

STANDARDS

CPVC PIPES			CPVC FITTINGS		
Class of Pipe	Standard	Sizes available	Class of Fitting	Standard	Sizes available
Class-1/SDR-11	IS:15778 ASTM D 2846	½" – 2"	SDR – 11	ASTM D 2846	½" – 2"
Class-2/SDR-13.5	IS:15778:2007 ASTM D 2846	½" – 2"	SCH-40	ASTM F 438	2 1/2" – 4"
SCH-40	ASTM F 441	2 1/2" – 8"	SCH-80	ASTM F 439	2 1/2" – 8"
SCH-80	ASTM F 441	2 ½" – 8"	Solvent Cement	ASTM F 493	

Threads as per IS 554

TECHNICAL DETAILS

Dimensional detail of SDR-11 (Class-1) and SDR -13.5 (Class – 2) CPVC Pipes Conforming to IS: 15778:2007

Sr. No.	Size(mm)	Outside Diameter(mm)		Tolerance	Min. Wall thickness(mm)	
		Min.	Max.		SDR- 11	SDR – 13.5
1	15 (1/2")	15.80	16.00	± 0.08	1.70	1.40
2	20 (3/4")	22.20	22.40	± 0.08	2.00	1.70
3	25 (1")	28.40	28.80	± 0.08	2.60	2.10
4	32 (1-1/4")	34.70	35.10	± 0.08	3.20	2.60
5	40 (1-1/2")	41.10	41.50	± 0.10	3.80	3.10
6	50 (2")	54.30	54.70	± 0.10	4.90	4.00

DIMENSION DETAIL OF SCH - 40 & SCH - 80 CPVC PIPES AS PER ASTM F 441

Nominal Size		Average O.D. (mm)		Tolerance	Min. Wall Thickness (mm)	
		SCH 40	SCH-80		SCH-40	SCH-80
2 1/2"	65	73.00	73.00	±0.18	5.16	7.01
3"	80	88.90	88.90	±0.20	5.49	7.62
4"	100	114.30	114.30	±0.23	6.02	8.56
6"	150	168.30	168.30	±0.28	7.11	10.97
8"	200	219.10	219.10	±0.38	8.18	12.70

WORKING PRESSURE DETAIL OF SDR - 11 & SDR - 13.5 CPVC PIPE

Pressure vs. Temperature rating Chart for CPVC 4120 as per ASTM D 2846

Operating Temperature		27°C	32°C	38°C	43°C	49°C	54°C	60°C	66°C	71°C	77°C	82°C	93°C
1/2" , 3/4" , 1"	SDR -11	27.60	25.12	22.65	20.30	18.00	15.90	13.80	12.50	11.04	9.00	6.80	5.52
1 1/4" , 1 1/2" , & 2"	SDR-13.5	21.80	19.80	17.90	16.05	14.20	12.55	10.90	9.81	8.72	7.09	5.50	4.36

Pressure in (Kg/cm²)

Note: The above pressure rating does not reflect the superior pressure ratings available for Flowline Plus system. Ajay recommends that these pressure ratings only be used till the upgraded material is incorporated in the relevant standards.

WORKING PRESSURE DETAIL OF SCH-40 & SCH - 80 PIPE

Pressure vs. Temperature rating Chart for CPVC 4120 as per ASTM F 441

		Temperature (°C)											
Class	Size mm(Inch)	27°C	32°C	38°C	43°C	49°C	54°C	60°C	66°C	71°C	77°C	82°C	93°C
SCH -40	65 (2-1/2")	21.09	19.19	17.3	16.2	13.71	13.08	10.55	9.91	8.44	6.75	5.27	4.22
	80 (3")	18.28	16.64	14.99	14.1	11.88	11.33	9.14	8.59	7.31	5.85	4.57	3.66
	100 (4")	15.47	14.08	12.68	11.9	10.05	9.59	7.73	7.27	6.19	4.95	3.87	3.09
	150(6")	12.66	11.52	10.38	9.74	8.23	7.85	6.33	5.95	5.06	4.05	3.1	2.53
	200(8")	11.2	10.19	9.18	9.18	7.28	7.28	5.6	5.6	4.48	4.48	2.8	2.24
SCH-80	65(2-1/2")	29.53	26.87	24.21	22.7	19.19	18.31	14.77	13.88	11.81	9.45	7.38	5.91
	80(3")	26.01	23.67	21.33	20	16.91	16.13	13.01	12.23	10.41	8.32	6.5	5.2
	100(4")	22.5	20.47	18.45	17.3	14.62	13.95	11.25	10.57	9	7.2	5.62	4.5
	150(6")	19.69	17.91	16.41	15.2	12.8	12.21	9.84	9.25	7.87	6.3	4.32	3.94
	200(8")	17.5	15.75	14.35	14.4	11.38	11.38	8.75	8.75	7	7	4.38	3.5

Pressure in (Kg/cm²)

Note : The above pressure ratings does not reflect the superior pressure ratings available for Flowline Plus systems.

Ajay recommends that these pressure ratings only be used till the upgraded material is incorporated in the relevant standards.

BASIC PROPERTIES OF CPVC

BASIC PHYSICAL PROPERTIES				
PROPERTY	TEST	CONDITION	ENGLISH UNITS	SI UNITS

GENERAL				
Specific Gravity	ASTM D 792	23°C	1.55	1.55
Specific Volume		23°C	0.645 Cm ³ / g	0.645 Cm ³ / g
Water Absorption	ASTM D 570	23°C	+0.03%	+0.03%
		100°C	+0.55%	+0.55%
Rockwell Hardness	ASTM D785	23°C	119	
Cell Class	ASTM D 1784		23447	
MECHANICAL				
Izod Impact	ASTM D 256	23°C	1.5 ft lbs/in o.n.	80 j/m o.n.
Tensile strength	ASTM D 638	23°C	8000 psi	55 N/mm ²
Tensile Modulus	ASTM D 638	23°C	360,000 psi	2500 N/mm ²
Flexural Strength	ASTM D 790	23°C	15,100 psi	104 N/mm ²
Flexural Modulus	ASTM D 790	23°C	415,000 psi	2860 N/mm ²
Compressive strength	ASTM D 695	23°C	10,100 psi	70 N/mm ²
Compressive Modulus	ASTM D 695	23°C	196,000 psi	1350 N/mm ²
THERMAL				
Coefficient of Thermal Expansion	ASTM D 696			6.1x10 ⁻⁵ m/m/k
Thermal Conductivity	ASTM C 177			0.14 Wm/k/m ²
Heat Distortion Temperature	ASTM D 648			103° c
Heat Capacity	DSC	23°c		0.90 j/gk
		100°c		1.10 J/gk.
FLAMMABILITY				
Flammability Rating	UL 94	0.062 in/0.157cm	V-0 , 5VB , 5VA	
Flame Speed	ASTM E84		15	
Smoke developed	ASTM E84		70-125	
Limiting Oxygen Index	ASTM D 2863		60%	
ELECTRICAL				
Dielectric Strength	ASTM D 147		1250 V/mil	4,92000 V/cm
Dielectric Constant	ASTM D 150	60 Hz,-1°c	3.7	3.7
Power Factor	ASTM D 150	1000 Hz	0.007 %	0.007 %
Volume Resistivity	ASTM D 257	23°c	3.4x10 ¹⁵ ohm/cm	3.4x10 ¹⁵ ohm/cm