World Plastics
عالم البلاستيك
للصناعات الإنشائية
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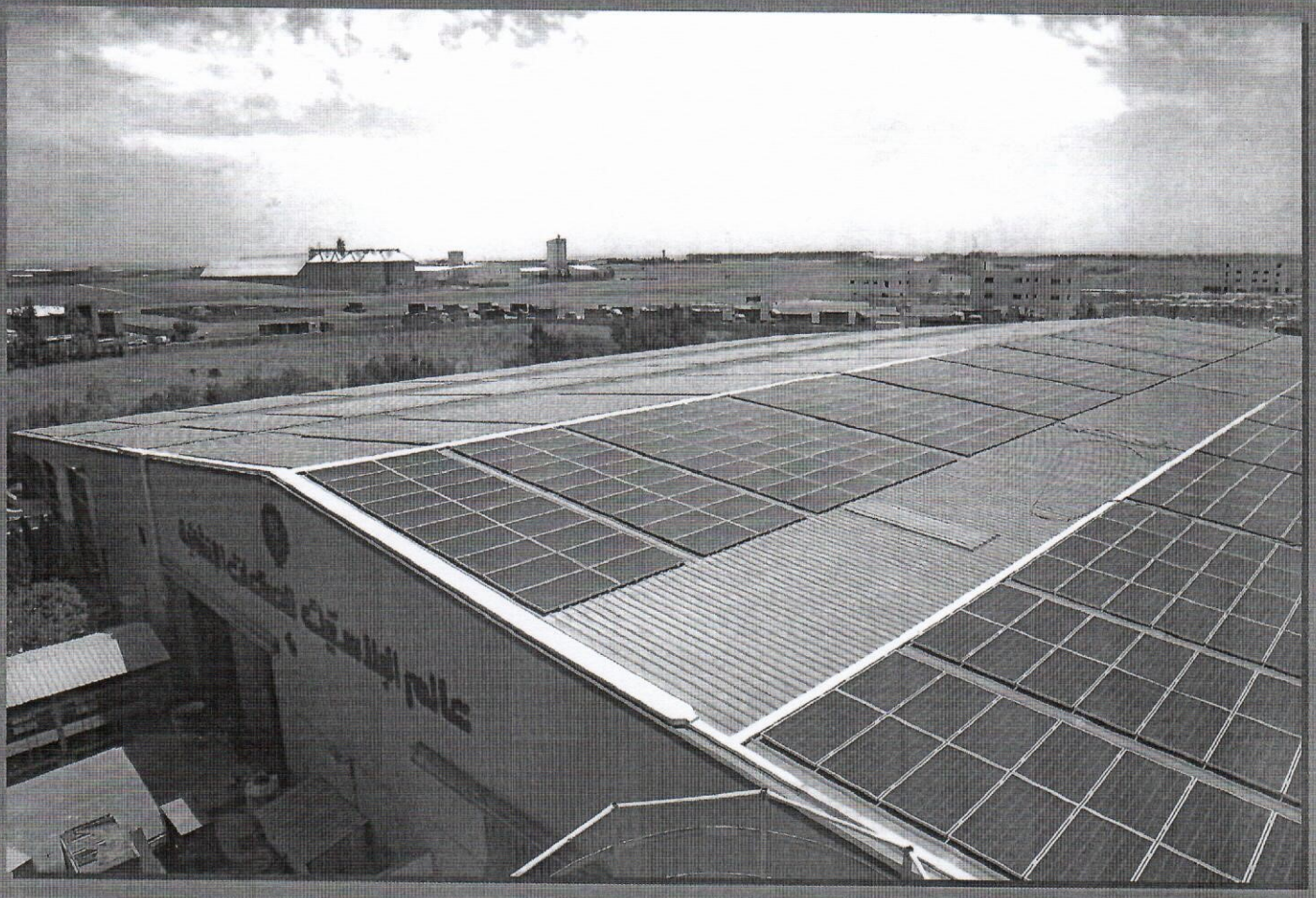
C.P.V.C

The Best Choice
For Pure Water

The First Manufacturer Of Advanced Plastic Piping Systems In Middle East Region

Solar Photovoltaic System



As one of the leading companies in the Jordanian industrial sector, we believe in being part of the solution for its most irritating challenges , the prices of energy have been rapidly increasing in the past few years . We, at World plastics, have taken a major step towards facing this challenge and turning it into an opportunity; we have recently operated a 712 kW on grid solar photovoltaic system that covers 60% of our energy needs, the system consists of 2262 photovoltaic panels distributed on our warehouses rooftops, and will provide the factory with 1145 MWh of electricity annually, thus reducing our factory's environmental impact with up to 550 tons of CO_2 emissions per year.

C.P.V.C

Advanced Piping Systems

Introduction :

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World Plastics is a leading company in the development and manufacture of advanced plastic piping systems since 1984 . Our uniquely extensive range of large and small bore piping systems are capable of handling a wide variety of materials in industrial and domestic applications including water , fluid, waste water , gas and chemicals .

World Plastics , also produces piping systems for hot and cold water installations . Pipes are made from high quality raw materials and are manufactured on some of the most advanced machinery is the world to the most exacting standards.

Our commitment to quality also extends to customer service . You will find us more than willing to help with the design of installations and can advise on the development of piping systems to meet particular needs.

So , and because of tremendous growth in the industrial, commercial, and housing sectors in all types of public amenities in Jordan , pipelines are needed to convey hot and cold water . To fulfill this need , World Plastics Company was formed with the aim of producing , in Jordan, a full range of chlorinated polyvinyl chloride (CPVC) pipes and fittings according to international recognized standards and Jordanian Standards .

CPVC Pipes and Fittings for Pressure Systems :

CPVC material is chlorinated polyvinyl chloride which is a specialty PVC compound by unique thermal , physical and mechanical properties desirable for piping improved impact resistance and good fire resistance capabilities .

Principal uses for CPVC are domestic hot water and cold water piping , residential piping , and many industrial applications which can take advantage of its capabilities and superior chemical resistance .

World Plastics CPVC high pressure pipes and fittings satisfy the increasing demand and European standard CPVC pipes and fittings for plumbing applications, Cold Water distribution systems that demand high levels of toughness , chemical resistance.

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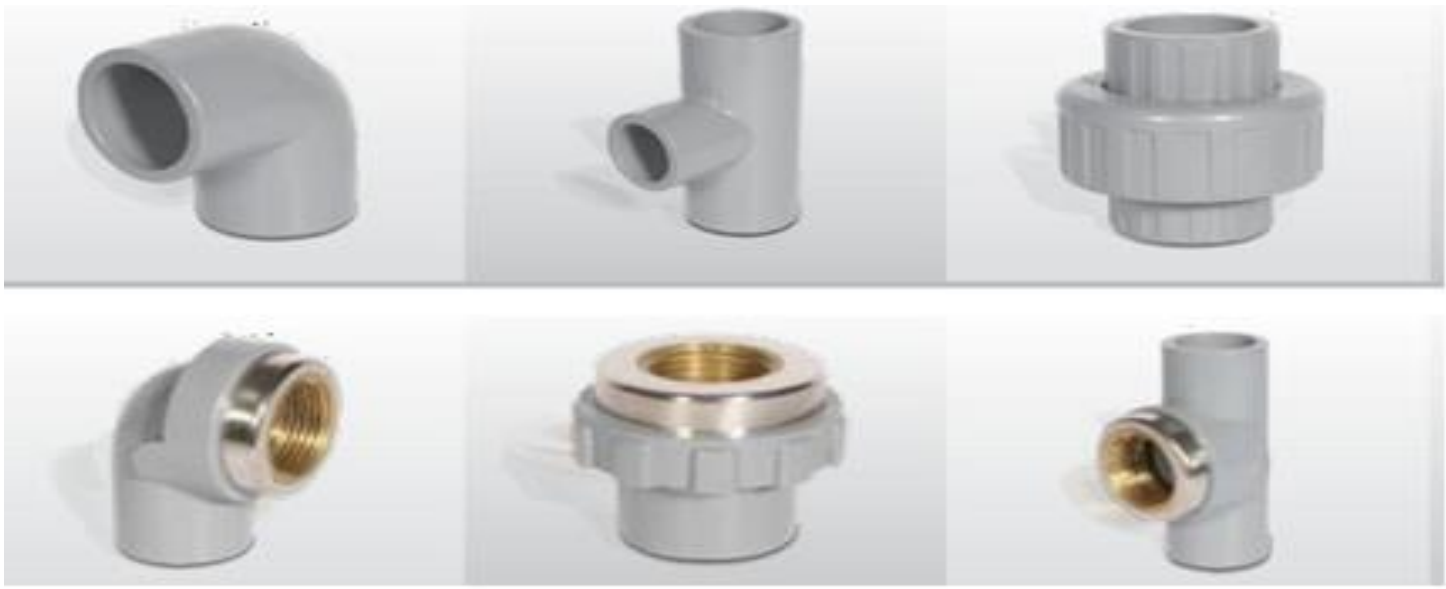


FIELDS OF APPLICATIONS :

World Plastics High Pressure CPVC pipes and fittings are widely used in :

- Hot and cold water distribution in residential, industrial and public buildings.
- Transportation of hot water in Heating Systems.
- Piping networks for sprinkler fire fighting systems
- Solar heating, central heating and radiant floor heating application
- Air Conditioning Drain Systems.
- Piping networks for swimming pools facilities.
- Piping networks for rainwater utilization.
- Irrigation networks.
- Circulation of hot and cold fluids in industrial applications.
- Transport of wide range of chemicals and corrosive fluids in industrial applications.

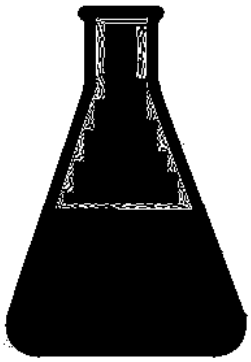
Features of World Plastics CPVC Pipes and Fittings :

- **Resistance to High Temperature :**

CPVC pipes and fittings are able to withstand high temperature in excess of 93°C.

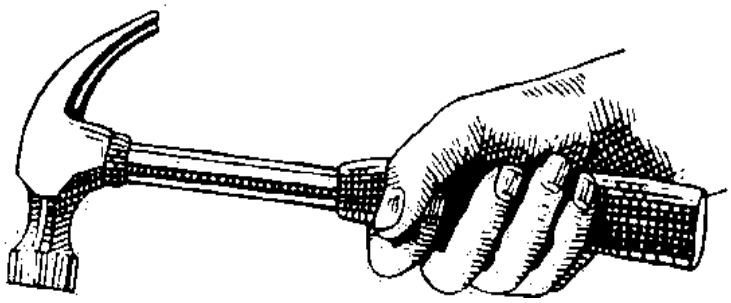
- **Chemical Resistance :**

CPVC pressure pipes and fittings are highly resistant to wide range of strong acids, alkalis, salt solutions, alcohols, and many other chemicals. This property makes CPVC pressure pipes and fittings preferred in corrosive applications and gives no tastes or odors to materials carried in them. They do not react with materials carried, nor act as a catalyst. It can even be buried directly under concrete slabs with no chemical interaction with concrete.



- **High Strength :**

World Plastic CPVC Pressure pipes and fittings are highly resilient, tough and durable products with high-tensile and high-impact strength. All these features guarantee higher pressure resistance capacity. CPVC pipes require less hangers and supports compared to other systems.



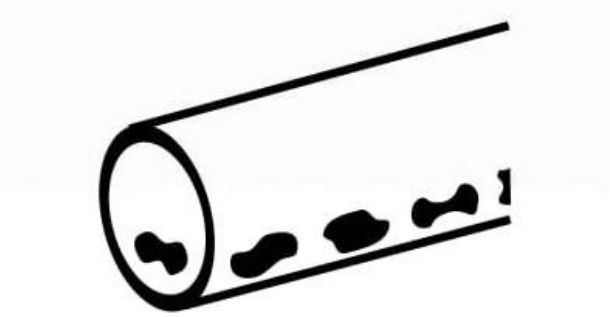
- **Corrosion Resistance :**

World Plastic High Pressure CPVC system is a high corrosion resistant, with superior ability to stand low pH levels water, coastal salt air exposure and

corrosive soil.

It also offers a major reduction in oxidation, which consequently guarantees the long durability of the system.

CPVC Pressure pipes and fittings are highly resistant to industrial fumes, humidity, salt water, weather and underground conditions. Scratches or surface abrasions do not provide points which corrosive elements can attack.



- **Resistance to Galvanic or Electrolytic Attack :**

CPVC Pressure pipes and fittings are resistant to galvanic and electrolytic attack. They can be

used underground, underwater, and can be safely connected to metal parts.

- **Resistance to Ultraviolet Exposure :**

Certain on site temperatures are higher in the Gulf region , and World Plastics CPVC system can easily withstand the ultraviolet exposure Construction phase of the projects , provided the onsite inventories are appropriately stored.

Although Which tends to discolor the pipe and can cause a loss of impact strength . No are impaired . If the pipe is to be installed in continuous direct sunlight , it is advisable exterior protection.

- **Low Thermal Conductivity :**

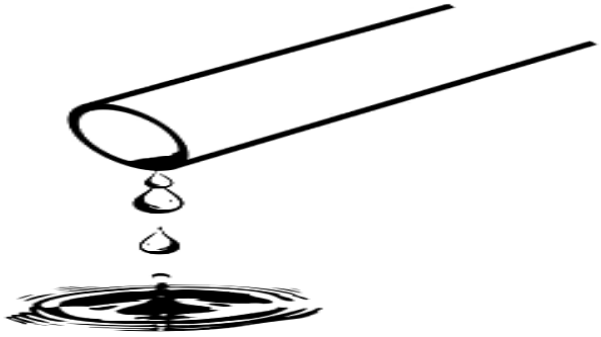
CPVC Pressure pipes and fittings have a lower thermal conductivity compared to metal pipes. This ensures that fluids maintain a more constant temperature and therefore they require less insulation than metal pipes. In most cases, pipe insulation is not required.

- **Low Thermal Expansion :**

Laboratory testing and installation experience have demonstrated that the potential expansion problems in CPVC are much smaller than those which the coefficient of thermal expansion might suggest. The stresses developed within the CPVC pipes are generally much lower than those
developed in equivalent metal pipe for equal temperature changes due to their elastic nature.

- **Low Condensation :**

Due to the CPVC's polymeric structure, costly condensation and damp concerns are eliminated, in addition to a considerable reduction in most of the long-term problems that would be experienced with metal installation.



- **Noise Reduction :**

World Plastic High Pressure CPVC system is a quite system, and therefore when used for water distribution in residential contexts, an additional advantage is derived. The low noise performance is due to the polymeric structure of the CPVC material, so the noise associated
with water hammer is eliminated .

- **Suitable for carrying drinking water :**

World Plastic CPVC pipes and fittings are retardant to bacterial growth which guarantees the quality and purity of water. They are suitable for aggressive low water pH levels of less than 6.5 .

- **Easy Handling and Installation :**

CPVC pressure pipe and fittings are lightweight (approximately one sixth the weight of steel) which results in reducing the transportation, handling, and

installation costs.

The installation is very easy and simple using CPVC solvent cement. Simple cutter, chamfering tool and CPVC solvent are the only requirements for leak proof jointing.

- **Low Friction Loss :**

CPVC Pressure pipes and fittings have low coefficient of friction due to its smooth internal surfaces which results in low friction loss and high flow rate.

Therefore they will not fail prematurely due to corrosion or scale build-up, especially in areas where water, soil, and/or atmospheric conditions are aggressive in nature like the Gulf

Region.

CPVC pipes guarantee full water carrying capacity because of lack of scale buildup, pitting and leaching which results in smooth and full bore flow and low water noise.

CPVC and PVC Materials :

CPVC is a chemical modification of PVC material; both materials are very similar in many properties, including strength and stiffness at ambient temperature.

The extra chlorine in CPVC's chemical structure increases the material's maximum operating temperature limit by about 28oC above that for PVC. Therefore CPVC can be used up to nearly 93oC for pressure uses and up to about 100oC for non-pressure applications.

PVC has a crystalline structure that enables it to be made into flexible material. While CPVC have a more rigid chain due to the additional chlorine atoms attached to the PVC chain and thus is a more brittle material.

This special chemical structure of CPVC allows it to have a higher temperature resistance compared to PVC. CPVC can withstand temperature in excess of 93°C (for short time loading up to 100 °C) while PVC can withstand temperature up to 60°C.

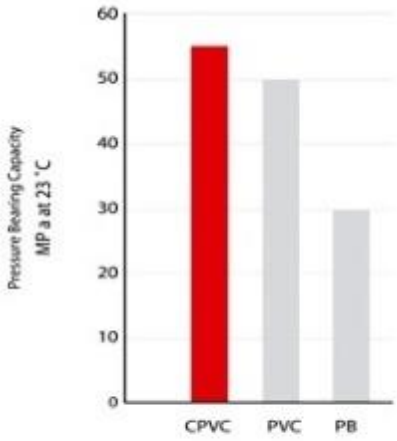
The two materials have almost the same chemical resistance.

CPVC Material Strength :

CPVC enjoys a much higher strength than other common thermoplastic materials used in plumbing systems.

Due to this feature, CPVC needs fewer hangers and supports than other common materials and eliminates the curvatures in pipe lines experienced in other systems.

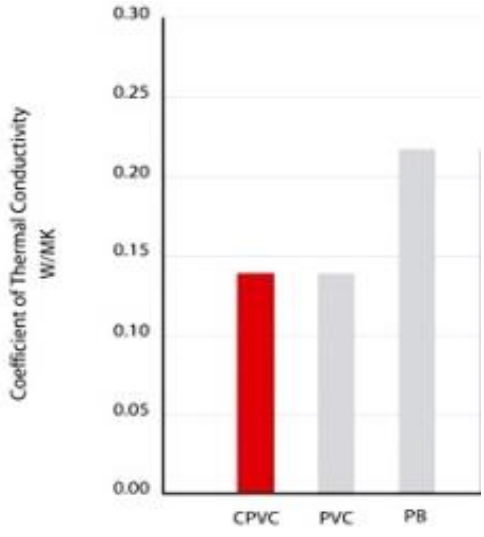
This feature also makes CPVC ideal for vertical installations (risers) and increases its pressure bearing capacity.



CPVC Thermal Conductivity :

The thermal conductivity of CPVC material is lower than most of the common thermoplastics used in plumbing systems. This feature reduces the heat loss / gain of the fluids being transported in CPVC pipes.

This leads to a higher energy saving and reduces the amount of thermal insulation needed for CPVC pipes.



Fire Resistance :

CPVC material exhibits outstanding fire performance characteristics in terms of limited flame propagation and low smoke generation. When combined with its excellent mechanical strength, low thermal conductivity, and outstanding corrosion resistance, CPVC provides excellent value in terms of safety and performance in a wide range of applications.

CPVC material has integral flame retarding property with very high Limiting Oxygen Index (LOI) of 60. This feature guarantees that CPVC pipes cannot be the ignition source of fire or support or sustain combustion. It does not increase fire load, has low smoke generation and low flame spread without flaming drips.

Ignition Resistance :

CPVC has a flash ignition temperature of 482°C while many other ordinary combustibles, such as wood, ignite at 260°C or less.

The following table shows the ignition temperature of some combustible materials:

Material	Ignition Temperature (°C)
CPVC	**482**
PVC	**399**
Polyethylene	**343**
Paper	**232**

Burning Resistance :

CPVC material will not sustain burning unless it is forced to burn, this is a result of its very high Limiting Oxygen Index (LOI) of 60 (the percentage of oxygen needed in an atmosphere to support combustion).

As Earth>s atmosphere is only 21% oxygen, CPVC will not burn unless continuously subjected to flame, it will stop burning when the ignition source is removed. Other combustible materials will support combustion due to their low LOI.

Material	LOI
CPVC	**60**
PVC	**45**
PVDF	**44**
ABS	**18**
Polypropylene	**17**
Polyethylene	**17**

WORKING CONDITIONS OF CPVC SYSTEMS :

- **Working Temperature :**

World Plastics CPVC pipes and fittings are recommended for applications where the operating temperature reaches up to 93°C (for short time loading up to 100 °C) .

There is theoretically no lower temperature limit on CPVC. However at very cold temperatures the material becomes brittle and the impact strength declines.

- **Working Pressure :**

The working pressure of CPVC pipes is directly related to the standard of production and schedule of pipe.

The tables on page 14 and 15 show the dimensions and pressure ratings of CPVC pipes.

CPVC MATERIAL Properties :

The CPVC typical material properties are listed in the following table. Slight variation could exist depending on the material compounds .

GENERAL	Value	Test Method
Cell Classification	23447	ASTM D1784
Maximum Service Temp.	200°F	-
	93°C	-
Specific Gravity, (g/cm3@ 73°F)	$1.52^{\pm 0.02}$	ASTM D792
Water Absorption % increase 24 hrs @ 25°C	0.03	ASTM D570
Hardness, Rock well	117	ASTM D785
MECHANICAL		
Tensile Strength, psi @ 73°F (22°C)	7,750	ASTM D638
Tensile Modulus of Elasticity, psi @ 73°F (22°C)	360,000	ASTM D638
Flexural Strength, psi @ 73°F (22°C)	13,000	ASTM D790
Flexural Modulus, psi @ 73°F (22°C)	360,000	ASTM D790
Compressive Strength, psi @ 73°F (22°C)	10,000	ASTM D695
Compressive Modulus, psi @ 73°F (22°C)	196,000	ASTM D695
Izod Impact, notched, ft lb/in @ 73°F (22°C)	2	ASTM D256
THERMAL		
Coefficient of Linear Expansion (in/in/°F)	3.7×10^{-5}	ASTM D696
Coefficient of Thermal Conductivity (Cal.)(cm)/(cm2)(Sec.)(°C) BTU/in/hr/ft.2/°F Watt/m/°K	 3.27×10^{-4} 0.95 0.137	ASTM C177
Heat Deflection Temperature Under Load (264psi, Annealed)	226°F (107°C)	ASTM D648
ELECTRICAL		
Dielectric Strength, volts/mil	1,250	ASTM D149
Dielectric Constant, 60Hz, 30°F	3.7	ASTM D150
Volume Resistivity, ohm/cm @ 73°F (22°C)	3.4×10^{15}	ASTM D257
Power Factor, 1000Hz	0.01%	ASTM D150
FIRE PERFORMANCE		
Flammability Rating	V-0, 5VB, 5VA	UL-94
Flame Spread Index	<10	
Flame Spread	<25	ASTM E -84/UL 723
	<25	ULC
Smoke Generation	≤50	ASTM E -84/UL 723
	<50	ULC
Flash Ignition Temp.	900°F	
Average Time of Burning (sec.)	<5	ASTM D635
Average Extent of Burning (mm)	<10	
Burning Rate (in/min)	Self Extinguishing	
Softening Starts (approx.)	295°F (146°C)	
Material Becomes Viscous	395°F (201°C)	
Material Carbonizes	450°F (232°C)	
Limiting Oxygen Index (LOI)	60	ASTM D2863

This special chemical structure of CPVC allows it to have a higher temperature resistance compared to PVC . CPVC can withstand temperature in excess of 93°C (for short time loading up to 100 °C) while PVC can withstand temperature up to 60°C .

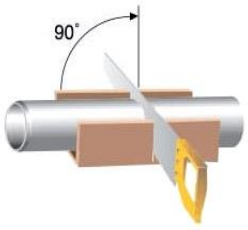
The two materials have almost the same chemical resistance.

JOINTING :

CPVC pressure pipes and fittings are jointed using solvent welding process which involves using heavy duty solvent cement.

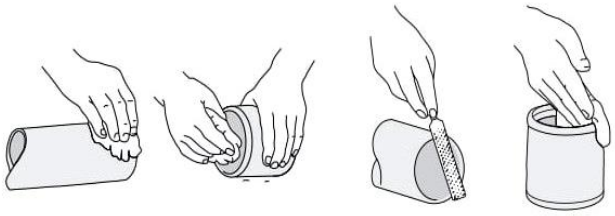
Solvent Cement Jointing Procedure

1. Cut the pipe at right angle to the pipe axis using suitable sharp pipe cutter. The pipe may be cut quickly and efficiently by Wheel-type plastic tubing cutter or Ratchet type cutters or fine tooth saws.



2. Remove burrs and filings from the outside and inside of the tube.

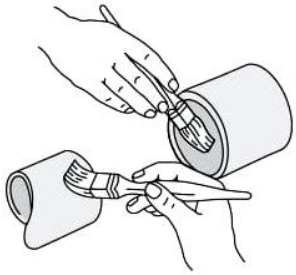
3 Clean the pipe and the fitting with dry cloth, in order to avoid any dust or sand that might
affect the quality of the joint. Clean the spigot and socket area with a dry cloth (natural fibers) to remove all dirt and moisture from spigot and socket.



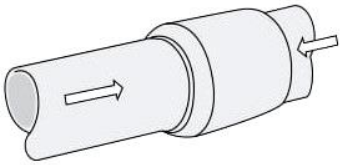
4 Apply cleaner solution to the outside surface of the pipe and to the inside surface of the fitting. Cleaner will prepare the surface for jointing for a better quality joint.

5 Using a suitably sized brush, apply a thin even coat of solvent cement to the internal surface of the fitting socket first then to the pipe spigot. Excess solvent cement must be avoided as pools of solvent cement will continue to attack the CPVC and weaken the pipe. Excess solvent cement will accumulate inside the system and may cause a reduction in the joint cross section.

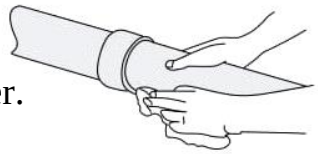
6 While both surfaces are still wet with solvent cement, insert the pipe into the fitting in a single movement. Do not stop halfway, since the bond will start to set immediately and it will be almost impossible to insert further. For a better distribution of the solvent cement, twist the pipe a 1/4 turn during insertion into the socket.



7 Wipe any excess cement from the pipe an leave the joint to dry completely.

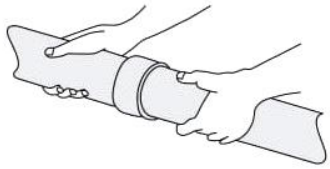


8 Hold the joint for around 30 seconds, during which avoid applying any load on the joint in order to avoid reducing the strength of the joint.



9 Leave the system for at least 12 hours before filling with water.

10 At temperatures of 16°C and above, leave the system for 24 hours before pressure testing. At lower temperatures, 48 hours is necessary before pressure testing.



Recommendations To Achieve An Effective Joint :

Make sure that the end of each pipe is square in its socket and in the same alignment and grade as the preceding pipes or fittings.

Create a 0.5mm chamfer, as a sharp edge on the spigot will wipe off the solvent and reduce the interface area.

Do not attempt to joint pipes at an angle. Curved lines should be jointed without stress, then curved after the joint is cured.

Previously cemented spigots and sockets be re-used. To repair a joint, cut out the defected joint and make a new joint.

Do not spill solvent cement onto pipes or fittings. Accidental spillage should be wiped off immediately.

Safety :

Ensure good ventilation in the working areas. Forced ventilation should be used in confined spaces.

Do not bring a naked flame close to the solvent cement operations.

Spillage of solvent cement on the skin should be washed off immediately with soap and water.

Should the solvent cement get in the eyes, wash them with clean water for at least 15 minutes and seek medical advice.

THREADED JOINTS :

Cutting of threads on CPVC pipes is not an acceptable practice. Instead , molded threaded adaptors should be used.

- ***Recommendations for threaded Joints :***

1 For threaded fittings, use Teflon thread-wrap tape in order to guarantee the water- tightness.

2 Grease or solvent cement should never be used on the threads.

3 Test the threaded parts before final assembly to ensure thread matching, particularly when connecting to other materials or to other manufacturers' fittings. The amount of Teflon tape should be Judged accordingly.

4 The threaded joints should be tightened initially by hand, and then a further two more turns should be sufficient to create a seal .

5 When making a transition connection to metal threads, use male threaded adapter whenever possible. This is necessary to avoid cracking the female u-PVC fitting due to over tightening in presence of extra Teflon tape.

Brass Threaded Fittings :

World Plastic presents an innovative range of CPVC fittings with brass threads which are recommended for jointing CPVC pipe work to metal pipe work. These fittings present an additional security when assembling metallic valves, angle valves, bib taps,..etc where an additional over-tightening is expected by the installers.

Pipe Supports :

When CPVC pipes are installed above-ground, they must be supported properly to avoid vibrations and stresses.

Brackets and Clips

Pipe supports and brackets should provide continuous support for at least 120° of the pipe circumference.

Sliding Joints :

Sliding joints allow the pipe to move without restraint along its axis while still being supported. Pipe clamps with rubber lining should be used to prevent the support from scratching or damaging the pipe during expansion and contraction.

Fixed Joints :

A fixed support rigidly connects the pipeline to a structure totally restricting movement in at least two planes of direction. Such a support can be used to absorb moments and thrusts.

Placement of Supports :

The places of pipe clamps should be selected considering that thermal and other movements do not result significant bending moments at rigid connections or at bends or tees.

Support Distances :

Pipe clamps and hangers should be installed in proper distances as indicated in the following table:

Support Distances for Sch80 CPVC pipes						
Nominal Size (inch)	**Temperature (°C)**					
	15	**26**	**37**	**49**	**60**	**82**
¼	**172**	**172**	**156**	**141**	**141**	**78**
½	**172**	**172**	**172**	**156**	**141**	**78**
¾	**188**	**188**	**188**	**172**	**156**	**94**
1	**203**	**203**	**188**	**188**	**172**	**94**
1.25	**219**	**219**	**203**	**188**	**172**	**109**
1.5	**219**	**219**	**219**	**203**	**188**	**109**
2	**250**	**234**	**234**	**234**	**203**	**125**
3	**250**	**250**	**250**	**234**	**219**	**125**
4	**281**	**281**	**281**	**266**	**234**	**141**
6	**313**	**328**	**297**	**281**	**250**	**156**
8	**344**	**344**	**328**	**313**	**281**	**172**

- **For Sch80 CPVC pipes.**
- **Distances in cm.**
- **The date in this table should be used as a general recommendation only and not as a guarantee of performance**

TESTING AND COMMISSIONING :

The pipeline may be tested as a whole or in sections, depending on the diameter and length of the pipe and the spacing between sections.

Before performing pressure testing, all supports must be finished and the concrete properly cured (the minimum time is seven days).

Special care should be taken while filling the system with water to ensure removing air from the system before pressurizing the system.

u-PVC pipelines are usually tested at 1.5 times the working pressure.

After reaching the test pressure, the drop in pressure must be noted over time. Slight pressure drop normally occurs as the remaining air goes into solution, and due to some further expansion of the pipe.

Re-pressurize the system to the testing pressure and again note the drop in pressure over the same time period.

Constant pressure (or very small drop) indicates a satisfactory result, while bigger pressure drop may indicate a leak.

It is recommended that the test pressure should be held for a minimum period of 15 minutes. The test pressure should never exceed 1.5 times the pipe pressure rating.

After completing the pressure test, the pipeline should be thoroughly flushed and dosed with a sterilizing agent such as chlorine. Local authority requirements should be followed.

HANDLING , STORAGE & TRANSPORTATION :

CPVC pipes can be damaged by rough handling. Transportation, storage and handling should be done taking into consideration the below directions and precautions.

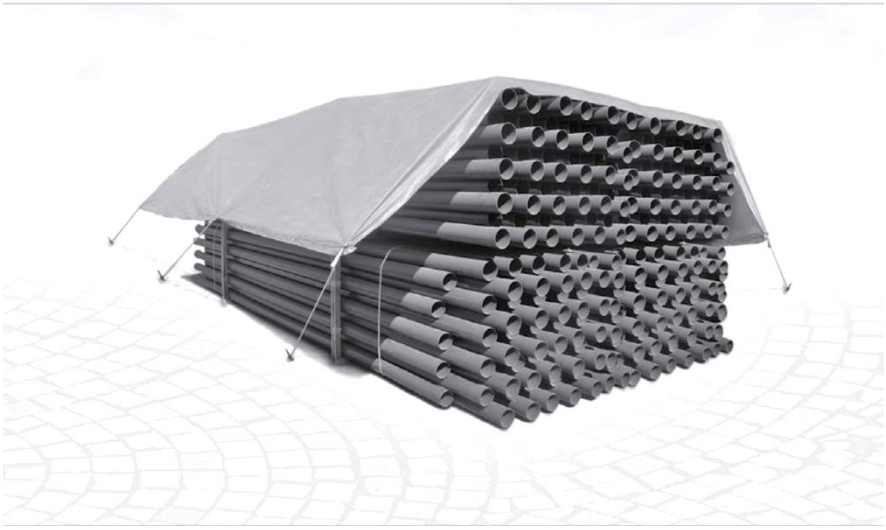
Handling :

- Take all reasonable care when handling CPVC, particularly in very cold conditions when the impact strength of the material is reduced.
- Do not throw or drop pipes, or drag them along hard surfaces.
- Do not scratch pipes against hard surfaces or drag them along the ground.
- In case of mechanical handling, use protective slings and padded supports. Metal chains and hooks should not make direct contact with the pipes.

Storage :

- To avoid deformation over time, pipes should be stacked:
  »either on a flat base
  »or on a level ground
  »or on 75mm x 75mm timber at 1m max. centers.
- For long-term storage (longer than 3 months) the maximum free height should not exceed 1.5m. The heaviest pipes should be on the bottom.
- Provide side support with 75mm wide battens at 1m centers.
- Vertical side supports should also be provided at intervals of 3m along rectangular pipe stacks.
- Maximum stack height is 1.7 meters regardless the pipe diameter.
- Store all materials in well-ventilated, shady conditions.
- Avoid direct exposure to sunlight for long periods.
- If stored in the open for long periods or exposed to strong sunlight, cover the stack with heavy sheets. Coverings such as black plastic must not be used as these can greatly increase the temperatures within the stack.
- Keep fittings in original packaging until required for use.
- Store fittings under cover. Do not remove from cartons or packaging until required.

- Ideally, stacks should contain one diameter pipe size only. Where this is not possible, stack largest diameter pipes at base of stack. Small pipes may be nested inside larger pipes.
- Do not place heavy items on top of the pipes.
- Protect the pipes from dirt, gravel or mud, as this could damage the ring seals inside the sockets.
- Pipes should be kept clean as much as possible, as this may save cleaning time while preparing pipes for welding.

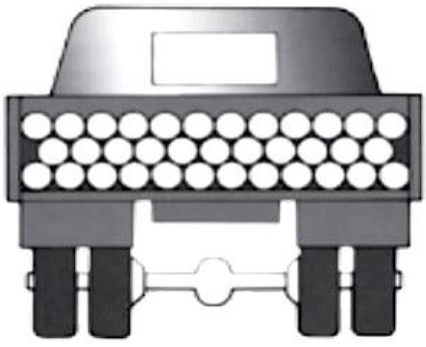


Transportation :

While in transit pipes should be well secured and supported. Chains or wire ropes may be used only if suitably padded to protect the pipe from damage. Pipes should be arranged safely on trucks avoiding crossing, bending and over stacking. Care should be taken that the pipes are firmly tied so that the sockets cannot rub together.

Pipes may be unloaded from vehicles by rolling them gently down timbers, care being taken to ensure that the pipes do not fall onto one another or onto any hard or uneven surface.

The pipes should also be fully supported over their total length .



STANDARDS

World Plastics CPVC pipes and fittings are manufactured in accordance with the following standards :

- GERMAN Standards : **DIN 8079 , DIN 8080**
- JORDANIAN Standards : **JS 1549 , JS 1554**
- AMERICAN Standards : **ASTM F 441**

PIPE SPECIFICATIONS :

القطر الخارجي / ملم External Diameter (mm)	السماكة / ملم Thickness (mm)	القطر الداخلي / ملم Internal Diameter (mm)
20	2.3	15.4
25	2.8	19.4
32	3.6	24.8
40	4.5	31.0
50	5.6	38.8
63	7.1	48.8

ASTM F 441 : Sch. 80 Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipes

Nominal	Outside Diameter		Schedule 80		Water	
			Minimum Wall Thickness		Pressure Rating (BAR)	
Size in Inch	Inch	mm	Inch	mm	at 83°C	at 23°C
¼”	0.540	13.70	0.119	3.02	19.30	77.90
	0.675	17.10	0.126	3.20	15.90	63.40
½”	0.840	21.34	0.147	3.37	14.50	58.60
¾”	1.050	26.67	0.154	3.91	11.70	47.60
1”	1.315	33.40	0.179	4.55	10.70	43.40
1.25	1.660	42.20	0.191	4.85	9.00	35.90
1.5	1.900	48.30	0.200	5.08	7.90	32.40
2”	2.375	60.33	0.218	5.54	6.90	27.60
2½”	2.875	73.00	0.276	7.01	7.20	29.00
3”	3.500	88.90	0.300	7.62	6.20	25.50
4”	4.500	114.30	0.337	8.56	5.50	22.10
6”	6.625	168.30	0.432	10.97	4.80	19.30
8”	8.625	219.00	0.500	12.70	4.10	17.20

Note: Pressure Rating Applies for Water and for Unthreaded Pipes

ASTM F 441 : Sch. 40 Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipes

Nominal Size in Inch	Outside Diameter		Schedule 40 Minimum Wall Thickness		Water Pressure Rating (BAR)	
	Inch	mm	Inch	mm	at 83°C	at 23°C
¼”	0.540	13.70	0.088	2.24	13.40	53.80
	0.675	17.10	0.091	2.31	10.70	42.70
½”	0.840	21.34	0.109	2.77	10.30	41.40
¾”	1.050	26.67	0.113	2.87	8.30	33.10
1”	1.315	33.40	0.113	3.38	7.60	31.00
1.25”	1.660	42.20	0.140	3.56	6.20	25.50
1.5”	1.900	48.30	0.145	3.68	5.50	22.80
2”	2.375	60.33	0.154	3.91	4.80	19.30
2½”	2.875	73.30	0.203	5.16	5.20	20.70
3”	3.500	88.90	0.216	5.49	4.50	17.90
4”	4.500	114.30	0.237	6.02	3.80	15.20
6”	6.625	168.30	0.280	7.11	3.10	12.40
8”	8.625	219.00	0.322	8.18	2.80	11.00

Note: Pressure Rating Applies for Water and for Unthreaded Pipes

World Plastics Pipes &Fittings Product Range :

Description	SIZE	PRODUCT	Description	SIZE
PIPES Sch. 40 CPVC	**1/2˝** **3/4˝** **1˝** **11/4˝**		**PIPES Sch. 80 CPVC**	**1/2˝** **3/4˝** **1˝** **11/4˝** **11/2˝** **2˝**

SOCKET 90

˚ ELBOW 90˚

ELBOW 45˚

EQUAL TEE

UNION

END CAP

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