

## SPRINKLER PROTECTION BASICS: PIPING MATERIALS

### STEEL PIPING

- **ASTM A795**, Specification for Black and Hot-dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use.
- **ANSI/ASTM A53**, Specification for Welded and Seamless Steel Pipe.
- **ANSI B36.10M**, Specification for Wrought Steel Pipe.
- **ASTM A135**, Specification for Electric-resistance Welded Steel Pipe.

### COPPER TUBE

- **ASTM B75**, Specification for Seamless Copper Tube.
- **ASTM B88**, Specification for Seamless Copper Water Tube.
- **ASTM B251**, Specification for General Requirements for Wrought Seamless Copper and Copper-alloy Tube.
- **AWS A5.8**, Brazing Filler Metal (Classification BCuP-3 or BCuP-4).
- **ASTM B32**, Solder Metal, 95-5 (Tin-antimony-grade 95TA).
- **ASTM B813**, Fluxes for Soldering Applications of Copper and Copper Alloy Tube.

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### OTHER LISTED PIPING MATERIALS PERMITTED:

- CPVC
- Light-wall steel piping

### GENERAL PIPING MATERIAL REQUIREMENTS:

- Piping/tubing materials required to withstand a minimum working pressure of 175 psi.
- Minimum wall thickness for steel pipe joined by welding or rolled grooved pipe:
  - **Schedule 10** for 5 inch or smaller pipe.
  - 0.134 inches for 6 inch pipe.
  - 0.188 inches for 8 and 10 inch pipe.
  - Pressure rating: **300 psi**.
- Minimum wall thickness for steel pipe joined by threading or cut grooved pipe:
  - **Schedule 40** for 6 inch or less pipe.
  - Schedule 30 for 8 inch and larger pipe.
  - Pressure rating: 300 psi.
- Copper tube required to be Type K, L or M.
- Pipe bending permitted.
- Piping used required to be continuously marked with manufacturer's name and schedule or product designation.

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## SCHEDULE 10 AND SCHEDULE 40 STEEL PIPE

PIPE SIZE	OUTSIDE DIAMETER	INSIDE DIAMETER	
		SCHEDULE 10	SCHEDULE 40
1	1.315 inches	1.097 inches	1.049 inches
1-1/4	1.660 inches	1.442 inches	1.380 inches
1-1/2	1.900 inches	1.682 inches	1.610 inches
2	2.375 inches	2.157 inches	2.067 inches
2-1/2	2.875 inches	2.635 inches	2.469 inches
3	3.500 inches	3.260 inches	3.068 inches
3-1/2	4.000 inches	3.760 inches	3.548 inches
4	4.500 inches	4.260 inches	4.026 inches
5	5.563 inches	5.295 inches	5.047 inches
6	6.625 inches	6.357 inches (0.134 inch wall thickness)	6.065 inches
8	8.625 inches	8.249 inches (0.188 inch wall thickness)	8.071 inches (Schedule 30)

**Note:** 3-1/2 inch and 5 inch steel pipe are no longer manufactured. Information on these pipe sizes has been provided because these pipe size may have been utilized in existing systems.

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