AL RAJHI الراجحي

C-PVC PIPES

FOR HOT AND COLD WATER

Manufacturing Standards

ASTM F441 American Society for Testing & Material

DIN 8079 German Standard

GENERAL PROPERTIES

MATERIAL

Chlorinated Polyvinyl Chloride (CPVC)

GENERAL PROPERTIES	
a. Specific Gravity	1.56 gm/cm^3
b. Water Absorption	7 gm/cm^2
c. Flammability	will not support combustion

THERMAL PROPERTIES	
a. Softening Point	93°C
b. Coefficient of Linear Expansion	5.3 x 10^{-5} °C

MECHANICAL PROPERTIES	
a. Ultimate Tensile Strenght	575 kgf/cm^2
b. Flexural Strenght	1018 kgf/cm^2
c. Impact Strenght	11 joules

ELECTRICAL PROPERTIES	
a. Volume Resistivity	10^{14} ohm/cm
b. Surface Resistivity	10^{12} ohm/cm
c. Power Factor (at 10 cycles)	3.0

CPVC is a non-conductor of electricity and also non-subject to galvanic or electrolytic attack. Electrical equipments should not be earthened to (CPVC) pipes.

COLOUR	Dusty Grey and Light Ivory

Al-Rajhi Pipes is a leading supplier of CPVC pipes and fittings in the Gulf region, offering a comprehensive range of sizes that comply with the ASTM F441 and DIN 8079 standards. With a strong commitment to quality and excellence, Al-Rajhi Pipes provides reliable CPVC piping solutions for various applications. In addition to their wide selection of pipes, they also supply high-quality CPVC fittings, ensuring a complete and integrated piping system. With their dedication to customer satisfaction and extensive distribution network, Al-Rajhi Pipes is the trusted source for CPVC pipes and fittings across the Guf region.

What is cPVC?

Chlorinated Polyvinyl Chloride (CPVC) is chlorinated Pvc and has become an important engineering thermoplastic due to its relatively low cost, high heat distortion temperature, chemical inertness, and outstanding mechanical,dielectric, flame and smoke properties.

CPVC supplied by Al-RAJHI. A full range of CPVC pipes are produced according to American Standards (ASTM F441) and Metric Standards (DIN 8079 / 8080).

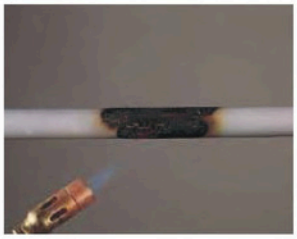
Benefits of CPVC

CPVC is the most superior plastic alternative to Polypropylene, PEX, Polyethylene and other plastic and much more superior to metal alternatives with respect to.

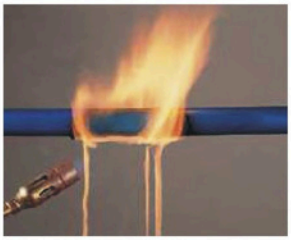
- Heat resistance up to 90°C
- Chemical resistance over a broad temperature range
- Long term proven service performance of more than 50 years
- Lower installed cost
- Suitable for potable water and can be produced with NSF or WRAS approved grade
- Does not sustain burning.

CPVC advantage over Polypropylene

- Same flow rate with smaller pipe size
- Ease of installation (overhead lines, confined spaces)
- No need for expensive electrical tools and source
- Lower thermal expansion
- Wider support spacing, less "looping" of pipe
- Less heat loss
- Chemical resistance to acids and alkalis
- Low bacteria build up
- No oxygen permeation to corrode metal components
- Low flame spread
- Low smoke generation
- Self-extinguishing
- No flaming drips.



CPVC
- initially when torch is applied



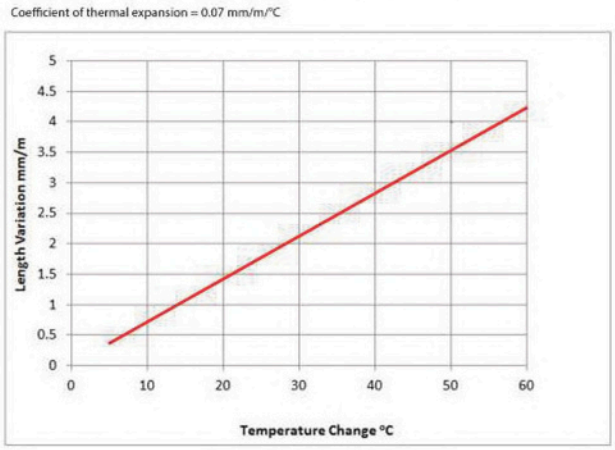
Other Plastics
- initially when torch is applied

CPVC
- After torch is removed

Other Plastics
- After torch is removed

CPVC pipe length variation due to temperature change (°C)

Temperature Change (°C)	Length Variation mm/meter
5	0.35
10	0.7
15	1.05
20	1.4
25	1.75
30	2.1
35	2.45
40	2.8
45	3.15
50	3.5
55	3.85
60	4.2



CPVC pipes according to ASTM F 441

Nominal Size inch	Outside diameter (mm)		Schedule 80 Minimum Wall Thickness		Normal Weight kg/m	Water Pressure Rating	
	Inch	mm	Inch	mm		Psi	Bar
1/4	0.540	13.7	0.119	3.02	0.230	1130	77.8
1/2	0.840	21.34	0.147	3.73	0.337	850	58.6
3/4	1.050	26.67	0.154	3.91	0.457	690	47.6
1	1.315	33.40	0.179	4.55	0.671	630	43.4
11/4	1.660	42.20	0.191	4.85	0.928	520	35.9
11/2	1.900	48.30	0.200	5.08	1.13	470	32.4
2	25.375	60.33	0.218	5.54	1.56	400	27.6
3	3.500	88.9	0.300	7.62	2.9	370	25.5
4	4.500	114.3	0.337	9.52	4.3	320	22.1
6	6.625	168.3	0.432	10.97	8.1	280	19.3

pressure rating applies for Water at 23 °C and for unthreaded pipes

CPVC Pipes according to DIN 8079

Nominal Size mm	Pressure Rating at 20 °C					
	PN16		PN20		PN25	
	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m	Wall Thickness (mm)	Weight kg/m
16	1.2	0.100	1.5	0.118	1.8	0.136
20	1.5	0.151	1.9	0.183	2.3	0.217
25	1.9	0.234	2.3	0.379	2.8	0.326
32	2.4	0.379	3.0	0.455	3.6	0.534
40	3.0	0.582	3.7	0.701	4.5	0.830
50	3.7	0.896	4.6	1.090	5.6	1.290
63	4.7	1.430	5.8	1.720	7.0	2.020
75	5.6	2.020	6.9	2.420	8.4	2.880
90	6.7	2.880	8.2	3.460	10.0	4.100
110	8.2	4.310	10.0	5.130	12.3	6.160

Length: 5.8 and 6 meters | Colour: Beige
Socket Type: Plain *Non standard lengths and colour are available on request.