PIPE ROUGHNESS COEFFICIENTS
("C" FACTOR)

Pipe Roughness Coefficients	
Type of Piping Material	"C" Factor
Unlined Cast/Ductile Iron Pipe	100
Cement-Lined Cast/Ductile Iron Pipe	140
Steel Pipe (Dry Systems/Pre-action Systems)	100
Steel Pipe (Wet Systems/Deluge Systems)	120
Galvanized Steel Pipe	120
Plastic Tubing	150
Copper Tubing	150

Note 1: Unlined cast iron and unlined ductile iron pipe is no longer manufactured. Hence, all new ductile iron pipe will be cement-lined pipe.

Note 2: Oxygen causes corrosion in steel pipe. Wet systems constructed using steel pipe have a higher "C" factor than dry systems because once the oxygen in the water in a wet system is depleted by corrosion, the corrosion of the pipe interior surfaces stops. Dry systems are filled with air (which contains oxygen) and constantly leak air. Hence, dry systems are provided with an air compressor which maintains the air pressure required to maintain the dry pipe valve in the closed position. Whenever the air compressor runs, new oxygen is introduced into the piping system. Hence, more corrosion of the pipe interior occurs in a dry system than in a wet system. Given this, the "C" factor for a dry pipe system is lower than the "C" factor for a wet system. (A lower "C" factor means rougher interior pipe surfaces.)

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