ASTM F441 Schedule 80 CPVC Pipe

Dimensions & 23°C Water Pressure Rating Chart

Reference scope: Schedule 80 CPVC pressure pipe. Dimensional and 23°C water-pressure values are presented for engineering/procurement reference in relation to ASTM F441/F441M-23. Temperature derating values are manufacturer engineering references for water service, not mandatory ASTM F441 values.

Schedule 80 CPVC Dimensions & Baseline Water Pressure

NPS / DN	OD (in)	OD (mm)	Min Wall (in)	Min Wall (mm)	Calc. ID* (mm)	23°C Pressure (psi)	23°C Pressure (bar)
1/4" / DN8	0.540	13.72	0.119	3.02	7.67	1,130	77.9
3/8" / DN10	0.675	17.14	0.126	3.20	10.74	920	63.4
1/2" / DN15	0.840	21.34	0.147	3.73	13.87	850	58.6
3/4" / DN20	1.050	26.67	0.154	3.91	18.85	690	47.6
1" / DN25	1.315	33.40	0.179	4.55	24.31	630	43.4
1-1/4" / DN32	1.660	42.16	0.191	4.85	32.46	520	35.9
1-1/2" / DN40	1.900	48.26	0.200	5.08	38.10	470	32.4
2" / DN50	2.375	60.32	0.218	5.54	49.25	400	27.6
2-1/2" / DN65	2.875	73.02	0.276	7.01	59.00	420	29.0
3" / DN80	3.500	88.90	0.300	7.62	73.66	370	25.5
4" / DN100	4.500	114.30	0.337	8.56	97.18	320	22.1
6" / DN150	6.625	168.27	0.432	10.97	146.33	280	19.3
8" / DN200	8.625	219.07	0.500	12.70	193.67	250	17.2
10" / DN250	10.750	273.05	0.593	15.06	242.93	230	15.9
12" / DN300	12.750	323.85	0.687	17.45	288.95	230	15.9

* Calculated ID = nominal OD - 2 x minimum wall thickness. Actual ID varies with allowable manufacturing tolerances.

Engineering Notes

Pressure basis: 23°C values apply to unthreaded, plain-end water service under non-shock conditions. System pressure may be lower due to fittings, valves, flanges, threaded joints, chemical media, surge, or other system limits.

Temperature service: Elevated-temperature operation requires pressure derating. Actual factors vary by material formulation and piping-system manufacturer.

Units: ASTM F441/F441M treats inch-pound and SI values as separate standards. Metric values here are arithmetic conversions for procurement convenience and should not be the sole basis for conformance.

Reference formula: PT = P23 x FT

Temperature Derating Reference - Water Service

Operating Temp.	Ref. Factor	2" SCH80 Example (psi / bar)
73.4°F / 23°C	1.00	400 / 27.6
90°F / 32°C	0.91	364 / 25.1
100°F / 38°C	0.82	328 / 22.6
120°F / 49°C	0.65	260 / 17.9
140°F / 60°C	0.50	200 / 13.8
160°F / 71°C	0.40	160 / 11.0
180°F / 82°C	0.25	100 / 6.9
200°F / 93°C	0.20	80 / 5.5

Manufacturer reference values. Verify current system manufacturer data before design use.

This XYSJ technical sheet is for engineering/procurement reference only and is not an ASTM publication or certification. Contractual compliance must be verified against a licensed copy of ASTM F441/F441M-23 and the selected manufacturer's current technical data.

© 2026 XYSJ

All rights reserved.