossing so

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that no joints exist within six (feet) horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal.

New ductile iron water lines that require extra protection from sewer lines, shall have identification wrap and/or tape installed on the water and sewer lines for the length that requires extra protection for each line.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line:

- (1) shall be reconstructed using a standard length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal; ~~or~~
- (2) shall be encased in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal; ~~or~~
- (3) shall be reconstructed through an approved protective casing, the casing being centered on the point of crossing and extending a minimum distance of ten (10) feet on each side of the water line measured from the outside of the water line pipe.

Existing water lines that require extra protection from new sewer lines shall provide for extra protection by:

- (1) constructing the new sewer line and reconstructing the existing water line using ductile iron pipe for both lines with standard pipe lengths centered at the point of crossing so that no joints exist within six (feet) horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
 - (2) encasement of both the existing water line and the new sewer line in six (6) inches of concrete for the horizontal distance of the lines that require extra protection but for a distance no less than ten (10) feet horizontal.
 - (3) Extra protection for existing ductile iron water lines can be met by the installation of restrained or mechanical joints on the existing water line within ten (10) feet horizontal of the crossing and either
 - (a) construction of new sewer line using a standard pipe length of ductile iron pipe centered at the point of crossing so that no joints exist within six (6) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
 - (b) encasement of the new sewer line in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.
- (c) installing the new sewer line through an approved protective casing, the casing being centered on the point of crossing the water line and extending a minimum distance of ten (10) feet on each side of the water line measured from the outside of the water line pipe.

610.6 POLYETHYLENE CORROSION PROTECTION: