CPVC Pipes and Fittings

Jain Plumbing™

Install Peace of Mind !

CPVC FITTINGS

ASTM D 2846

For SCH 80 Fittings ASTM F439

JAIN®

Jain Irrigation Systems Ltd.

Small Ideas. Big Revolutions.®

India's largest Polymer processors

cPVC Pipes and Fittings

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Jain Irrigation Systems Ltd. (JISL) derives its name from the pioneering work it did for the Micro Irrigation Industry in India. However, there is more to Jain Irrigation than Irrigation. Jain Piping Division is the largest producer of Thermoplastic piping systems for all conceivable applications with pipes ranging from 3 mm to 1600 mm in diameter and in different pressure ratings. JISL has a production capacity of over 3,00,000 M.T. per annum. JISL is the only manufacturer to own DSIR approved R&D setup with state-of-the-art facilities. The pipes are manufactured confirming to IS, DIN, ISO, ASTM, TEC and other customized specifications. The Piping Division includes PE, PVC Pipes and Fittings catering to the urban and rural infrastructure needs of the country apart from irrigation needs of the farmers. Jain cPVC plumbing pipes & fittings for Hot water application is yet another product which will be a forward integration of the above group of infrastructure products. This will convey the hot water with efficiency combined with economy and have a long life.

Features & Advantages:

- Manufactured from high quality cPVC Coumpond.
- Compound is tested safe for potable water application.
- Wide range of working temperatures and pressures.
- Low thermal expansion.
- Smooth inner wall, no scale build-up or erosion.
- Long life – as cPVC does not build scale or corrode.
- Excellent impact strength.
- Light in weight, easy to Install.
- Energy efficient, low insulation cost.
- Ability to withstand water flow noise.
- Excellent fire resistant characteristics.
- Completely leak proof jointing.
- Durablity and long term reliability.
- Non-Toxic-Lead free.
- Wide range of pipes and fittings.
- Aesthetically pleasing when exposed in application.

Standard and Range:

Jain Plumbing cPVC pipes are manufactured to **IS 15778**, from specially formulated compound conforming to or exceeding the requirements of cPVC compound of cell classification " CVPC D.P.110-2-3-2 " as per **IS 15225.**

cPVC Pipe Properties:

Sr. No.	Property	Test Method	Value	Unit
1	cPVC Compound Cell Classification	IS 15225	CPVC D.P.110-2-3-2	
2	Chlorine Content(Base cPVC Resin)	IS 15778	≥ 66.5	%
3	Specific Gravity	IS 13360(Part 3/Sec 1)	Minimum 1.45	8/CC
4	VST	IS 12235 (Part 2)	≥ 110°	°C
5	Thermal Conductivity (K)	ASTM C177	0.16	W/(m·K)
6	Malfunctioning Test Temperature at 10 bar for 1000 Hrs at 95°± 2°C	IS 15778	Pipe shall not leak during test	
7	Tensile Strength Yield at 27 ± 2°C	IS 12235 (Part 13)	500	Kg/cm^2
8	Modulus of elasticity in tension	DIN 53455	2000 - 2500	Mpa
9	Impact Strength	ISO 3127	Maximum 10%	%TIR
10	Charpy Notched Impact Strength	ISO 179	> 4	KJ/M^2
11	transmission Of Visible Light	IS 12235 (Part 3)	< 0.2	%
12	Burning Rate	ASTM D635	Self-Extinguishing	-
13	Flammability Rating	UL 94	V-0	-
14	Coefficient of Thermal Expansion	ASTM D 696	3.4 x10-5	mm/mm°F
15	Revision test	IS 12235 P-5	± 5	%
16	Flattening test @ 60%	IS 12235 P-19	Shall not crack split or break	-
17	Hydrostatic prenure test	IS 12235 P-8 & IS 15778- CL 10.1	Shall not crack or burst	-

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Jain Plumbing cPVC pipes are manufactured in different pipe diameters of copper tube size (CTS). The pipes are manufactured in size range from ½" to 2" in SDR 11 & SDR 13.5.

Pipe Dimension Chart

As per IS 15778 : 2007

Sr. No.	Nominal Size	Pipe Nominal (OD)	Minimum wall Thickness SDR 11	Minimum wall Thickness SDR 13.5
	Inch	MM	MM	MM
1	½"	15.9	1.7	1.4
2	¾"	22.2	2	1.7
3	1"	28.6	2.6	2.1
4	1.25"	34.9	3.2	2.6
5	1.5"	41.3	3.8	3.1
6	2"	54	4.9	4.0

CPVC Plastic Pipe as per ASTM F441/ F441 M (All Dimensions in mm)

Sr. No.	Nominal Pipe Size in		Outside Diameter		Wall Thickness			
					Schedule 40		Schedule 80	
	Inch	mm	Min	Max	Min	Max	Min	Max
1	1/4	8	13.6	13.8	2.24	2.75	3.02	3.53
2	3/8	10	17	17.2	2.31	2.82	3.2	3.71
3	1/2	15	21.2	21.4	2.77	3.28	3.73	4.24
4	3/4	20	26.6	26.8	2.87	3.38	3.91	4.42
5	1	25	33.27	33.53	3.38	3.89	4.55	5.08
6	1.25	32	42.07	42.33	3.56	4.07	4.85	5.43
7	1.5	40	48.15	48.45	3.68	4.19	5.08	5.69
8	2	50	60.15	60.45	3.91	4.42	5.54	6.2
9	2.5	65	72.82	73.18	5.16	5.77	7.01	7.85
10	3	80	88.72	89.08	5.49	6.15	7.62	8.53
11	3.5	90	101.4	101.8	5.74	6.42	8.08	9.04
12	4	100	114.1	114.5	6.02	6.73	8.56	9.58
13	5	125	141.05	141.55	6.55	7.34	9.52	10.66
14	6	150	168.02	168.58	7.11	7.79	10.97	12.29
15	8	200	218.72	219.48	8.18	9.17	12.7	14.22
16	10	250	272.72	273.48	9.27	10.39	15.06	16.86
17	12	300	323.52	324.28	10.31	11.55	17.45	19.53
18	14	350	355.22	355.98	11.1	12.45	19.05	21.34
19	16	400	405.92	406.88	12.7	14.22	21.14	23.71

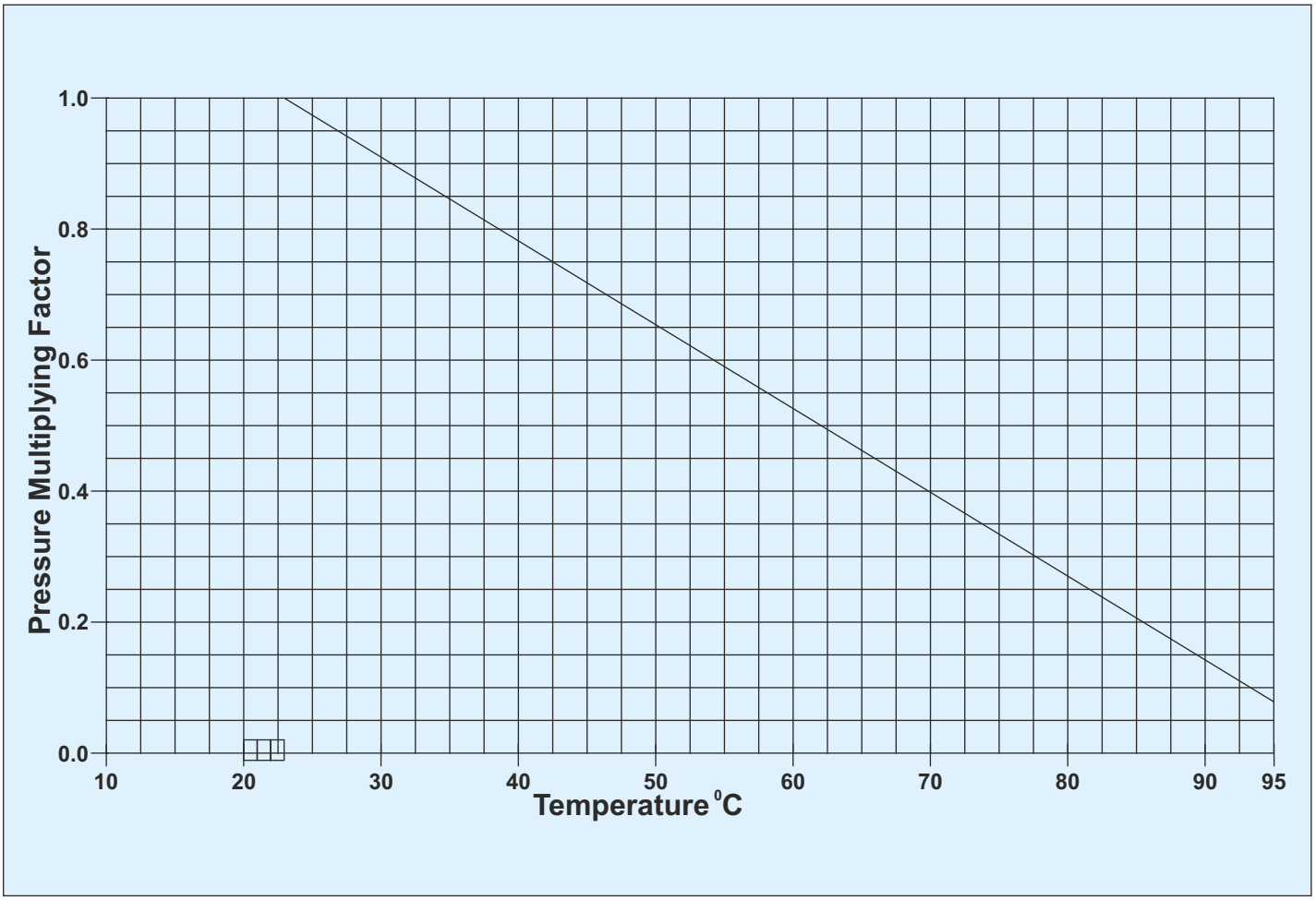
8" & above size can be supplied on request.

Temperature & Pressure Ratings

The selection of pipes is further based on the working pressure at different operating temperatures as per the details given below.

Sr. No.	Pipe SDR Series	Recommended Working Pressure(Kg/cm^2)	
		Operating Temperature 27°C(80.6°F)	Operating Temperature 82°C (179.6°F)
1	11.0	28.13	6.93
2	13.5	22.22	5.60

To find out the operating pressure at temperatures other than specified above, please refer the graph.



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Fitting -

Jain Plumbing cPVC fittings are manufactured from cPVC compound meeting the mechanical strength, heat resistance, flammability and chemical resistance requirements for cell classification 23447 in accordance with ASTM D 2846 & ASTM D 1784 in SDR 11 series. The complete range of cPVC fittings required for the HOT water application system is available with us.

Elbow 90° Solent Type		
Size	Material Code	Material Description
1/2"	cPVCE90012SJ	cPVC ELBOW 1/2"X 900
3/4"	cPVCE90034SJ	cPVC ELBOW 3/4"X 900
1"	cPVCE90100SJ	cPVC ELBOW 1"X 900
11/4"	cPVCE90114SJ	cPVC ELBOW 1.1/4"X 900
11/2"	cPVCE90112SJ	cPVC ELBOW 1.1/2"X 900
2"	cPVCE90200SJ	cPVC ELBOW 2"X 900

Elbow 45° Solent Type		
Size	Material Code	Material Description
1/2"	cPVCE45012SJ	cPVC ELBOW 1/2"X 450
3/4"	cPVCE45034SJ	cPVC ELBOW 3/4"X 450
1"	cPVCE45100SJ	cPVC ELBOW 1"X 450
11/4"	cPVCE45114SJ	cPVC ELBOW 1.1/4"X 450
11/2"	cPVCE45112SJ	cPVC ELBOW 1.1/2"X 450
2"	cPVCE45200SJ	cPVC ELBOW 2"X 450

Reducing Elbow 90° Solent Type		
Size	Material Code	Material Description
3/4" x 1/2"	cPVCRE034012SJ	cPVC
REDUCING ELBOW 3/4X 1/2		

	Equal Tee Solent Type	
Size	Material Code	Material Description
1/2"	cPVCET012SJ	cPVC TEE (EQUAL) 1/2"
3/4"	cPVCET034SJ	cPVC TEE (EQUAL) 3/4"
1"	cPVCET100SJ	cPVC TEE (EQUAL) 1"
11/4"	cPVCET114SJ	cPVC TEE (EQUAL) 1.1/4"
11/2"	cPVCET112SJ	cPVC TEE (EQUAL) 1.1/2"
2"	cPVCET200SJ	cPVC TEE (EQUAL) 2"

	Reducing Tee Solent Type	
Size	Material	CodeMaterial Description
3/4" x 1/2"	cPVCRT034012SJ	cPVC
REDUCING TEE	3/4"X1/2"	
1" x 1/2"	cPVCRT100012SJ	cPVC
REDUCING TEE	1"X1/2"	
1" x 3/4"	cPVCRT100034SJ	cPVC
REDUCING TEE	1"X3/4"	
11/4" x 1/2"	cPVCRT114012SJ	cPVC
REDUCING TEE	1.1/4"X1/2"	

11/4" x 3/4"	cPVCRT114034SJ	cPVC
REDUCING TEE	1.1/4"X3/4"	
11/4" x 1"	cPVCRT114100SJ	cPVC
REDUCING TEE	1.1/4"X1"	
11/2" x 1/2"	cPVCRT112012SJ	cPVC
REDUCING TEE	1.1/2"X1/2"	

11/2" x 3/4"	cPVCRT112034SJ	cPVC
REDUCING TEE	1.1/2"X3/4"	
11/2" x 1"	cPVCRT112100SJ	cPVC
REDUCING TEE	1.1/2"X1"	
	Reducing Tee Solvent Type	
11/2" x 11/4"	cPVCRT112114SJ	cPVC
REDUCING TEE	1.1/2"X1.1/4"	
2" x 3/4"	cPVCRT200034SJ	cPVC

REDUCING TEE	2"X3/4"	
2" x 1"	cPVCRT200100SJ	cPVC
REDUCING TEE	2"X1"	
2" x 11/4"	cPVCRT200114SJ	cPVC
REDUCING TEE	2"X1.1/4"	
2" x 11/2"	cPVCRT200112SJ	cPVC
REDUCING TEE	2"X1.1/2"	
	Coupler Solvent Type	
Size	Material Code	Material Description
1/2"	cPVCC012SJ	cPVC COUPLER (SOCKET) 1/2"
3/4"	cPVCC034SJ	cPVC COUPLER (SOCKET) 3/4"
1"	cPVCC100SJ	cPVC COUPLER (SOCKET) 1"
11/4"	cPVCC114SJ	cPVC COUPLER (SOCKET) 1.1/4"
11/2"	cPVCC112SJ	cPVC COUPLER (SOCKET) 1.1/2"
2"	cPVCC200SJ	cPVC COUPLER (SOCKET) 2"
	Reducer Solvent Type	

Size	Material Code	Material Description
3/4" x 1/2"	cPVCRC034012SJ	cPVC
REDUCING SOCKET	3/4"X1/2"	
1" x 1/2"	cPVCRC100012SJ	cPVC
REDUCING SOCKET	1"X1/2"	
1" x 3/4"	cPVCRC100034SJ	cPVC
REDUCING SOCKET	1"X3/4"	
11/4" x 1/2"	cPVCRC114012SJ	cPVC

REDUCING SOCKET	1.1/4"X1/2"	
11/4" x 3/4"	cPVCRC114034SJ	cPVC
REDUCING SOCKET	1.1/4"X3/4"	
11/4" x 1"	cPVCRC114100SJ	cPVC

REDUCING SOCKET 1.1/4"X1"		
11/2" x 1/2"	cPVCRC112012SJ	cPVC
REDUCING SOCKET 1.1/2"X1/2"		
11/2" x 3/4"	cPVCRC112034SJ	cPVC

REDUCING SOCKET 1.1/2"X3/4"		
11/2" x 1"	cPVCRC112100SJ	cPVC
REDUCING SOCKET 1.1/2"X1"		

11/2" x 11/4"	cPVCRC112114SJ	cPVC
REDUCING SOCKET 1.1/2"X1.1/4"		
2" x 3/4"	cPVCRC200034SJ	cPVC
REDUCING SOCKET 2"X3/4"		

2" x 1"	cPVCRC200100SJ	cPVC
REDUCING SOCKET 2"X1"		
2" x 11/4"	cPVCRC200114SJ	cPVC
REDUCING SOCKET 2"X1.1/4"		
2" x 11/2"	cPVCRC200112SJ	cPVC
REDUCING SOCKET 2"X1.1/2"		

	Union Solvent Type	
Size	Material Code	Material Description
1/2"	cPVCU012	cPVC UNION 1/2"
3/4"	cPVCU034	cPVC UNION 3/4"
1"	cPVCU100	cPVC UNION 1"
11/4"	cPVCU114	cPVC UNION 1.1/4"
11/2"	cPVCU112	cPVC UNION 1.1/2"
2"	cPVCU200	cPVC UNION 2"

	Elbow Brass Insert Type	
Size	Material Code	Material Description
1/2"	cPVCE90D012B	cPVC ELBOW 1/2"
3/4"	cPVCE90D034B	cPVC ELBOW 3/4"
	Reducing Elbow Brass Insert Type	

Size	Material Code	Material Description
3/4" x 1/2"	cPVCRE034012B	cPVC REDUCING ELBOW 3/4"X1/2"
1" x 1/2"	cPVCRE100012B	cPVC REDUCING ELBOW 1"X1/2"
	Equal Tee Brass Insert Type	
Size	Material Code	Material Description
1/2"	cPVCET012B	cPVC TEE (EQUAL) 1/2"
	Reducing Tee Brass Insert Type	
Size	Material Code	Material Description
3/4" x 1/2"	cPVCRT034012B	cPVC REDUCING TEE 3/4"X1/2"
1" x 1/2"	cPVCRT100012B	cPVC REDUCING TEE 1"X1/2"
	Male Threded Adoptor Solvent Type (MTA)	
Size	Material Code	Material Description

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1/2"	cPVCMTA012SJ	cPVC MTA 1/2"
3/4"	cPVCMTA034SJ	cPVC MTA 3/4"
1"	cPVCMTA100SJ	cPVC MTA 1"
11/4"	cPVCMTA114SJ	cPVC MTA 1.1/4"
11/2"	cPVCMTA112SJ	cPVC MTA 1.1/2"
2"	cPVCMTA200SJ	cPVC MTA 2"
	Reducing Male Threded Adoptor Solvent Type (MTA)	
Size	Material Code	Material Description

3/4" x 1/2"	cPVCRMTA034012SJ	cPVC REDUCING MTA 3/4"X1/2"
	Male Threded Adoptor (MTA) Brass Insert Heavy Duty	
Size	Material Code	Material Description
1/2"	cPVCMTA012BHD	cPVC MTA 1/2"
3/4"	cPVCMTA034BHD	cPVC MTA 3/4"
1"	cPVCMTA100BHD	cPVC MTA 1"
11/4"	cPVCMTA114BHD	cPVC MTA 1.1/4"
11/2"	cPVCMTA112BHD	cPVC MTA 1.1/2"
2"	cPVCMTA200BHD	cPVC MTA 2"

	Reducing Male Threded Adoptor (MTA) Brass Insert	
Size	Material Code	Material Description
3/4" x 1/2"	cPVCRMTA034012B	cPVC REDUCING MTA 3/4"X1/2"
	Female Threded Adoptor (FTA)	
Size	Material Code	Material Description
1/2"	cPVCFTA012SJ	cPVCFTA 1/2"
3/4"	cPVCFTA034SJ	cPVC FTA 3/4"
1"	cPVCFTA100SJ	cPVC FTA 1"
11/4"	cPVCFTA114SJ	cPVC FTA 1.1/4"
11/2"	cPVCFTA112SJ	cPVC FTA 1.1/2"
2"	cPVCFTA200SJ	cPVC FTA 2"

	Female Threded Adoptor (FTA) Brass Insert Heavy Duty	
Size	Material Code	Material Description
1/2"	cPVCFTA012BHD	cPVC
FTA 1/2"		
3/4"	cPVCFTA034BHD	cPVC
FTA 3/4"		
1"	cPVCFTA100BHD	cPVC
FTA 1"		
11/4"	cPVCFTA114BHD	cPVC
FTA 1.1/4"		
11/2"	cPVCFTA112BHD	cPVC
FTA 1.1/2"		
2"	cPVCFTA200BHD	cPVC
FTA 2"		

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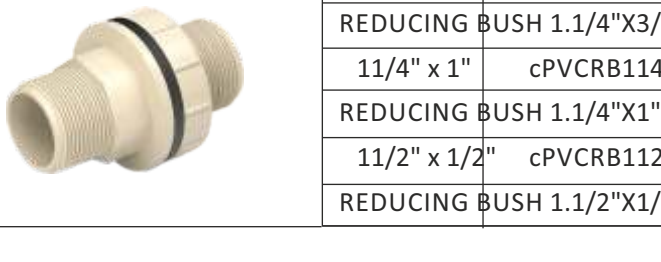
Reducing Female Threded Adoptor (FTA) Brass Insert		
Size	Material Code	Material Description
3/4" x 1/2"	cPVCRFTA034012B	cPVC REDUCING FTA 3/4"X1/2"
1" x 1/2"	cPVCRFTA100012B	cPVC REDUCING FTA 1"X1/2"

End Cap Solvent Type		
Size	Material Code	Material Description
1/2"	cPVCECP012SJ	cPVC END CAP 1/2"
3/4"	cPVCECP034SJ	cPVC END CAP 3/4"
1"	cPVCECP100SJ	cPVC END CAP 1"
11/4"	cPVCECP114SJ	cPVC END CAP 1.1/4"
11/2"	cPVCECP112SJ	cPVC END CAP 1.1/2"
2"	cPVCECP200SJ	cPVC END CAP 2"

Reducing Bush Solvent Type		
Size	Material Code	Material Description
3/4" x 1/2"	cPVCRB034012SJ	cPVC
REDUCING BUSH 3/4"X1/2"		
1" x 1/2"	cPVCRB100012SJ	cPVC
REDUCING BUSH 1"X1/2"		
1" x 3/4"	cPVCRB100034SJ	cPVC
REDUCING BUSH 1"X3/4"		
11/4" x 1/2"	cPVCRB114012SJ	cPVC
REDUCING BUSH 1.1/4"X1/2"		
11/4" x 3/4"	cPVCRB114034SJ	cPVC
REDUCING BUSH 1.1/4"X3/4"		
11/4" x 1"	cPVCRB114100SJ	cPVC
REDUCING BUSH 1.1/4"X1"		
11/2" x 1/2"	cPVCRB112012SJ	cPVC
REDUCING BUSH 1.1/2"X1/2"		



cPVC Pipes and Fittings

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Solvent Cement:

The cPVC pipes and fittings supplied by Jains are recommended to be joined by using Permafix cPVC solvent cement. Permafix solvent cement is produced conforming to ASTM F 493 – 04.

Advantages

- Permafix is produced using virgin cPVC resin.
- It contains minimum 10% of cPVC resin.
- It is free flowing.
- It does not contain lumps / undissolved resin.
- Gelation / stratification can be removed by stirring.

Joint Set up Time:

Handling / Set up Time is the time required prior to handling the joint. In humid conditions, allow 50% extra time for set up than specified below.

Sr. No.	Set Time		
	Temperature Range	Pipe Size ½" to 1 ¼"	Pipe Size 1½" to 2"
1	4.4 -15.5°C (40 - 60 ° F)	5 minutes	10 minutes
2	15.5- 38°C (60 - 100.4 ° F)	2 minutes	5 minutes

Joint Cure Time:

Joint cure time is the time required before pressure testing the system. In humid conditions allow 50% extra time for cure than specified in below table.

Sr. No.	Cure Time		
	Temperature Range	Pipe Size ½" to 1 ¼"	Pipe Size 1½" to 2"
1	4.4 -15.5°C (40 - 60 ° F)	12 Hours	24 Hours
2	15.5- 38°C (60 - 100.4 ° F)	6 Hours	12 Hours

Above charts can be used as a guideline to determine joint set & cure time. Conditions in the field may vary.

Packing Detail:

PIPE	COLOR	PACKAGING
cPVC	ORANGE	100, 250, 500, 1000 & 5000 ML

cPVC Pipes and Fittings

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Do

- Read the manufacturer's installation instructions.
- Keep pipe and fittings in original packaging until needed.
- Use tools specifically designed for use with plastic pipe and fittings.
- Cut the pipe ends square.
- Deburr and bevel the pipe ends with a chamfering tool.
- Use the proper solvent cement and follow application instructions.
- Rotate the pipe at least ¼ turn when bottoming the pipe into the fitting.
- Avoid use of excess cement in fittings and pipe.
- Allow cPVC tube slight movement to permit thermal expansion.
- Use plastic pipe straps that fully encircle the tube.
- Use protective pipe isolators when penetrating steel studs.
- Use metallic clevis of tear drop hangers when suspending tube from anchor.
- Use compatible sleeve material and tape while using under slab.
- Securely tape the top of the sleeve to the pipe.
- Extend pipe sleeve 12" above and below the slab.
- Backfill and cover underground piping prior to spraying termiticide in concrete pour.

Do Not

- use petroleum or solvent based sealants, lubricants.
- use edible oils, for a lubricant.
- use solvent cement that has exceeded its shelf life or has become thick.
- pressures test until the recommended joint cure times are met.
- thread, groove, or drill cPVC pipe.
- over tighten or lock down the systems.
- install in cold weather without allowing for thermal expansion
- use tube straps which tend to restrict expansion/contraction.
- use wood or plastic wedges that strain the tube as it passes them.
- terminate a run of tube against an immovable object .
- allow heavy concentration of termiticides to come into direct contact with cPVC pipe while using under slab.
- inject termiticides into the annular space between the pipe materials.
- spray termiticide, when preparing a slab, without first backfill underground piping.
- cut sleeve too short. Sleeve material should extend 12" above slab.
- apply short cuts, while jointing

Frequently Asked Questions

1)What is Thermal Expansion?

- Expansion and contraction of piping systems due to temperature changes is not unique to plastics. Changes in temperature tend to cause a change in dimensions of any matter. But, the amount of dimensional change for a given temperature change can vary significantly depending on the material characteristics.

2)How to restrain thermal expansion?

- The restraining of the tendency of a piping system to expand/contract can result in significant stress reactions in pipe and fittings, or between the piping and its supporting structure. The allowing of a moderate change in length of an installed piping system as a consequence of a temperature change is generally beneficial. Allowing controlled expansion/contraction to take place in one part of a piping system is an accepted means to prevent added stresses to rise to levels in other parts of the system that could compromise the performance of, or cause damage to the structural integrity of a piping component, or to the structure which supports the piping. Everyone is familiar with the typical expansion loops that are periodically placed in long pipelines subject to wide temperature changes

3)How to prevent freezing?

-There are two very reliable methods of providing freeze protection and/or temperature maintenance: external electrical heat tracing using “self-regulating” style electrical heaters, and the internal method of using a smaller diameter pipe that conveys a hot fluid to transfer heat to the fluid flowing in the annular space. Both methods require a slightly different design method, and also require their own unique fabrication techniques which need to be done during pipe installation. In case no care is taken during pipe installation, but still there is chance of exposure of pipes to freezing temperatures, it is important to fill the pipes with glycerin solution. High purity glycerin and propylene glycol solutions are the best antifreeze liquids.

4)What is the effect of excessive use of solvent cement?

- An installation problem that we occasionally see is the use of excessive solvent cement. The solvents in the cement themselves are readily absorbed into the wall of the cPVC pipe and inside fitting socket resulting in solvation/softening of the material. The solvents in the cement absorbed into the pipe wall resulting in softening of the pipe wall to the point that the pipe wall became swollen/ softened and no longer had sufficient strength to hold water pressure resulting in failure.

5)What is the effect of insufficient use of solvent cement?

-Sufficient solvent cement must be applied to end up with complete coverage of the matting portion of pipe outer and fittings inner surface so that a continuous bond is formed between the pipe and fitting surfaces. If insufficient cement is used, voids may develop in between the pipe and fitting. The presence of the voids results in a weakened assembly which may result in water leaking from the joint.

6)What is the life of cPVC?

-cPVC pipe and fittings, when installed underground as per the laid down procedures had a life expectancy of more than 50 years. cPVC pipes installed decades ago are still working satisfactorily.

7)What is the effect of external contacting material on the life of cPVC pipes & fittings?

-Care must be taken not to allow cPVC pipes to contact other materials that contain aromatic ester plasticizers and flame retardants. Phthalate esters are highly incompatible with cPVC pipes. Direct contact of such material with cPVC pipes results in premature failure.

Solder flux is another material that may contain chemicals that are incompatible with cPVC. If copper pipes are being soldered in the vicinity of cPVC pipes, hot flux can fall, spatter, or vaporize and condense on the outside surface of the cPVC pipes causing Environmental stress crack failure (ESC). Polyurethane spray foam (PUSF) insulation can be a problem. PUSF generates heat as it cures. If the heat is trapped by a thick layer of foam against the wall of the pipe, the heat can weaken and distort the pipe.

Also, each PUSF manufacturer has formulations that contain additives such as fire retardants. Some of these formulations may not be compatible with cPVC. one should consult with the PUSF manufacturer before applying PUSF in spaces where it may

contact cPVC pipes & fittings for its chemical compatibility with cPVC.

8)Can we use cPVC pipes and fittings immediately after the solar water heater storage tank?

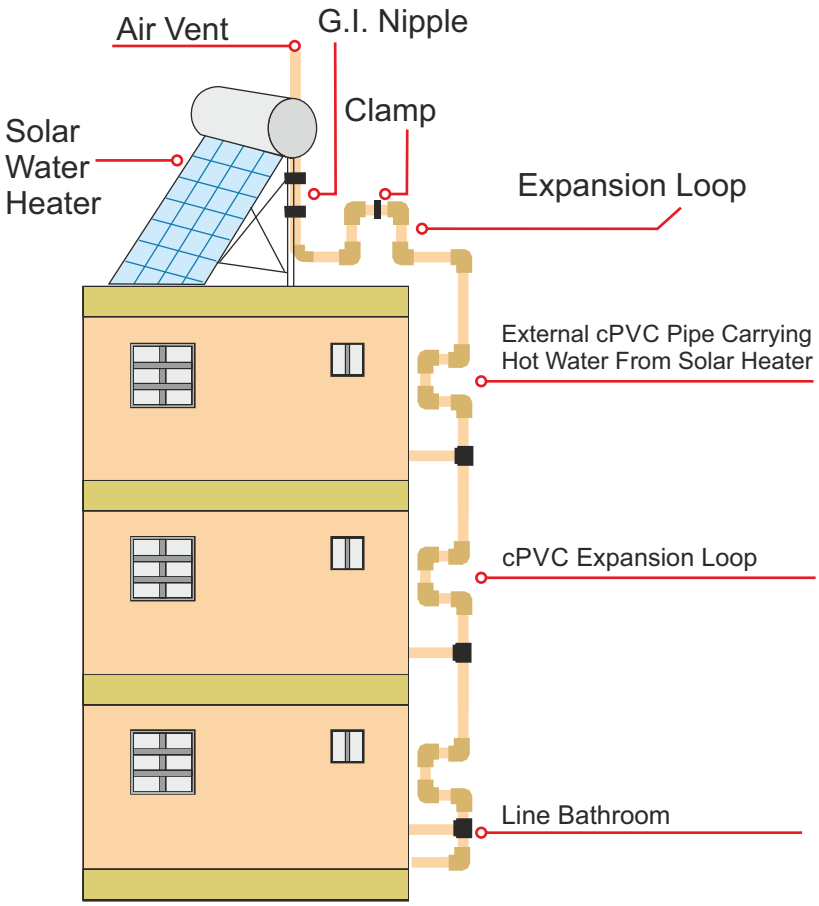
- No, for water heaters lacking reliable temperature control, this distance should be ideally 1 m. A metal nipple or flexible appliance connecter should be utilized. This measure eliminates the potential for damage to plastic piping that might result from excessive radiant heat.

9)Can we use cPVC pipes & Fittings immediately after gas water heater?

-Use of cPVC pipes immediately after the gas water heaters is permitted with some restriction. A care should be taken in such a way that at no point of time the flue gases from the heater directly or indirectly come in contact with the cPVC pipe, as the passing flue gases supply external heat to the pipe and if the flue gases temperature is high enough, it may damage the pipe. if flue gases cannot be controlled, in such cases avoid the use of cPVC pipe immediately after the gas water heater.

10)What extra care to be taken while installation of cPVC pipes & fittings in a construction?

Some products that are used in construction may contain chemicals that are not compatible with cPVC pipes and fittings. Therefore care must be exercised during installation to make sure that only chemically compatible products (e.g., metal pipe thread sealants, fire caulks, antifreeze, antibacterial lined pipes, etc.) are used during installation.



Residential Tower

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Chemical Resistance Chart Of cPVC –

Table below shows the chemical immersion resistance of properties cPVC. The resistance is almost the same as that of PVC, but the resistance at higher temperature range is much higher.

Chemicals	Temperature°C				
	20	40	60	80	100
Hydrochloric acid (35%)	◎	◎	○	△	×
Nitric acid (75% and less)	○	○	×	×	×
Sulfuric acid (50% and less)	◎	◎	○	△	×
Acetic acid (80% and over)	◎	○	△	×	×
Acetic acid (80% and over)	○				
Glacial acetic acid	×				
Chloroacetic acid	◎	◎	○	○	×
Hypachlorous acid	◎	◎	◎	◎	◎
Oxailc acid	◎	◎	◎	◎	◎
Lactic acid	◎	◎	◎	◎	◎
Butyric acid (20%)	◎				
Butyric acid (dense)	×				
Stearic acid	◎	◎	◎	○	
Oleic acid	◎	◎	◎	○	
Malelc acid	◎	◎	○	○	
Picric acid	×				
Fatty acid	◎	◎	◎	○	
Chromic acid (30%)	◎	○	△	×	×
Chroride of most metals	◎	◎	○	○	○
Potassium bichromate	◎				
Potassium permanganate (10%)	◎	◎			
Hydrogen peroxide (30%)	×				
Ethanol	◎	◎			
Methanol	◎	○	△	×	×
Carbon tetrachloride	×	×	×	×	×
Glycerin	◎	◎	◎	◎	◎
ASTM oil no. 3	◎	◎	◎	◎	◎
Oil fat	◎	◎	◎	○	○
Methyl ether	×				
Hexane	×				
Toluene	×				
Acetone	×				
Formalin (35%)	◎	○	△	×	×
Phenol	◎	△	×	×	×
Caustic soda	◎	◎	◎	○	○
Caustic potash (10%)	◎	◎	◎	○	○
Starch sugger solution	◎	◎	◎	◎	○
Petroleum	○	○	○	○	○
Chloroform	×				
Benzine	◎	◎	◎	○	○
Ketone groupe	×				
Acetaldehyde	×				
Distilled water	◎	◎	◎		
Bleacher	◎	◎	○	○	○
Beer brewing water	◎	◎	◎	◎	○

◎ : Not Affected ○ : Hardly Affected △ : Affected a little yet serviceable × : Not usable

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