

Specification	Pipe class	Longitudinal joint factor (E)
ASTM A 106 .....	Seamless .....	1.00
ASTM A 333/A 333M .....	Seamless .....	1.00
	Electric resistance welded .....	1.00
ASTM A 381 .....	Double submerged arc welded .....	1.00
ASTM A 671 .....	Electric-fusion-welded .....	1.00
ASTM A 672 .....	Electric-fusion-welded .....	1.00
ASTM A 691 .....	Electric-fusion-welded .....	1.00
API 5 L .....	Seamless .....	1.00
	Electric resistance welded .....	1.00
	Electric flash welded .....	1.00
	Submerged arc welded .....	1.00
	Furnace butt welded .....	.60
Other .....	Pipe over 4 inches (102 millimeters) .....	.80
Other .....	Pipe 4 inches (102 millimeters) or less .....	.60

If the type of longitudinal joint cannot be determined, the joint factor to be used must not exceed that designated for "Other."

[Amdt. 192-37, 46 FR 10159, Feb. 2, 1981, as amended by Amdt. 192-51, 51 FR 15335, Apr. 23, 1986; Amdt. 192-62, 54 FR 5627, Feb. 6, 1989; 58 FR 14521, Mar. 18, 1993; Amdt. 192-85, 63 FR 37502, July 13, 1998; Amdt. 192-94, 69 FR 32894, June 14, 2004]

**§ 192.115 Temperature derating factor (T) for steel pipe.**

The temperature derating factor to be used in the design formula in § 192.105 is determined as follows:

Gas temperature in degrees Fahrenheit (Celsius)	Temperature derating factor (T)
250 °F (121 °C) or less .....	1.000
300 °F (149 °C) .....	0.967
350 °F (177 °C) .....	0.933
400 °F (204 °C) .....	0.900
450 °F (232 °C) .....	0.867

For intermediate gas temperatures, the derating factor is determined by interpolation.

[35 FR 13257, Aug. 19, 1970, as amended by Amdt. 192-85, 63 FR 37502, July 13, 1998]

**§ 192.117 [Reserved]**

**§ 192.119 [Reserved]**

**§ 192.121 Design of plastic pipe.**

Subject to the limitations of § 192.123, the design pressure for plastic pipe is determined in accordance with either of the following formulas:

$$P = 2S \frac{t}{(D - t)} 0.32$$

$$P = \frac{2S}{(SDR - 1)} 0.32$$

Where:

P=Design pressure, gauge, kPa (psig).

S = For thermoplastic pipe, the HDB is determined in accordance with the listed specification at a temperature equal to 73 °F (23 °C), 100 °F (38 °C), 120 °F (49 °C), or 140 °F (60 °C). In the absence of an HDB established at the specified temperature, the HDB of a higher temperature may be used in determining a design pressure rating at the specified temperature by arithmetic interpolation using the procedure in Part D.2. of PPI TR-3/2004, *HDB/PDB/SDB/MRS Policies* (incorporated by reference, see § 192.7). For reinforced thermosetting plastic pipe, 11,000 psig (75,842 kPa).

t=Specified wall thickness, mm (in).

D=Specified outside diameter, mm (in).

SDR=Standard dimension ratio, the ratio of the average specified outside diameter to the minimum specified wall thickness, corresponding to a value from a common numbering system that was derived from the American National Standards Institute preferred number series 10.

[Amdt. 192-78, 61 FR 28783, June 6, 1996, as amended by Amdt. 192-85, 63 FR 37502, July 13, 1998; Amdt. 192-94, 69 FR 32894, June 14, 2004; Amdt. 192-103, 71 FR 33407, June 9, 2006]

**§ 192.123 Design limitations for plastic pipe.**

(a) Except as provided in paragraph (e) of this section, the design pressure may not exceed a gauge pressure of 100 psig (689 kPa) for plastic pipe used in:

- (1) Distribution systems; or
- (2) Classes 3 and 4 locations.