**Section 604.1410 Materials**

a) All materials, including ductile iron pipe, steel pipe, concrete pipe, plastic pipe, pipe liners, joints, fittings, valves and fire hydrants, must conform to the AWWA, ASTM, ANSI or NSF standards incorporated by reference at 35 Ill. Adm. Code 601.115.

b) Plastic Pipe

1) Plastic Pipe Specifications. Polyvinyl Chloride (PVC), Chlorinated Polyvinyl Chloride (CPVC), Molecularly Oriented Polyvinyl Chloride (PVCO) and Polyethylene (PE) must conform to NSF Standard 14, incorporated by reference in 35 Ill. Adm. Code 601.115.

2) PVC, CPVC, PVCO and PE pipe may be used for water mains in accordance with this Section.

A) PVC may be used for water mains in accordance with the following standards, incorporated by reference in 35 Ill. Adm. Code 601.115:

i) AWWA C900-07;

ii) ASTM D 1784-11;

iii) ASTM D 1785-15;

iv) ASTM D 2241-09.

B) PE pipe may be used for water mains in accordance with AWWA C906, incorporated by reference in 35 Ill. Adm. Code 601.115.

C) PVCO pipe may be used for water mains in accordance with AWWA C909, incorporated by reference in 35 Ill. Adm. Code 601.115.

D) CPVC pipe may be used for water mains in accordance with the following standards, incorporated by reference in 35 Ill. Adm. Code 601.115:

i) ASTM F 441/F 441M;

ii) ASTM F 442/F 442M;

iii) ASTM D 1784.

3) Jointing

A) Jointing must be pressure slip jointed, solvent welded, heat welded, flange or threaded joint.

B) Clean, dry contact surfaces are required when making solvent or heat welded joints. Adequate setting time must be allowed for maximum strength.

C) Elastomeric seals (gaskets) used for push-on joints must comply with ASTM F 477 and must be pressure rated in accordance with ASTM D 3139.

D) Solvent cement must be specific for the piping material and must comply with ASTM D 2564 for PVC and ASTM F 493 for CPVC and must comply with Section 604.105(f).

4) Plastic Pipe Fittings

A) PVC fabricated fittings, 4-inch through 60-inch, must conform to AWWA C900.

B) Polyethylene pressure pipe fitting, 4-inch through 63-inch, must conform to AWWA C906.

C) Injection-molded PVC pressure fittings, 4-inch through 12-inch, must conform to AWWA C907.

D) Schedule 40 or 80 PVC and CPVC pipe fittings must be of the same material as the pipe and must comply with ASTM Standards as follows:

i) ASTM D 2466 for PVC Schedule 40;

ii) ASTM D 2467 for PVC Schedule 80;

iii) ASTM D 2464 for threaded Schedule 80;

iv) ASTM F 438 for Socket-Type CPVC Schedule 40;

v) ASTM F 439 for CPVC Schedule 80; and

vi) ASTM F 437 for threaded CPVC Schedule 80.

E) Plastic fitting material must conform to ANSI/NSF Standard 14 and comply with Section 604.105(f).

F) All fittings must bear the NSF seal of approval.

c) Protection from Organic Compounds

1) When distribution systems are installed in areas contaminated by organic compounds:

A) pipe and joint materials must be protected; and

B) protection must extend at least 25 feet laterally from the areas contaminated by organic compounds.

2) Where distribution systems are installed within 25 feet of potential sources of organic compound contamination, including any unit at a facility or a site that stores or accumulates petroleum at any time above ground or below ground, pipe and joint materials must be protected from organic compounds.

3) Protection from organic compounds may include the following:

A) use of ductile iron pipe with a Viton® or nitrile gasket~~s~~, unless otherwise approved by the Agency under Section 604.145(b);

B) remediation;

C) use of steel pipe;

D) encasement of the pipe; and

E) secondary containment of the source.