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PRAN-RFL Center
105 Pragati Sarani, Middle Badda, Dhaka 1212, Bangladesh

/rflcasybuild

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cPVC Pro

PIPE & FITTINGS

The Hot Option

OUR CORPORATE MISSION

POVERTY & HUNGER ARE CURSES

OUR AIM :

TO GENERATE EMPLOYMENT &

EARN DIGNITY & SELF-RESPECT

FOR OUR COMPATRIOTS

THROUGH PROFITABLE ENTERPRISES

ABOUT US

RFL Plastics is a sister concern of PRAN-RFL group. The company was founded by Amjad Khan Chowdhury in 1981 with a vision to leveraging the farmer in irrigation as well as ensuring drinking water through Water Pump & Tube well. After that it commenced its operation in different categories and starts plastics line in 2003. The factory sites are in company owned industrial parks of 300,000 sq. meters including building area of 200,000 which is fully equipped with state of the art injection & blow molding machines with a conversion capacity of over 10000 tons per month.

RFL Plastics currently utilizes 2300 molds through 300 machines having a growth rate of 20% over last year backed by own tooling facilities in the factory premises. The behind growth story of this brand is expansion & availability of innovative & affordable solution for household durables & utensils.

We are a very strong organization of 4500 employees dedicated to supplying customized and quality plastic products globally.

OUR CREDENTIALS

It is our pleasure that we have got several recognitions from local and international organization as the best business enterprise through sustainable growth.

DAILY STAR-DHL BUSINESS AWARD

CEO of PRAN-RFL Group Receiving the Trophy from former Commerce Minister of Pepoles Republic of Bangladesh.

BEST EXPORTER TROPHY

DMD of Pran-RFL Group receiving the Award from Honorable Prime Minister of Pepoles Republic of Bangladesh

ABOUT RFL cPVC Pro

RFL Plastic Ltd is very proud to introduce CHLORINATED POLY VINYL CHLORIDE [cPVC] for the first time into this part of the globe, under license from Lubrizol, [formerly Noveon, USA] under brand name RFL cPVC Pro It is also manufacturing Industrial Piping System under brand name RFL cPVC Pro

Pipes are produced in copper tube size (CTS) from 15 mm (1⁄2") to 50 mm (2") with two different standard dimensional ratios - SDR-11 and SDR-13.5. The fittings are produced as per SDR 11. All RFL cPVC Pro Pipe & Fittings SDR 11 and SDR 13.5 pipes are made from identical cPVC compound material having same physical properties. The cPVC fittings are manufactured from compound material which meets all the requirement as per ASTM standard. cPVC pipes of Copper Tube Size (CTS) dimensions can also be applied to cPVC (IPS) dimensions by using IPS x CTS fittings. The cPVC pipes from 15 mm (1⁄2") to 50 mm (2") are also produced as per IS 15778 standard in both class that is Class 1 (SDR 11) and Class 2 (SDR 13.5).

Apart from having the same physical properties, SDR 11 and SDR 13.5 which are having different wall thickness and therefore, at any given temperature, they have different pressure ratings.

STANDARDS & SPECIFICATIONS

ASTM D1784:
Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (cPVC) Compounds.

ASTM D2846:
Specification for Chlorinated Poly (Vinyl Chloride) (cPVC) Plastic Hot & Cold water distribution systems.

ASTM F493:
Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (cPVC) Plastic Pipe & Fittings.

ASTM F441:
Standard Specification for Chlorinated Poly (Vinyl Chloride) (cPVC) Plastic Pipe, SCH 40 & 80.

ASTM F438:
Socket-Type Chlorinated Polyvinyl Chloride Plastic Pipe Fittings. SCH 40.

ASTM F439:
Socket-Type Chlorinated Polyvinyl Chloride Plastic Pipe Fittings. SCH 80.

ASTM D2774:
Underground installation of Thermoplastic pipes.

IS 15778:
Chlorinated poly vinyl chloride (cPVC) pipe for potable hot and cold water distribution supplies.

WHY RFL cPVC Pro

THE RAW MATERIAL

RFL cPVC Pro Pipe is a Hot and Cold Potable Water Distribution System made of chlorinated polyvinyl chloride (cPVC) for use in single and multi-family homes, apartments, high-rises, hotel/motels and commercial installations.
cPVC has been used for hot and cold water distribution in the United States since 1960. It has a history of superior performance and competitive prices compared to metal and other alternative piping systems. RFL cPVC Pro Pipe & Fittings are jointed by solvent cementing which, through chemical bonding, essentially makes the pipe and fitting become one continuous piece.RFL cPVC Pro Pipe & Fittings meets requirements of both ANSI/NSF standard 14-plastic piping system components and related materials-and standard 61- Drinking Water System, components-health affects. Included in these tests are strict standards and strict toxicological review relating to chemical extraction products, taste and odour produced in the water by the piping system.

BASIC PHYSICAL FEATURE

FEATURE	TEST	CONDITION	ENGLISH UNITS	SI UNITS
GENERAL				
• Specific Gravity	ASTM D792	73°F / 23°C	1.55 g/cm3	1.55 g/cm3
• Specific Volume		73°F / 23°C	0.645 cm3 /g	0.645 cm3 /g
• Water Absorption	ASTM D570	73°F / 23°C	+0.03%	+0.03%
	212°F/100°C	+0.55%	+0.55%	
• Rockwell Hardness	ASTM D785	73°F / 23°C	119	
• Cell class	ASTM D1784		23447-B	
MECHANICAL				
• Izod Impact	ASTM D256	73°F / 23°C	1.5 ft lbs/in o.n	80 J/m o.n.
• Tensile Strength	ASTM D638	73°F / 23°C	8000 psi	55 N/mm2
• Tensile Modulus	ASTM D638	73°F / 23°C	360,000 psi	2500 N/mm2
• Flexural Strength	ASTM D790	73°F / 23°C	15,100 psi	104 N/mm2
• Flexural Modulus	ASTM D790	73°F / 23°C	415,000 psi	2860 N/mm2
• Compressive Strength	ASTM D695	73°F / 23°C	10,100 psi	70 N/mm2
• Compressive Modulus	ASTM D695	73°F / 23°C	196,000 psi	1350 N/mm2
THERMAL				
• Coefficient of Thermal Expansion	ASTM D696		3.4x10-5 in/in/°F	6.3x10-5 m/m/°K
• Thermal Conductivity	ASTM C177		0.95 BTU in/hr/ft2/°F	0.14 Wm/°K/m2
• Heat Distortion Temperature	ASTM D638		217°F	103°C
• Heat Capacity	DSC	73°F / 23°C	0.21 BTU/lb°F	0.90 J/g°K
		212°F / 100°C	0.26 BTU/lb°F	1.10 J/g°K
FLAMMABILITY				
• Flammability Rating	UL 94	0.062 in/0.157 cm	V-0, 5VB, 5VA	
• Flame Spread	ASTM E84		15	
• Smoke Developed	ASTM E84		70-125	
• Limiting Oxygen Index	ASTM D2863		60%	
ELECTRICAL				
• Dielectric Strength	ASTM D147		1250 V/mil	492,000 V/cm
• Dielectric Constant	ASTM D150	60 Hz, 30°F/-1°C	3.70	3.70
• Power Factor	ASTM D150	1000 Hz	0.007%	0.007%
• Volume Resistivity	ASTM D257	73°F/23°C	3.4x1015 ohm/cm	3.4x1015 ohm/cm

Technical Details

Outside Diameters and Wall Thicknesses For CPVC 4120, SDR 11 Plastic Pipe As Per ASTM D-2846

Nominal Size		Outside Diameter, in. (mm)		Wall Thickness, in. (mm)		Pressure Rating.PSI (Kg/Cm²)			
(in.)	(mm)	Average	Tolerance	Minimum	Tolerance	73.4°F	(23°C)	180°F	(82°C)
½*	(15)	0.625 (15.9)	±0.003 (0.08)	0.068 (1.73)	+0.020 (0.51)	400	(28.1)	100	(7.0)
¾	(20)	0.875 (22.2)	±0.003 (0.08)	0.080 (2.03)	+0.020 (0.51)	400	(28.1)	100	(7.0)
1	(25)	1.125 (28.6)	±0.003 (0.08)	0.102 (2.59)	+0.020 (0.51)	400	(28.1)	100	(7.0)
1¼	(32)	1.375 (34.9)	±0.003 (0.08)	0.125 (3.18)	+0.020 (0.51)	400	(28.1)	100	(7.0)
1½	(40)	1.625 (41.3)	±0.004 (0.10)	0.148 (3.76)	+0.020 (0.51)	400	(28.1)	100	(7.0)
2	(50)	2.125 (54.0)	±0.004 (0.10)	0.193 (4.90)	+0.023 (0.58)	400	(28.1)	100	(7.0)

* For ½" wall thickness minimum is not a function of SDR.

Outside Diameters and Wall Thicknesses For CPVC 4120, SDR 13.5 Plastic Pipe

Nominal Size		Outside Diameter, in.(mm)		Wall Thickness, in. (mm)		Pressure Rating.PSI (Kg/Cm²)			
(in.)	(mm)	Average	Tolerance	Minimum	Tolerance	73.4°F	(23°C)	180°F	(82°C)
½ *	(15)	0.625 (15.9)	± 0.003 (0.08)	0.055 (1.40)	+ 0.020 (0.51)	320	(22.5)	80	(5.6)
¾	(20)	0.875 (22.2)	± 0.003 (0.08)	0.065 (1.65)	+ 0.020 (0.51)	320	(22.5)	80	(5.6)
1	(25)	1.125 (28.6)	± 0.003 (0.08)	0.083 (2.12)	+ 0.020 (0.51)	320	(22.5)	80	(5.6)
1¼	(32)	1.375 (34.9)	± 0.003 (0.08)	0.102 (2.59)	+ 0.020 (0.51)	320	(22.5)	80	(5.6)
1½	(40)	1.625 (41.3)	± 0.004 (0.10)	0.120 (3.06)	+ 0.020 (0.51)	320	(22.5)	80	(5.6)
2	(50)	2.125 (54.0)	± 0.004 (0.10)	0.157 (4.00)	+ 0.023 (0.58)	320	(22.5)	80	(5.6)

* For ½" wall thickness minimum is not a function of SDR.

Outside Diameters, Wall Thickness & Pressure Rating For CPVC 4120, Schedule 40 Piping System As per ASTM F 441

Nominal Size		Outside Diameter, in. (mm)		I.D.	Wall Thickness, in. (mm)		Pipe - Pr. R. PSI (Kg/Cm²)		Fitting - Pr. R. PSI (Kg/Cm²)	
(in.)	(mm)	Average	Tolerance	Average	Minimum	Tolerance	73.4°F	(23°C)	73.4°F	(23°C)
2½	(65)	2.875 (73.0)	±0.007 (0.18)	2.444 (62.07)	0.203 (5.16)	+0.024 (0.61)	300	(21.10)	180	(12.65)
3	(80)	3.500 (88.9)	±0.008 (0.20)	3.041 (77.26)	0.216 (5.49)	+0.026 (0.66)	280	(18.28)	156	(10.96)
4	(100)	4.500 (114.3)	±0.009 (0.23)	3.998 (101.55)	0.237 (6.02)	+0.028 (0.71)	220	(15.47)	132	(09.28)

Outside Diameters, Wall Thickness & Pressure Rating For CPVC 4120, Schedul 80 Piping System As per ASTM F 441

Nominal Size		Outside Diameter, in. (mm)		I.D.	Wall Thickness, in. (mm)		Pipe-Pr. R. PSI (Kg/Cm²)		Fitting-Pr. R. PSI (Kg/Cm²)	
(in.)	(mm)	Average	Tolerance	Average	Minimum	Tolerance	73.4°F	(23°C)	73.4°F	(23°C)
2½	(65)	2.875 (73.0)	±0.007 (0.18)	2.288 (58.14)	0.276 (7.01)	+0.033 (0.84)	420	(29.53)	252	(17.71)
3	(80)	3.500 (88.9)	±0.008 (0.20)	2.864 (72.75)	0.300 (7.62)	+0.036 (0.91)	370	(26.01)	222	(15.60)
4	(100)	4.500 (114.3)	±0.009 (0.23)	3.778 (95.97)	0.337 (8.56)	+0.040 (1.02)	320	(22.50)	192	(13.49)
6	(150)	6.625 (168.3)	±0.011 (0.28)	5.710 (145.04)	0.432 (10.97)	+0.052 (1.32)	280	(19.69)	168	(11.81)
8	(200)	8.625 (219.1)	±0.015 (0.38)	7.565 (192.15)	0.500 (12.70)	+0.060 (1.52)	250	(17.57)	150	(10.54)
10	(250)	10.750 (273.1)	±0.015 (0.38)	9.493 (241.12)	0.593 (15.06)	+0.071 (1.80)	230	(16.17)	138	(09.70)
12	(300)	12.750 (323.90)	±0.015 (0.38)	11.294 (286.87)	0.687 (17.45)	+0.082 (2.08)	230	(16.17)	138	(09.70)

Temperature Derating Factors

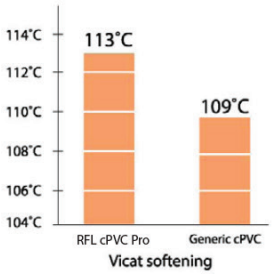
Working Temperature (°F)	73-80	90	100	120	140	160	180	200
Working Temperature (°C)	23-25	32	38	49	60	71	82	93
Pipe Derating Factor	1.00	0.91	0.82	0.65	0.50	0.40	0.25	0.20
Valve Derating Factor	1.00	0.95	0.90	0.80	0.70	0.61	0.53	0.45

Benefits of RFL cPVC Pro

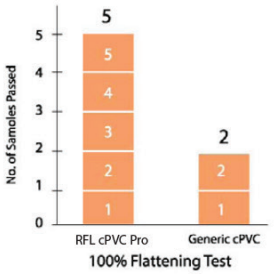
Features and benefits	RFL cPVC Pro
Raw material has a successful track record of over 50 years-across the globe	yes
Raw material has been used in the highest number of projects in Bangladesh over last 12 years	yes
Raw material is NSF certified	yes
Widest range of pipes and fittings from ½" to 6"	yes
Consistent lab testing in Europe, USA and Bangladesh	yes
Nationwide marketing and support team	yes
Factory warrenty on all products	yes

THE SUPERIOR HOT/COLD WATER DISTRIBUTION SYSTEM

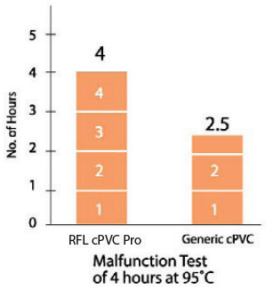
When you specify RFL cPVC Pro Pipe & Fittings you benefit from the most experienced installation and support network in the industry. Let us help you specify the pipes, fittings,solvent cement and installation technologies that meet your most stringent for reliability and performance.



Vicat softening



100% Flattening Test



Malfunction Test
of 4 hours at 95°C

Parameters	RFL cPVC Pro	pipe processed from generic Cpvc materials	Remarks
Vicat softening	Pass	Fail	Generic cpvc product has continuous problem in hot water lines
Vice crush	Pass	Fail	In generic cpvc product, materials is inconsistent which weakens pipe and has high risk of pipe failure.
Malfunction failure at 95 deg c	Pass	Fail	Generic cpvc product has less life expectancy.
Manufacturing process	Pass	Fail	RFL cPVC Pro pipes have strong quality control and has no batch variation.
Specification and code acceptance	Pass	Fail	RFL cPVC Pro pipes is strong on technical grounds and is a well accepted brand.
Product consistency	Pass	Fail	RFL cPVC Pro pipe assures product uniformity.

Difference beween RFL cPVC Pro & Conventional Piping System

Property	RFL cPVC Pro	GI	PP-R
Corrosion	No effect due to excellent chemical resistance	Corrodes faster and deteriorates	Has a certain amount chemical resistance
Scaling , pitting and leaching and full bore flow	Absence Scaling , pitting and leaching leads to full bore flow	Severe Scaling , pitting and leaching leads to reduced bore flow	Scaling , pitting and leaching can occur and reduce bore flow in some instances
Thermal conductivity and insulation levels	Lower thermal conductivity reduces heat loss and requires reduced insulation levels	Very high thermal conductivity increases heat loss and requires high insulation levels	Higher thermal conductivity than cPVC, leading to heat loss and requires higher insulation levels
Bacterial growth	Extremely low	More than copper	More than cPVC
Fire resistance	LOI of 60% and hence does not catch fire or sustain burning	Being metallic, better Fire Resistance	LOI is 80%, hence can easily catch fire and sustain burning
Installation	Easy, through cold welding, requiring less man hours. No electric / heat source require. Hence cost effective.	Very slow and cumbersome. Requires more man hours.	Joining process is by heat fusion. Requires greater skill and electric/heat source
Leakage	Leak free installation for the entire life span of the piping system	Always susceptible to leakage from day one of installation	Relatively leak free if highly skilled manpower is employed
Thermal expansion	Lower, leads to less pipe expansions, less looping and offsets	Although thermal expansion is lower, the stress induced is far greater	Higher expansion requires more looping/offsets
Range of fitting	Wide range of fittings makes layout easier and compact for Architects, Consultants, Builders and end users	Limited range of fittings	Normal range of fittings
Specials Tools	Simple cutter or saw blade and cPVC solvent cement is adequate for 100% leak-proof joint and satisfactory plumbing	Needs heavy tools for pipe cuttings and threading	Needs special electrical heater to achieve the desired hot welded joint. Any failure can result in poor plumbing and therefore leakages

NSF APPROVED SOLVENT CEMENT

All Weld-On solvent cements, primers and cleaners meet the requirements for Low VOC (volatile organic compound) emission limits established by the California South Coast Air Quality Management District (SCAQMD), one of the USA's strictest air quality regulatory bodies. Low VOC emissions contribute to cleaner air.

All Weld-On Low VOC solvent cements provide the following benefits:

- High Quality Performance with excellent installation properties.
- User Friendly. Reduced fumes and odour for the comfort and well being of pipe installers.
- Meet ASTM Standards for solvent cements used for plastic pipe installation.
- Environmentally Responsible. LEED® Compliant (Leadership in Energy and Environmental Design).

RFL recommends NSF approved IPS weld on solvent cement for reliable and leak proof joints between cPVC pipes and fittings.

NSF Certification:


LUBRIZOL ADVANCED MATERIALS, INC.
Facility: OEVEL, BELGIUM
NSF
ANSI

BUET Certification:

যন্ত্রকৌশল বিভাগ
বাংলাদেশ প্রকৌশল বিশ্ববিদ্যালয়
ঢাকা-১০০০, বাংলাদেশ

Department of Mechanical Engineering
Bangladesh University of Engineering and Technology
Dhaka-1000, Bangladesh

007040
04 AUG 2015

TEST REPORT OF CPVC PIPE

2 August 2015

CLIENT	:	MR. MD. MONIRUZZAMAN CHIEF OPERATING OFFICER (COO) RFL PLASTICS LTD. HEAD OFFICE PRAN-RFL CENTRE 105 MIDDLE BADDA DHAKA-1212
CLIENT'S REFERENCE	:	Memo No. RFL/RPL/250215; Dated: 05.07.2015
UNIVERSITY REFERENCE	:	BRTC NO. 1100-89103/ME/15-16; Dated: 05.07.2015
SAMPLES SUPPLIED	:	i. 20 mm dia. CPVC Pipe ii. 25 mm dia. CPVC Pipe
TEST CONDUCTED BY	:	DEPARTMENT OF MECHANICAL ENGINEERING BUET, DHAKA-1000.

TEST RESULTS

SHORT-TERM HYDROSTATIC PRESSURE TEST
Standard Used: ASTM D-2846

Sample ID	Test Temp. and Duration	Applied Prosaure (psi)	Observations	Remarks
20 mm dia. CPVC Pipe	20°C, 1 hr.	1011	No loukage was observed	OK
25 mm dia. CPVC Pipe	20oC, 1 hr.	1011	No leakage was observed	OK

IMPACT TEST
Standard Used: Client's Recommended Specification

Sample ID	Observations	Remarks
20 mm dia. CPVC Pipe	No failure out of 14 strikes	OK
25 mm dia. CPVC Pipe	No failure out of 14 strikes	OK

HEAT REVERSION TEST
Standard Used: BS 3505 : 1986

Sample ID	Specimen No.	Gauge Length (mm)	Final Length (mm)	Change in Length (%)	Average Change in Length (%)	Acceptable Limit of Change in Length (%)	Remarks
20 mm dia. CPVC Pipe	1	100	94.40	5.60	4.4	5.0	OK
	2		93.70	6.30			
	3		94.78	5.22			
25 mm dia. CPVC Pipe	1	100	95.72	4.28	4.4	5.0	OK
	2		95.50	4.50			
	3		95.55	4.45			

Dr. M.A.H. Mamun
Professor

Sanchita Amin
Assistant Professor

Properties & Advantages

Deterioration resistance

RFL cPVC Pro Pipe & Fittings gives excellent resistance even under the harshest of water conditions so there are none of the purity worries from corrosion of metal pipe or soldered joints.

Less bacterial growth

Bacteria build up with cPVC is far lower than with alternative piping materials - Copper, Steel and other thermoplastics.

No Scale, ditch or leach formation

Even after years of use in the most aggressive conditions, RFL cPVC Pro Pipe & Fittings won't corrode, standing up to low pH water, coastal salt air exposures and corrosive soils. RFL cPVC Pro Pipe & Fittings stays as solid and reliable as the day it was installed. It maintains full water carrying Capacity because its scale resistance means no build up to cause water pressure loss.

Unaffected by chlorine in the water

Some materials may be adversely affected by chlorine contained in the water supply, which can cause breakdown of the polymer chains and potential leaks. In this respect, RFL RFL cPVC Pro Pipe & Fittings is unaffected by the chlorine present in potable water supply.

Low fervid expansion

RFL cPVC Pro Pipe & Fittings has a lower coefficient of thermal expansion than alternative plastics, reducing the amount that the pipe expands when hot water is running, again reducing unsightly 'looping' of the pipe.

Hot water suitable

RFL cPVC Pro Pipe & Fittings is compatible with both hot and cold water. It withstand very high temperature compared to any other thermoplastic plumbing systems. Many solar and electric water heaters have cPVC piping system for heat efficiency and lower installation cost.

Solid, Starchy material

RFL cPVC Pro Pipe & Fittings has a much higher strength than other thermoplastics used in plumbing. This means that cPVC needs less hangers and supports and there is no unsightly looping of the pipe. RFL RFL cPVC Pro Pipe & Fittings Has a higher pressure bearing capability. This leads to the same flow rate with a smaller pipe size.

Fire safety

cPVC has a limiting Oxygen Index (LOI) of 60. Thus in air, RFL cPVC Pro Pipe & Fittings does not support combustion. No flaming drips, does not increase the fire load, low flame spread, low smoke generation.

Easy Plumbing process

cPVC uses a simple, solvent cement jointing method. Tools required are very simple and inexpensive (chamfering tool and pipe cutter only) and avoid the need for an electrical source. Superior insulation : RFL cPVC Pro Pipe & Fittings is more energy efficient than metal pipe. As an insulator it does not lose heat the way metal pipe do. Heat loss and thermal expansion are reduced.

Sanctional world wide

cPVC plumbing system is approved for contact with potable water in wide range of countries including USA, UK, Canada, Germany, France, The Netherlands, Middle East among others. Here in Bangladesh.

Product List

Code	Item Name	Unit	Thickness
70305	CPVC Pipe 1/2"(15mm)X3M-SDR-13.5	Piece	1.40 - 1.90 mm
70306	CPVC Pipe 3/4"(20mm)X3M-SDR-13.5	Piece	1.70 - 2.20 mm
70307	CPVC Pipe 1"(25mm)X3M-SDR-13.5	Piece	2.10 - 2.60 mm
70308	CPVC Pipe 1.25"(32mm)X3M-SDR-13.5	Piece	2.60 - 3.10 mm
70309	CPVC Pipe 1.5"(40mm)X3M-SDR-13.5	Piece	3.10 - 3.60 mm
70310	CPVC Pipe 2"(50mm)X3M-SDR-13.5	Piece	4.00 - 4.60 mm
70311	CPVC Pipe 1/2"(15mm)X3M-SDR-11	Piece	1.70-2.20 mm
70312	CPVC Pipe 3/4"(20mm)X3M-SDR-11	Piece	2.00-2.50 mm
70313	CPVC Pipe 1"(25mm)X3M-SDR-11	Piece	2.60-3.10 mm
70314	CPVC Pipe 1.25"(32mm)X3M-SDR-11	Piece	3.20-3.70 mm
70315	CPVC Pipe 1.5"(40mm)X3M-SDR-11	Piece	3.80-4.30 mm
70316	CPVC Pipe 2"(50mm)X3M-SDR-11	Piece	4.90-5.50 mm
706169	2.5" CPVC Pipe Schedule-40	Piece	1 mm
706191	CPVC Pipe Schedule-40 3"	Piece	1 mm
706192	CPVC Pipe Schedule-40 4"	Piece	1 mm

cPVC Pipe

Code	Item Name	Unit	DO Unit
70481	CPVC Reducer Bushing 3/4"X1/2"	Piece	1
70482	CPVC Reducer Bushing 1"X1/2"	Piece	1
70337	CPVC Reducer Bushing 1"X3/4"	Piece	1
70483	CPVC Reducer Bushing 1.25"X1/2"	Piece	1
70338	CPVC Reducer Bushing 1.25"X3/4"	Piece	1
70339	CPVC Reducer Bushing 1.25"X1"	Piece	1
70340	CPVC Reducer Bushing 1.5"X1/2"	Piece	1
70341	CPVC Reducer Bushing 1.5"X3/4"	Piece	1
70342	CPVC Reducer Bushing 1.5"X1"	Piece	1
70343	CPVC Reducer Bushing 1.5"X1.25"	Piece	1
706266	CPVC Reducer Bushing 2"X1/2"	Piece	1
706267	CPVC Reducer Bushing 2"X3/4"	Piece	1
70344	CPVC Reducer Bushing 2"X1"	Piece	1
70484	CPVC Reducer Bushing 2"X1.25"	Piece	1
70345	CPVC Reducer Bushing 2"X1.5"	Piece	1
706195	CPVC Reducer Bushing 2.5" x1.25" (sch-40)	Piece	1
706265	CPVC Reducer Bushing 2.5"X1.5"	Piece	1
706264	CPVC Reducer Bushing 2.5"X2"	Piece	1
706196	CPVC Reducer Bushing 3" x 1.5" (sch-40)	Piece	1
706197	CPVC Reducer Bushing 3"x 2" (sch-40)	Piece	1
706198	CPVC Reducer Bushing 3" x2.5" (sch-40)	Piece	1
706199	CPVC Reducer Bushing 4" x2" (sch-40)	Piece	1
706200	CPVC Reducer Bushing 4" x2.5" (sch-40)	Piece	1
706315	CPVC Reducer Bushing 4" x3" (sch-40)	Piece	1

cPVC Reducer Bushing

cPVC Transition Bushing

Code	Item Name	Unit	DO Unit
70485	CPVC Transition Bushing 1/2"	Piece	1
70486	CPVC Transition Bushing 3/4"	Piece	1
70487	CPVC Transition Bushing 1"	Piece	1
70488	CPVC Transition Bushing 1.25"	Piece	1
70489	CPVC Transition Bushing 1.5"	Piece	1
70490	CPVC Transition Bushing 2"	Piece	1
706268	CPVC Transition Bushing 2.5"X2" CTS	Piece	1
706316	CPVC Transition Bushing 3 IPS X2CTS	Piece	1
706317	CPVC Transition Bushing 4 IPS X 2 CTS	Piece	1

cPVC Reducer Coupling

Code	Item Name	Unit	DO Unit
70326	CPVC Reducer Coupling 3/4" X 1/2"	Piece	1
70327	CPVC Reducer Coupling 1" X 1/2"	Piece	1
70328	CPVC Reducer Coupling 1" X 3/4"	Piece	1
70329	CPVC Reducer Coupling 1.25" X 1/2"	Piece	1
70330	CPVC Reducer Coupling 1.25" X 3/4"	Piece	1
70477	CPVC Reducer Coupling 1.25" X 1"	Piece	1
706172	CPVC Reducer Coupling 1.5" X 1/2"	Piece	1
70331	CPVC Reducer Coupling 1.5" X 3/4"	Piece	1
70332	CPVC Reducer Coupling 1.5" X 1"	Piece	1
70333	CPVC Reducer Coupling 1.5" X 1.25"	Piece	1
70478	CPVC Reducer Coupling 2" X 1/2"	Piece	1
706173	CPVC Reducer Coupling 2" X 3/4"	Piece	1
70334	CPVC Reducer Coupling 2" X 1"	Piece	1
70336	CPVC Reducer Coupling 2" X 1.25"	Piece	1
70335	CPVC Reducer Coupling 2" X 1.5"	Piece	1

cPVC BRASS FPT COUPLING

Code	Item Name	Unit	DO Unit
706275	CPVC BRASS FPT COUPLING 3/4"x 1/2"	Piece	1
706276	CPVC BRASS FPT COUPLING 1"x 1/2"	Piece	1
706277	CPVC BRASS FPT COUPLING 1"x 3/4"	Piece	1

cPVC Coupling

Code	Item Name	Unit	DO Unit
70320	CPVC Coupling 1/2"	Piece	1
70321	CPVC Coupling 3/4"	Piece	1
70322	CPVC Coupling 1"	Piece	1
70323	CPVC Coupling 1.25"	Piece	1
70324	CPVC Coupling 1.5"	Piece	1
70325	CPVC Coupling 2"	Piece	1
706174	CPVC Coupling 2.5" (sch-40)	Piece	1
706325	Cpvc Coupling 3" (sch-40)	Piece	1
706326	Cpvc Coupling 4" (sch-40)	Piece	1

cPVC Transition Coupling

Code	Item Name	Unit	DO Unit
706170	CPVC Transition Coupling 3/4"x 3/4"	Piece	1
706171	CPVC Transition Coupling 1"x 1"	Piece	1

cPVC Tee

Code	Item Name	Unit	DO Unit
70361	CPVC Tee 1/2"	Piece	1
70362	CPVC Tee 3/4"	Piece	1
70364	CPVC Tee 1"	Piece	1
70365	CPVC Tee 1.25"	Piece	1
70366	CPVC Tee 1.5"	Piece	1
70367	CPVC Tee 2"	Piece	1
706176	CPVC Tee 2.5" (sch-40)	Piece	1
706193	CPVC Tee 3" (sch-40)	Piece	1
706194	CPVC Tee 4" (sch-40)	Piece	1

Code	Item Name	Unit	DO Unit
706175	CPVC Reducing Tee 1/2"X1/2"X3/4"	Piece	1
70363	CPVC Tee 3/4"X1/2"X3/4"	Piece	1
70493	CPVC Reducing Tee 3/4"X1/2"	Piece	1
70346	CPVC Reducing Tee 1"X1/2"	Piece	1
70347	CPVC Reducing Tee 1"X3/4"	Piece	1
70491	CPVC Reducing Tee 1.25"X1/2"	Piece	1
70348	CPVC Reducing Tee 1.25"X3/4"	Piece	1
70349	CPVC Reducing Tee 1.25"X1"	Piece	1
70350	CPVC Reducing Tee 1.5"X1/2"	Piece	1
70351	CPVC Reducing Tee 1.5"X3/4"	Piece	1
70352	CPVC Reducing Tee 1.5"X1"	Piece	1
70492	CPVC Reducing Tee 1.5"X1.25"	Piece	1
70494	CPVC Reducing Tee 2"X1/2"	Piece	1
70353	CPVC Reducing Tee 2"X3/4"	Piece	1
70355	CPVC Reducing Tee 2"X1"	Piece	1
70354	CPVC Reducing Tee 2"X1.25"	Piece	1
70356	CPVC Reducing Tee 2"X1.5"	Piece	1

cPVC Reducing Tee

Code	Item Name	Unit	DO Unit
70357	CPVC Brass FPT Tee 1/2"	Piece	1
70358	CPVC Brass FPT Tee 3/4"X 1/2"	Piece	1
70495	CPVC Brass FPT Tee 3/4"	Piece	1
70359	CPVC Brass FPT Tee 1"X 1/2"	Piece	1
706278	CPVC Brass FPT Tee 1"X1"X3/4"	Piece	1
70360	CPVC Brass FPT Tee 1.25"	Piece	1
70496	CPVC Brass FPT Tee 1.25"X1/2"	Piece	1

cPVC Brass FPT Tee

Code	Item Name	Unit	DO Unit
70497	CPVC Cross T-1/2"	Piece	1
70498	CPVC Cross T-3/4"	Piece	1

cPVC Cross

Code	Item Name	Unit	DO Unit
70368	CPVC Elbow 90° 1/2"	Piece	1
70369	CPVC Elbow 90° 3/4"	Piece	1
70370	CPVC Elbow 90° 1"	Piece	1
70371	CPVC Elbow 90° 1.25"	Piece	1
70372	CPVC Elbow 90° 1.5"	Piece	1
70373	CPVC Elbow 90° 2"	Piece	1
706269	CPVC Elbow 90° 2.5" (sch-40)	Piece	1
706318	Cpvc Elbow 90 Degree 3" (sch-40)	Piece	1
706319	Cpvc Elbow 90 Degree 4" (sch-40)	Piece	1

cPVC Elbow 90°

Code	Item Name	Unit	DO Unit
70374	CPVC Reducer Elbow 90° 3/4"X1/2"	Piece	1
706184	CPVC Reducer Elbow 90° 1"X1/2"	Piece	1
70375	CPVC Reducer Elbow 90° 1"X3/4"	Piece	1
70376	CPVC Reducer Elbow 90° 1.25"X1/2"	Piece	1
70377	CPVC Reducer Elbow 90° 1.25"X1"	Piece	1
70378	CPVC Reducer Elbow 90° 2"X1"	Piece	1

cPVC Reducer Elbow 90°

Code	Item Name	Unit	DO Unit
70581	CPVC Elbow 45°-1/2"	Piece	1
70582	CPVC Elbow 45°-3/4"	Piece	1
70445	CPVC Elbow 45° 1"	Piece	1
70446	CPVC Elbow 45° 1.25"	Piece	1
70447	CPVC Elbow 45° 1.5"	Piece	1
70448	CPVC Elbow 45° 2"	Piece	1
706270	CPVC Elbow 45°-2.5" (sch-40)	Piece	1
706320	Cpvc Elbow 45 Degree 3" (sch-40)	Piece	1
706321	Cpvc Elbow 45 Degree 4" (sch-40)	Piece	1

cPVC Elbow 45°

cPVC Brass FPT 90° Elbow

Code	Item Name	Unit	DO Unit
70379	CPVC Brass FPT 90° Elbow 1/2"	Piece	1
70499	CPVC Brass FPT 90° Elbow 3/4"X1/2"	Piece	1
70577	CPVC Brass FPT 90° Elbow 3/4"X3/4"	Piece	1
70578	CPVC Brass FPT 90° Elbow 1"	Piece	1
70579	CPVC Brass FPT 90° Elbow 1"X1/2"	Piece	1
70580	CPVC Brass FPT 90° Elbow 1.25"	Piece	1

cPVC Long Radious Bend 90°

Code	Item Name	Unit	DO Unit
706177	1/2" CPVC Long Radious Bend 90 Deg	Piece	1
706178	3/4" CPVC Long Radious Bend 90 Deg	Piece	1
706179	1" CPVC Long Radious Bend 90 Deg	Piece	1
706261	1.25" CPVC Long Radious Bend 90 Deg	Piece	1
706262	1.5" CPVC Long Radious Bend 90 Deg	Piece	1
706263	2" CPVC Long Radious Bend 90 Deg	Piece	1

cPVC Step Over Bend

Code	Item Name	Unit	DO Unit
70583	CPVC Step Over Bend-1/2"	Piece	1
70584	CPVC Step Over Bend-3/4"	Piece	1

cPVC THD Male Adapter

Code	Item Name	Unit	DO Unit
70449	CPVC THD Male Adapter 1/2"	Piece	1
70450	CPVC THD Male Adapter 3/4"	Piece	1
70458	CPVC THD Male Adapter 1"	Piece	1
70459	CPVC THD Male Adapter 1.25"	Piece	1
706180	CPVC THD Male Adapter 1.5"	Piece	1
706181	CPVC THD Male Adapter 2"	Piece	1

cPVC THD Female Adapter

Code	Item Name	Unit	DO Unit
706185	CPVC THD Female Adapter 1/2"	Piece	1
706186	CPVC THD Female Adapter 3/4"	Piece	1
706187	CPVC THD Female Adapter 1"	Piece	1
706188	CPVC THD Female Adapter 1.25"	Piece	1
706189	CPVC THD Female Adapter 1.5"	Piece	1
706190	CPVC THD Female Adapter 2"	Piece	1

Male Adaptor Brass cPVC THD

Code	Item Name	Unit	DO Unit
70398	Male Adaptor Brass CPVC THD 1/2"	Piece	1
70399	Male Adaptor Brass CPVC THD 3/4"	Piece	1
70434	Male Adaptor Brass CPVC THD 1"	Piece	1
70435	Male Adaptor Brass CPVC THD 1.25"	Piece	1
70436	Male Adaptor Brass CPVC THD 1.5"	Piece	1
70437	Male Adaptor Brass CPVC THD 2"	Piece	1
706279	Male Adaptor Brass CPVC THD 1"X1/2"	Piece	1
70591	CPVC Reducing MABT 3/4"1/2"	Piece	1
70592	CPVC Reducing FABT 3/4"1/2"	Piece	1

cPVC Female Brass Adaptor

Code	Item Name	Unit	DO Unit
70585	CPVC Female Brass Adaptor-1/2"	Piece	1
70586	CPVC Female Brass Adaptor-3/4"	Piece	1
70587	CPVC Female Brass Adaptor-1"	Piece	1
70588	CPVC Female Brass Adaptor-1.25"	Piece	1
70613	CPVC Female Brass Adaptor-1.5"	Piece	1
70589	CPVC Female Brass Adaptor-2"	Piece	1

cPVC Cap

Code	Item Name	Unit	DO Unit
70438	CPVC Cap 1/2"	Piece	1
70439	CPVC Cap 3/4"	Piece	1
70440	CPVC Cap 1"	Piece	1
70441	CPVC Cap 1.25"	Piece	1
70442	CPVC Cap 1.5"	Piece	1
70443	CPVC Cap 2"	Piece	1
706327	CPVC Cap 2.5" (sch-40)	Piece	1
706328	CPVC Cap 3" (sch-40)	Piece	1
706329	CPVC Cap 4" (sch-40)	Piece	1

cPVC Union

Code	Item Name	Unit	DO Unit
70386	CPVC Union 1/2"	Piece	1
70387	CPVC Union 3/4"	Piece	1
70388	CPVC Union 1"	Piece	1
70389	CPVC Union 1.25"	Piece	1
70390	CPVC Union 1.5"	Piece	1
70391	CPVC Union 2"	Piece	1

cPVC Ball Valve

Code	Item Name	Unit	DO Unit
70380	CPVC Ball Valve 1/2"	Piece	1
70381	CPVC Ball Valve 3/4"	Piece	1
70382	CPVC Ball Valve 1"	Piece	1
70383	CPVC Ball Valve 1.25"	Piece	1
70384	CPVC Ball Valve 1.5"	Piece	1
70385	CPVC Ball Valve 2"	Piece	1
706322	CPVC Ball Valve 2.5" (sch-40)	Piece	1
706323	CPVC Ball Valve 3" (sch-40)	Piece	1
706324	CPVC Ball Valve 4" (sch-40)	Piece	1

cPVC Concealed Valve

Code	Item Name	Unit	DO Unit
706273	CPVC Concealed Valve 1/2"	Piece	1
706274	CPVC Concealed Valve 3/4"	Piece	1

Plastic Strap

Code	Item Name	Unit	DO Unit
70392	Plastic Strap 1/2"	Piece	1
70393	Plastic Strap 3/4"	Piece	1
70394	Plastic Strap 1"	Piece	1
70395	Plastic Strap 1.25"	Piece	1
70396	Plastic Strap 1.5"	Piece	1
70397	Plastic Strap 2"	Piece	1

Code	Item Name	Unit	DO Unit
706182	CPVC End Plug 1/2"	Piece	1
706183	CPVC End Plug 3/4"	Piece	1

cPVC End Plug

Code	Item Name	Unit	DO Unit
70593	SOLVENT CEMENT 118ML	Piece	1
70444	SOLVENT CEMENT 237ML	Piece	1
70594	SOLVENT CEMENT 473ML	Piece	1
70595	SOLVENT CEMENT 946ML	Piece	1

Solvent Cement

Code	Item Name	Unit	DO Unit
706330	SOLVENT CEMENT 473 ML CPVC 724	Piece	1
706271	SOLVENT CEMENT 946 ML CPVC 724	Piece	1
706331	CPVC IPS WELD-ON PREMIER 473 ML P 70	Piece	1
706272	CPVC IPS WELD-ON PREMIER 946 ML P 70	Piece	1

* Only for 2" to Above

Solvent Cement

Code	Item Name	Unit	DO Unit
70590	CPVC Cutter (1/2-1")	Piece	1

cPVC Cutter

Joining of RFL cPVC Pro Pipe & Fittings

LACERATION

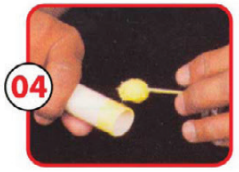
In order to make a proper and neat joint, measure the pipe length accurately and make a small mark. Ensure that the pipe and fittings are size compatible. You can easily cut with a wheel type plastic pipe cutter or hacksaw blade. Cutting tubing as squarely as possible provides optimal bonding area within a joint.

DEBURRING/BEVELING

Burrs and filings can prevent proper contact between tube and fitting during assembly and should be removed from the outside and inside of the pipe. Debarking tool, pocket knife or file are suitable for this. A slight bevel on the end of the tubing will ease entry of the tubing into the fitting socket.

FITTING PREPARATION

Using a clean, dry rag, wipe dirt and moisture from the fitting sockets and tubing end. The tubing should make contact with the socket wall 1/3 to 2/3 of the way into the fitting socket.

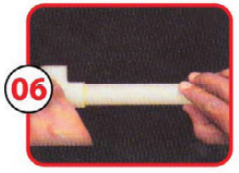


SOLVENT CEMENT APPLICATION

use only cPVC cement or an all - purpose cement conforming to ASTM F 493 or joint failure may result. When making a joint, apply a heavy, even coat of cement to the pipe end. Use the same applicator without additional cement to apply a thin coat inside the fitting socket. Too much cement can cause clogged water ways.

ASSEMBLY

Immediately insert the tubing into the fitting socket, rotate the tube 1/4 to 1/2 turn while inserting. This motion ensures and even distribution of cement within the joint. Properly align the fittings. Hold the assembly for approximately 10 seconds, allowing the joint to set-up.



SET AND CURE

Solvent cement set and cure times are a function of pipe size, temperature and relative humidity. Curing time is shorter for drier environments, smaller sizes and higher temperatures. It requires 10 to 20 minutes for perfect joint.

Deterioration resistant

For Hot & Cold water

Less bacterial growth

Fire security

Easy cold casting way

Pure water

Affordable

Sanctional Worldeide

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cPVC Pro

PIPE & FITTINGS

The Hot Option