

## Chapter 8 Hose Houses and Equipment

### 8.1 General.

**8.1.1\*** A supply of hose and equipment shall be provided where hydrants are intended for use by plant personnel or a fire brigade.

**8.1.1.1** The quantity and type of hose and equipment shall depend on the following:

- (1) Number and location of hydrants relative to the protected property
- (2) Extent of the hazard
- (3) Fire-fighting capabilities of potential users

**8.1.1.2** The authority having jurisdiction shall be consulted regarding quantity and type of hose.

**8.1.2** Hose shall be stored so it is accessible and is protected from the weather by storing in hose houses or by placing hose reels or hose carriers in weatherproof enclosures.

**8.1.3\*** Hose shall conform to NFPA 1961.

### 8.1.4 Hose Connections.

**8.1.4.1** Hose connections shall have external national hose standard (NHS) threads, for the valve size specified, in accordance with NFPA 1963.

**8.1.4.2** Hose connections shall be equipped with caps to protect the hose threads.

**8.1.4.3** Where local fire department hose threads do not conform to NFPA 1963, the authority having jurisdiction shall designate the hose threads to be used.

### 8.2 Location.

**8.2.1** Where hose houses are utilized, they shall be located over, or immediately adjacent to, the hydrant.

**8.2.2** Hydrants within hose houses shall be as close to the front of the house as possible and still allow sufficient room in back of the doors for the hose gates and the attached hose.

**8.2.3** Where hose reels or hose carriers are utilized, they shall be located so that the hose can be brought into use at a hydrant.

### 8.3 Construction.

**8.3.1** Hose houses shall be of substantial construction on foundations.

**8.3.2** The construction shall protect the hose from weather and vermin and shall be designed so that hose lines can be brought into use.

**8.3.3** Clearance shall be provided for operation of the hydrant wrench.

**8.3.4** Ventilation shall be provided.

**8.3.5** The exterior shall be painted or otherwise protected against deterioration.

**8.4\* Size and Arrangement.** Hose houses shall be of a size and arrangement that provide shelves or racks for the hose and equipment.

**8.5 Marking.** Hose houses shall be plainly identified.

### 8.6 General Equipment.

**8.6.1\*** Where hose houses are used in addition to the hose, each shall be equipped with the following:

- (1) Two approved adjustable spray-solid stream nozzles equipped with shutoffs for each size of hose provided
- (2) One hydrant wrench (in addition to wrench on hydrant)
- (3) Four coupling spanners for each size hose provided
- (4) Two hose coupling gaskets for each size hose

**8.6.2** Where two sizes of hose and nozzles are provided, reducers or gated wyes shall be included in the hose house equipment.

**8.7 Domestic Service Use Prohibited.** The use of hydrants and hose for purposes other than fire-related services shall be prohibited.

## Chapter 9 Master Streams

**9.1\* Master Streams.** Master streams shall be delivered by monitor nozzles, hydrant-mounted monitor nozzles, and similar master stream equipment capable of delivering more than 250 gpm (946 L/min).

**9.2 Application and Special Considerations.** Master streams shall be provided as protection for the following:

- (1) Large amounts of combustible materials located in yards
- (2) Average amounts of combustible materials in inaccessible locations
- (3) Occupancies presenting special hazards, as required by the authority having jurisdiction

## Chapter 10 Underground Piping

### 10.1\* Piping Materials.

**10.1.1\* Listing.** Piping shall be listed for fire protection service or shall comply with the standards in Table 10.1.1.

**Table 10.1.1 Manufacturing Standards for Underground Pipe**

Materials and Dimensions	Standard
<b>Ductile Iron</b>	
<i>Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water</i>	AWWA C104
<i>Polyethylene Encasement for Ductile Iron Pipe Systems</i>	AWWA C105
<i>Ductile Iron and Gray Iron Fittings, 3 in. Through 48 in., for Water and Other Liquids</i>	AWWA C110
<i>Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings</i>	AWWA C111
<i>Flanged Ductile Iron Pipe with Ductile Iron or Gray Iron Threaded Flanges</i>	AWWA C115
<i>Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service</i>	AWWA C116
<i>Thickness Design of Ductile Iron Pipe</i>	AWWA C150
<i>Ductile Iron Pipe, Centrifugally Cast for Water</i>	AWWA C151





Table 10.1.1 Continued

Materials and Dimensions	Standard
<i>Ductile-Iron Compact Fittings for Water Service Standard for the Installation of Ductile Iron Water Mains and Their Appurtenances</i>	AWWA C153 AWWA C600
<b>Steel</b>	
<i>Steel Water Pipe 6 in. and Larger</i>	AWWA C200
<i>Coal-Tar Protective Coatings and Linings for Steel Water Pipelines Enamel and Tape — Hot Applied</i>	AWWA C203
<i>Cement-Mortar Protective Lining and Coating for Steel Water Pipe 4 in. and Larger — Shop Applied</i>	AWWA C205
<i>Field Welding of Steel Water Pipe</i>	AWWA C206
<i>Steel Pipe Flanges for Waterworks Service — Sizes 4 in. Through 144 in.</i>	AWWA C207
<i>Dimensions for Fabricated Steel Water Pipe Fittings</i>	AWWA C208
<i>A Guide for Steel Pipe Design and Installation</i>	AWWA M11
<b>Concrete</b>	
<i>Reinforced Concrete Pressure Pipe, Steel-Cylinder Type</i>	AWWA C300
<i>Prestressed Concrete Pressure Pipe, Steel-Cylinder Type</i>	AWWA C301
<i>Reinforced Concrete Pressure Pipe, Non-Cylinder Type</i>	AWWA C302
<i>Reinforced Concrete Pressure Pipe, Steel-Cylinder Type, Pretensioned</i>	AWWA C303
<i>Standard for Asbestos-Cement Distribution Pipe, 4 in. Through 16 in., for Water Distribution Systems</i>	AWWA C400
<i>Standard for the Selection of Asbestos-Cement Pressure Pipe</i>	AWWA C401
<i>Cement-Mortar Lining of Water Pipe Lines 4 in. and Larger — in Place</i>	AWWA C602
<i>Standard for the Installation of Asbestos-Cement Water Pipe</i>	AWWA C603
<b>Plastic</b>	
<i>Polyvinyl Chloride (PVC) Pressure Pipe, 4 in. Through 12 in., for Water Distribution</i>	AWWA C900
<i>Polyvinyl Chloride (PVC) Pressure Pipe, 14 in. Through 48 in., for Water Distribution</i>	AWWA C905
<i>Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) Through 63 in. (1575 mm) for Water Distribution</i>	AWWA C906
<b>Copper</b>	
<i>Specification for Seamless Copper Tube</i>	ASTM B 75
<i>Specification for Seamless Copper Water Tube</i>	ASTM B 88
<i>Requirements for Wrought Seamless Copper and Copper-Alloy Tube</i>	ASTM B 251

**10.1.2 Steel Pipe.** Steel piping shall not be used for general underground service unless specifically listed for such service.

**10.1.3 Steel Pipe Used with Fire Department Connections.** Where externally coated and wrapped and internally galvanized, steel pipe shall be permitted to be used between the check valve and the outside hose coupling for the fire department connection.

**10.1.4\* Pipe Type and Class.** The type and class of pipe for a particular underground installation shall be determined through consideration of the following factors:

- (1) Fire resistance of the pipe
- (2) Maximum system working pressure
- (3) Depth at which the pipe is to be installed
- (4) Soil conditions
- (5) Corrosion
- (6) Susceptibility of pipe to other external loads, including earth loads, installation beneath buildings, and traffic or vehicle loads

**10.1.5\* Working Pressure.** Piping, fittings, and other system components shall be rated for the maximum system working pressure to which they are exposed but shall not be rated at less than 150 psi (10 bar).

#### 10.1.6\* Lining of Buried Pipe.

**10.1.6.1** Unless the requirements of 10.1.6.2 are met, all ferrous metal pipe shall be lined in accordance with the applicable standards in Table 10.1.1.

**10.1.6.2** Steel pipe utilized in fire department connections and protected in accordance with the requirements of 10.1.3 shall not be required to be internally lined.

#### 10.2 Fittings.

**10.2.1\* Buried Fittings.** Fittings shall be of an approved type with joints and pressure class ratings compatible with the pipe used.

##### 10.2.2 Standard Fittings.

**10.2.2.1** Fittings shall meet the standards in Table 10.2.2.1 or shall be in accordance with 10.2.3.

**10.2.2.2** In addition to the standards in Table 10.2.2.2, CPVC fittings shall also be in accordance with 10.2.3 and with the portions of the ASTM standards specified in Table 10.2.2.2 that apply to fire protection service.

**10.2.3 Special Listed Fittings.** Other types of fittings investigated for suitability in automatic sprinkler installations and listed for this service, including, but not limited to, polybutylene, CPVC, and steel differing from that provided in Table 10.2.2.1, shall be permitted when installed in accordance with their listing limitations, including installation instructions.

**10.2.4 Pressure Limits.** Listed fittings shall be permitted for the system pressures as specified in their listings, but not less than 150 psi (10 bar).

#### 10.3 Joining of Pipe and Fittings.

**10.3.1\* Buried Joints.** Joints shall be approved.

**10.3.2 Threaded Pipe and Fittings.** All threaded steel pipe and fittings shall have threads cut in accordance with ASME B1.20.1.

**10.3.3\* Groove Joining Methods.** Pipes joined with grooved fittings shall be joined by a listed combination of fittings, gaskets, and grooves.

**10.3.4 Brazed and Pressure Fitting Methods.** Joints for the connection of copper tube shall be brazed or joined using pressure fittings as specified in Table 10.2.2.1.

**10.3.5 Other Joining Methods.** Other joining methods listed for this service shall be permitted where installed in accordance with their listing limitations.