



# IDEAL FOR COLD WATER APPLICATIONS











# ABOUT FLOWKEM

Flowkem started the journey from manufacturing Ball– valves and was incorporated in 2014 with a vision to provide best quality pipes and fittings across the country. Today we are an ISO 9001:2015 certified organisation whose aim is to make quality products available to every household and industry at best prices in the country.

Our manufacturing facility located at Ahmedabad (Gujarat) is equipped with modern and state of art machinery and infrastructure, covering a total area of 16 acres of which 22000 square meters of constructed area with 05 extrusion machines and 55 Injection moulding machines. Our products are produced in accordance with the Indian standards set by Bureau of Indian Standards (BIS) and other approving agencies.

We manufacture CPVC, UPVC, SWR pipes and fittings & Agriculture Pipes and Moulded fittings. The pipes and fittings are available in various sizes, pressure classes and diameters fit for diversified applications in both agricultural as well as non-agricultural sectors including housing, industrial and construction.

Under the leadership of Mr. Shailesh Patel, Managing Director, Flowkem has expanded into the plumbing industry. He is a person of great vision, exemplary talents and many achievements. His energy and enthusiasm have brought the Company to achieve many milestones. Beginning the journey from manufacturing Ball-valves in 2002 to venturing into plumbing and drainage systems, Flowkem has grown to be one of the popular brands in many markets in India.

We are growing at a fast pace and working with numerous channel partners across India which help us in reaching customers effectively. We also have an efficient marketing & sales infrastructure supported by professional team.

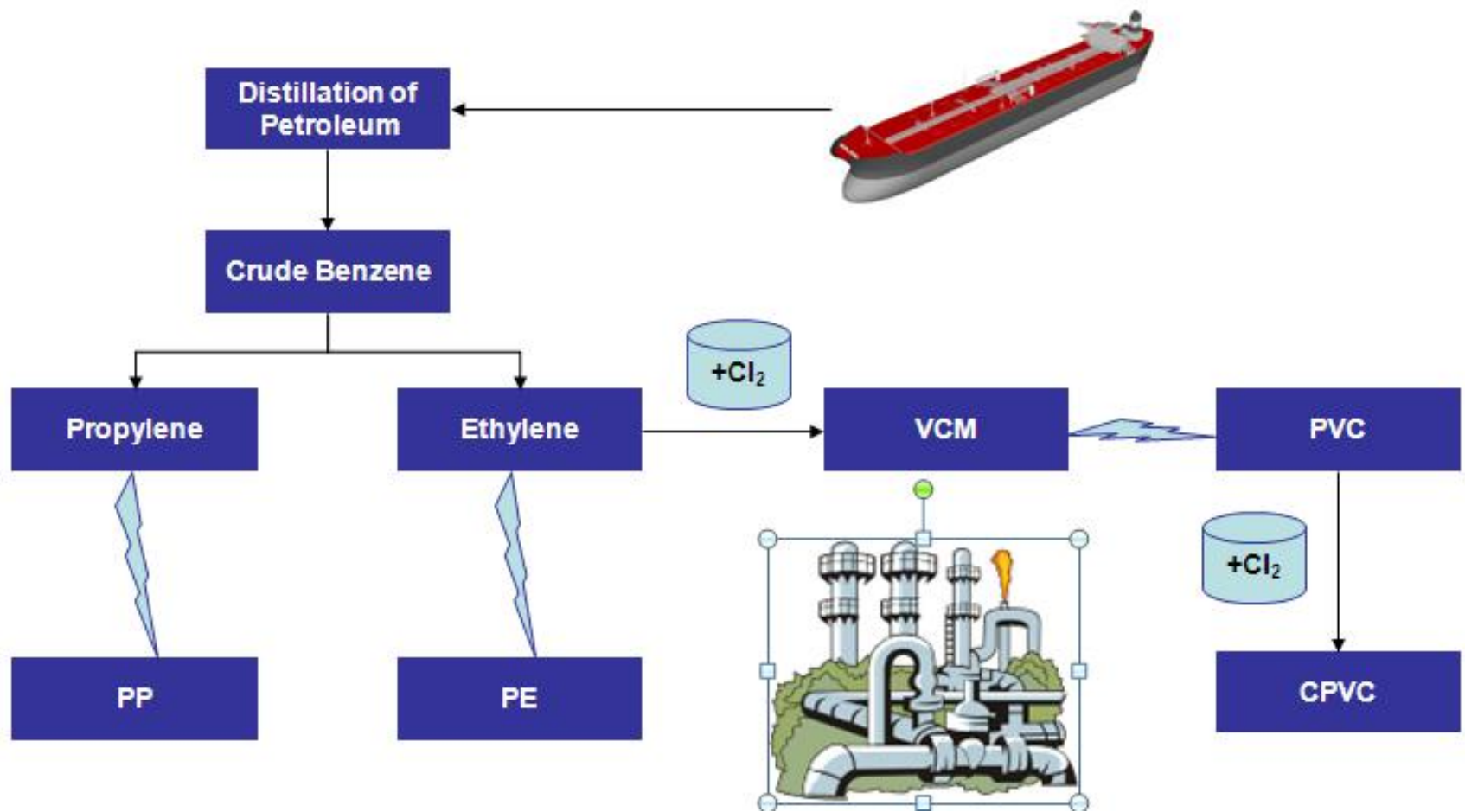
FLOWKEM aims to create its niche in plumbing and other water solution products. The customers' satisfaction is the most important goal for FLOWKEM.

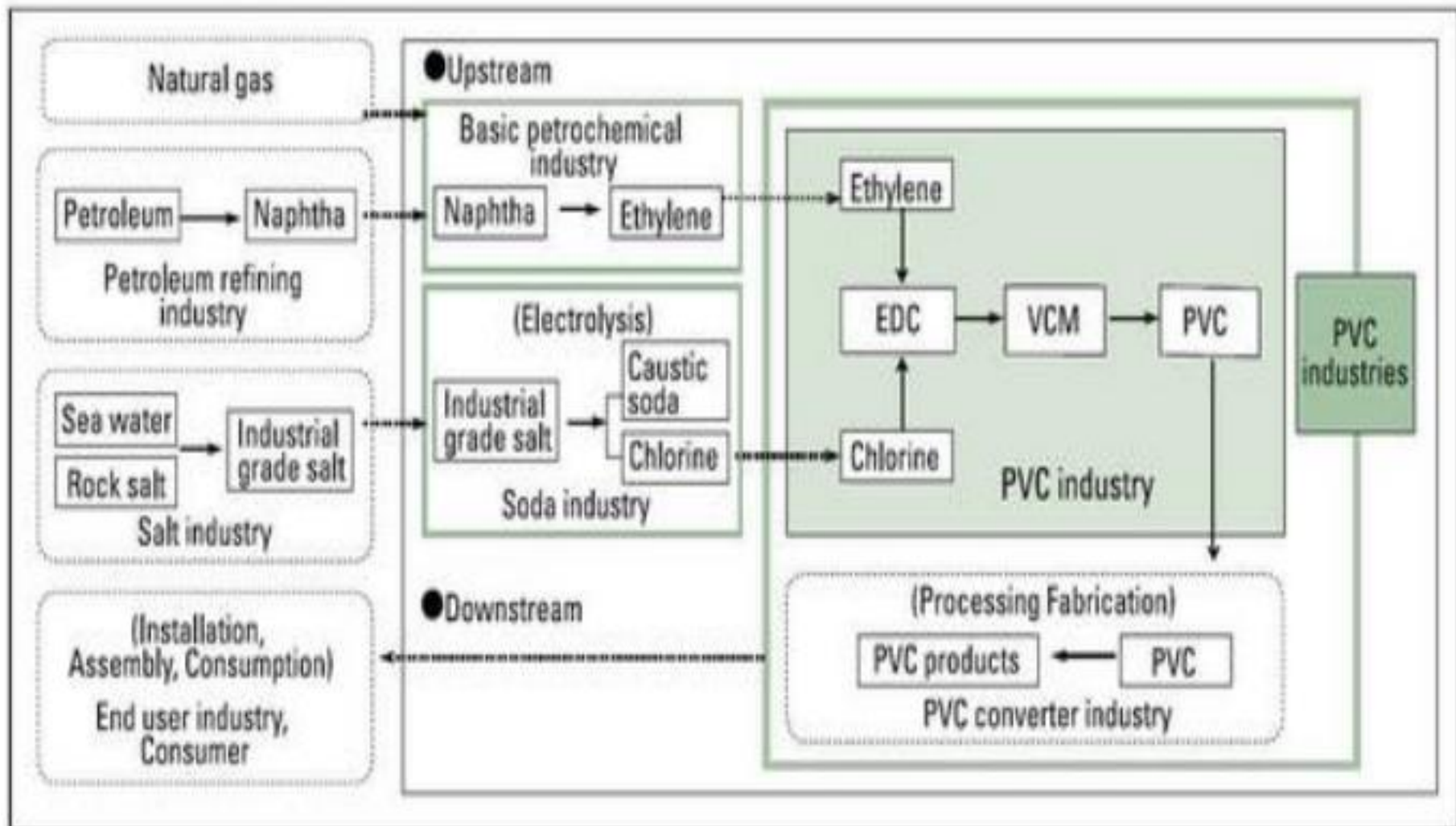
# Contents

01. About Thermoplastics	( Page No. 09-12)
02. 10 Assurance	( Page No. 13 - 14)
04. What is UPVC ASM D Pipes and Fittings?	(Page No. - 15)
05. Why Only Flowkem UPVC ASTM D Pipes and fittings?	( Page No. 16)
06. Standards and Codes	( Page No. 17 )
08. Technical specification detail of UPVC Pipe.	(Page No.18 – 19 )
09 . Graphical representation of Velocity, discharge and Head loss as per Hazen -williams equations	(Page-20-22)
09. QC Checks SOP at Flowkem	(Page No. 23– 24 )
10. Handling and Storage	( Page No. 24 )
11. Solvent Cementing Instructions	( Page No. 25 )
12. Installation Guideline of Upvc Pipes & Fittings.	( Page No. 26 )
13. Product portfolio of upvc ASTM D fitting	( Page No. 27 - 30 )
14. Technical specification of UPVC ASTM D Fittings	( Page No. 31)
15. Field of Application	( Page No. 32)
15. FAQs.	( Page No. 32 - 33)

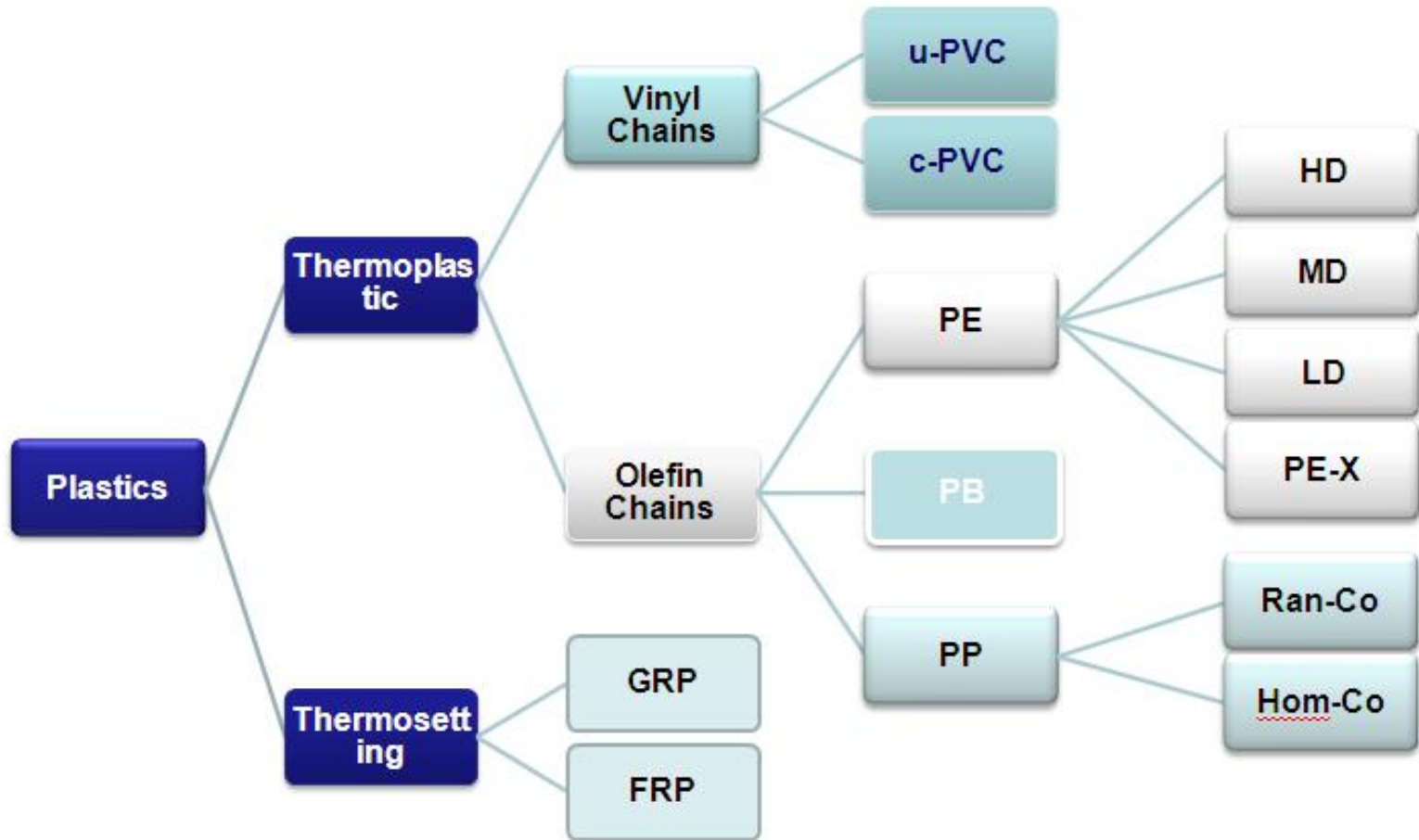


# Thermoplastics – An Alphabet Soup





# Polymers in Piping



### BASIC PROPERTIES OF UPVC ARE AS BELOW

Sr. No.	Property	Units	Specified Value
1	Density	g/cm <sup>3</sup>	1.3-1.45
2	Thermal conductivity	w/(m.k)	0.14 - 0.28
3	Yield strength	MPa	31 - 60
4	Young's modulus	psi	4,90,000
5	Flexural strength (yield)	psi	10,500
6	Compression strength	psi	9500
7	Coefficient of thermal expansion (linear)	mm(mm <sup>''</sup> c)	5 x 10 <sup>-5</sup>
8	Vicat B	°C	65-100
9	Resistivity	Qm	10 <sup>16</sup>
10	Surface resistivity	Q	10 <sup>13</sup> - 10 <sup>14</sup>

# 10 ASSURANCES

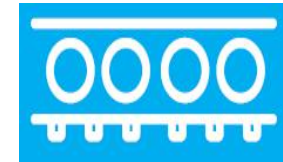
❖ STATE OF ART  
MANUFACTURING FACILITIES



❖ ADVANCED MACHINERY  
FOR CONDESCENDING QUALITY



❖ ADVANCED MATERIAL  
HANDLING SYSTEMS



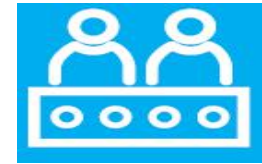
❖ 100% INCOMING RAW & PACKING  
MATERIALS INSPECTIONS



❖ HIGH DIMENSIONAL ACCURACY  
TO MAINTAIN QUALITY OF  
EACH PIECE, TO ENSURE  
A PRODUCT DEFFECT FREE



❖ STRICT QUALITY  
CHECKS AT EVERY STAGE  
OF PRODUCTION



❖ 100% FINISHED GOODS  
INSPECTION



❖ MULTIPLE QUALITY CHECKS  
FOR UPVC PIPE & MOULDED WITH OR  
WITHOUT BRASS FITTINGS THAT DISPATCHES  
FROM THE FLOWKEM FACTORY



❖ LAB TESTS PERFORMED  
FOR EVERY BATCH PRODUCED



❖ ROUTINE TEST CARRIED OUT AT  
EXTERNAL LAB LIKE CIPET



# WHAT IS UPVC ASTM D PIPES AND FITTINGS ?

**Polyvinyl polyvinyl chloride** abbreviated: **PVC**) is the world's third-most widely produced synthetic [plastic polymer](#) (after [polyethylene](#) and [polypropylene](#)). About 40 million tons of PVC are produced each year. PVC comes in two basic forms: rigid (sometimes abbreviated as RPVC) and flexible. The rigid form of PVC is used in construction for pipe and in profile applications such as doors and windows.

Therefore, uPVC pipes are most commonly used for cold water applications in plumbing, water supply, underground drainage and sewage lines.

Due to the ability of uPVC pipe to withstand extreme movement and bending, it is also increasingly used in earthquake prone areas. It can withstand rigorous shaking of earth without experiencing any damages.

The smooth surface of the pipe is also resistant to bacterial contamination such as e.coli. Therefore, many water companies rely on uPVC pipes in their systems in order to keep them free of contamination.

## WHY ONLY FLOWKEM UPVC ASTM D PIPE AND FITTINGS?

- ❖ Flowkem UPVC ASTM D pipes and fittings make ensure proper flow.
- ❖ High degree of accuracy at manufacturing ensures perfect dimensional control.
- ❖ UPVC ASTM D pipes and fittings are non-reactive to most acids, alkalis, effluents, salt, minerals etc.
- ❖ UPVC ASTM D pipes and fittings withstand high flow rates and due to smooth surface there is no scaling or depositions or chocking.
- ❖ UV Stabilized to protect from direct sunlight while being operational.
- ❖ Easy to installation and maintenance.
- ❖ UPVC ASTM D PIPE is a non-conductor of electricity, and therefore is not subject to galvanic or electrolytic action.
- ❖ Does not support fire and provides good resistance to combustion.
- ❖ Corrosion and rust proof which confirms longer durability of the product.
- ❖ Cost effective



# STANDARDS AND CODES.

## STANDARDS FOR PIPES AND FITTINGS

UPVC ASTM D PIPES AND FITTINGS ARE MANUFACTURED IN SIZE 1/2" TO 2" IN CLASS SCH 40 & SCH 80

<i>Class of pipes/Fittings</i>	<i>Standard</i>	<i>Sizes available</i>	<i>Class of pipes/Fittings</i>	<i>Standard</i>	<i>Sizes available</i>
UPVC ASTM D PPR SCH 40	ASTM D 1785	1/2" TO 2"	UPVC ASTM D PPR SCH 80	ASTM D 1785	1/2" TO 2"
UPVC ASTM D PPR SCH 80	ASTM D 2467	1/2" TO 2"			

# TECHNICAL SPECIFICATION OF UPVC PIPE AS PER ASTM D1785

UPVC PIPE SCH 40 & SCH 80 TECHNICAL SPECIFICATION AS PER ASTM D1785

<i>Nominal Pipe Size (Inch)</i>	<i>Outside Diameter (mm.)</i>	<i>Tolerance (mm.)</i>	<i>Out of Roundness (mm.)</i>	<i>Wall thickness (mm.)</i>			
				<i>SCH 40</i>		<i>SCH 80</i>	
				<i>Min</i>	<i>Tolerance</i>	<i>Min</i>	<i>Tolerance</i>
<b>½"</b>	21.34	± 0.10	± 0.20	2.77	+0.51	3.73	+0.51
<b>¾"</b>	26.67	± 0.10	± 0.25	2.87	+0.51	3.91	+0.51
<b>1"</b>	33.40	± 0.13	± 0.25	3.38	+0.51	4.55	+0.53
<b>1 ¼"</b>	42.16	± 0.13	± 0.30	3.56	+0.51	4.85	+0.58
<b>1 ½"</b>	48.26	± 0.15	± 0.30	3.68	+0.51	5.08	+0.61
<b>2"</b>	60.32	± 0.15	± 0.30	3.91	+0.51	5.54	+0.66

## Pressure Rating - uPVC Pipes Schedule 40

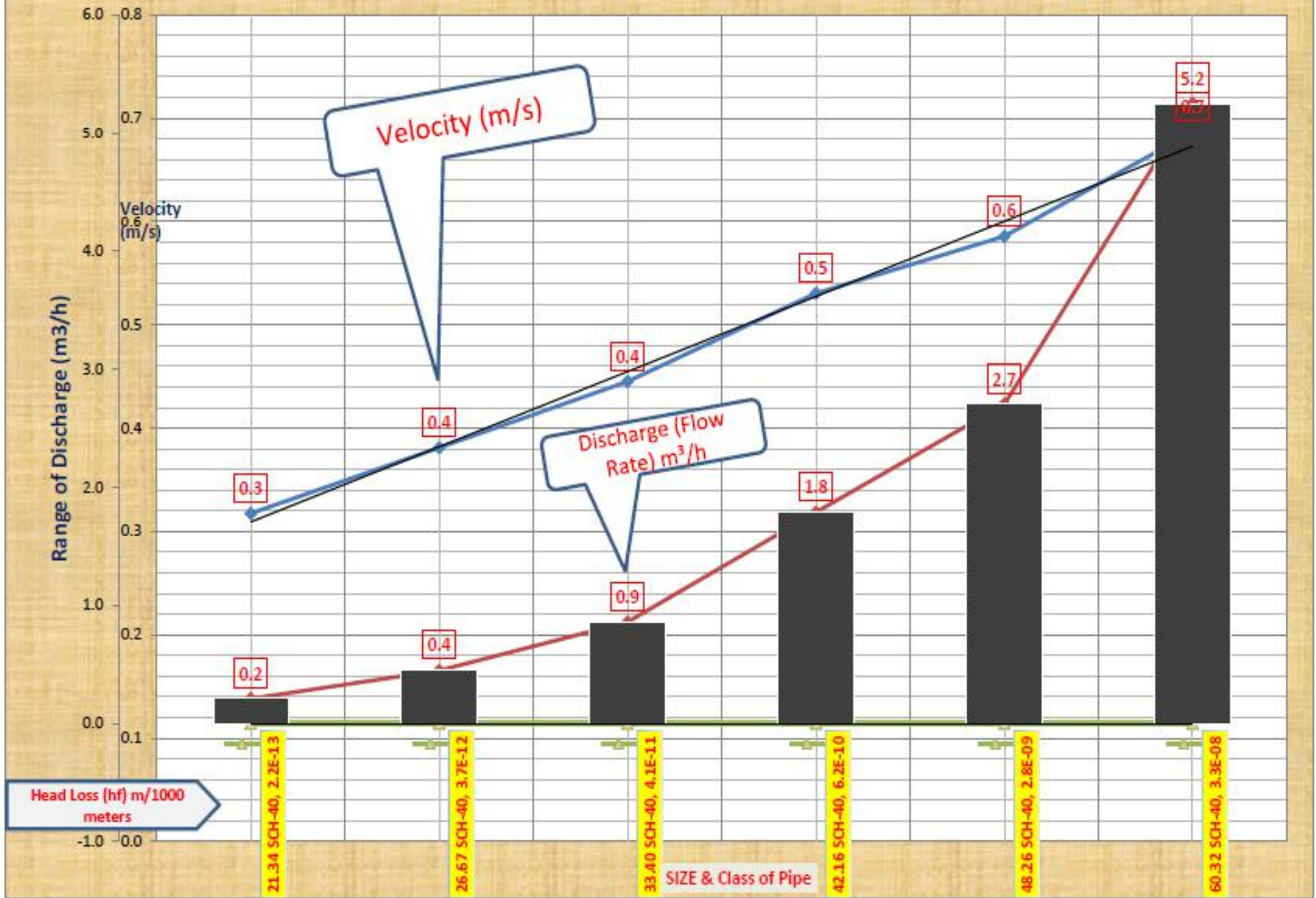
Nominal (in)	Size (mm)	Average Outer Diameter (mm)	Min. wall thickness (mm)	Max. work pressure rating (kg/cm <sup>2</sup> ) at 23°C	Burst Pressure (kg/cm <sup>2</sup> )
1/2	15	21.34	2.77	42.22	134.30
3/4	20	26.67	2.87	33.75	108.29
1	25	33.40	3.38	31.61	101.26
1 1/4	32	42.16	3.56	26.00	83.00
1 1/2	40	48.26	3.68	23.25	74.54
2	50	60.32	3.91	19.68	62.61

## Pressure Rating - uPVC Pipes Schedule 80

Nominal (in)	Size (mm)	Average Outer Diameter (mm)	Min. wall thickness (mm)	Max. work pressure rating (kg/cm <sup>2</sup> ) at 23°C	Burst Pressure (kg/cm <sup>2</sup> )
1/2	15	21.34	3.73	59.76	191.30
3/4	20	26.67	3.91	48.54	154.69
1	25	33.40	4.55	44.26	142.05
1 1/4	32	42.16	4.85	36.61	116.76
1 1/2	40	48.26	5.08	33.04	106.15
2	50	60.32	5.54	28.14	90.65

# VELOCITY, DISCHARGE AND FRICTION LOSS FOR SCH-40 UPVC PIPES

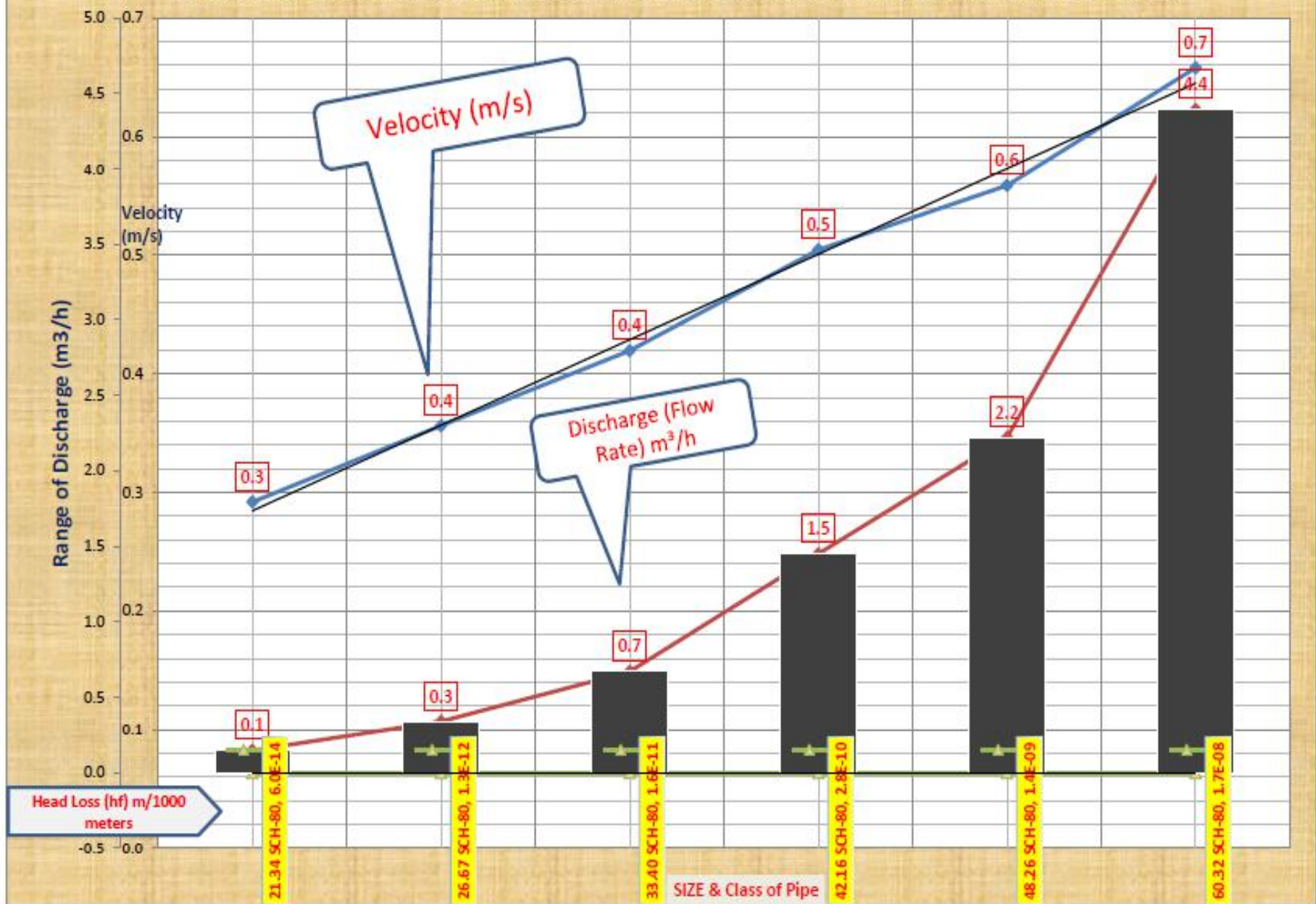
Graphical representation of water flow for UPVC ASTM D PIPE (SCH -40) as per Hazen-Williams Equation





# VELOCITY, DISCHARGE AND FRICTION LOSS FOR SCH-80 UPVC PIPES

Graphical representation of water flow for UPVC ASTM D PIPE (SCH -80) as per Hazen-Williams Equation



Note : For the calculation of Slope of Hydraulic Gradient (S), considered height(H) 1 meter. (Drop by length of pipe) and Pipe length (L) 100 meters.

For the calculated data of velocity, flow rates and head loss due to friction, please contact our technical Team.

# QC Checks SOP at Flowkem

The pipes and fittings manufactured at Flowkem follow a stringent quality control process before being rolled out to the market, in order to supply a defect free system to its users.

- ❖ **Dimensions:** To ensure that all pipe dimensions particularly wall thickness and outer dimensions (roundness), confirm to the appropriate standards.
- ❖ **Flattening Test Samples:** are compressed so that opposite walls are brought together without pipe cracking, Good measure of correct extrusion techniques during production.
- ❖ **Drop Impact test:** Weights are dropped on the pipe to observe any crack or failure.
- ❖ **Heat reversion test:** How much the pipe changes in length when heated in an oven and left to cool this is a measure of residual stresses left in the pipe during production process.
- ❖ **Tensile Strength:** The maximum stress that a pipe can withstand while being stretched or pulled.
- ❖ **Density:** The **density** of an object is one of its most important and easily-measured physical properties. **Densities** are widely used to identify pure substances and to characterize and estimate the composition of many kinds of mixtures.
- ❖ **Burst Pressure:** Maximum pressure before pipes and fittings burst, again must be over three times normal pressure rating.
- ❖ **Hydrostatic pressure test:** System is to sustain up to 15 minutes a pressure of 1.5 times working pressure without leakage.



# Fittings

- ❖ **Stress Relief Test:** To determine the level of internal stress by heating the fitting in an air circulated oven @ 150oC. There should not be any blisters, weld line splitting or any cracking.



## Pipes & Fittings

- ❖ **Visual Appearance:** To ensure that all pipes and fittings are uniform in colour and free visual effects such as black dots, scratches, burn marks, etc.
- ❖ **Dimensions:** To ensure that all pipes and fittings conform to the appropriate Standards particularly wall thickness, socket diameters and socket depth.



## Handling of Pipes

- ❖ The pipes should be checked for any forms of transport damage due to shift in loads or improper handling/treatment. Visually examine the end of pipes for any cracks or damage.
- ❖ The tendency to throw or drop the pipes to the floor should be avoided. Do not drag or push the pipes from a truck bed. Contact of the pipes with any sharp object should be totally avoided.

## Storage of Pipes

- ❖ The Pipes should be stored indoors or below the shadow and dry area.
- ❖ Protect the pipes from sun light, to reduce the effect of UV rays.
- ❖ If pipes of same diameter but different classes are being stacked together, place the thicker pipes below. i.e., stack SCH 80 under SCH 40.



# Solvent Cementing Instructions

**When using solvent cement on the pipe, there are some basic safety point should be kept in your mind.**

- ❖ After use of solvent cement on the pipe / fitting ensure to put the lid back on the solvent cement can and tighten the lid slightly to avoid evaporation or escape and dryness of solvent.
- ❖ Avoid prolonged breathing of solvent cement vapours. when joint together pipes and fittings
- ❖ Keep away from all sources of ignition, such as heat, sparks and open flame.
- ❖ Avoid eye and skin contact. In case of eye contact, flush with plenty of water for 15 minutes and call a doctor.

**Note:** Practice for Safe Handling of Solvent Cements is refer to ASTM F402

# Installation Guidelines of UPVC Pipe and fittings

❖ **Cutting:** Take the measurement of pipe length accurately as per requirement & Ensure that the pipe and fittings are proper in size, then cut the pipe with a plywood cutting saw/ratchet cutter or a wheel cutter. Cutting of pipe should be square ( as  $90^\circ$ ) to provides proper bonding within joint area. Inspect pipe ends thoroughly prior to making a joint. If a crack or splintering is noticed cut-off a minimum of 25 mm beyond the visible crack before proceeding.

❖ **Deburring :** Burrs in and on pipe end can obstruct flow/proper contact between the pipe and socket of the fitting during assembly and should be removed from both in and outside of the pipe. A 15 mm dia half round file/a pen knife or a deburring tool are suitable for this purpose. A slight bevel on the end of the pipe will ease entry of the pipe into the socket of the fitting socket.

❖ **Fitting Preparation:** Using a clean dry rag, wipe the dirt and moisture from the fitting sockets and pipe end. Dry fit the pipe to ensure total entry into the bottom of the fittings socket and make a visible marking using a felt tip pen.

# PRODUCT PORTFOLIO OF UPVC ASTM D FITTINGS

## u PVC PIPE & FITTINGS



### M. T. A.



Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15	1/2"	22MTA150	100	1200
20	3/4"	22MTA200	100	500
25	1"	22MTA250	50	300
32	1 1/4"	22MTA320	25	150
40	1 1/2"	22MTA400	20	120
50	2"	22MTA500	10	60

### Brass FTA



15*15	1/2"*1/2"	22BF1515	100	900
20*20	3/4"*3/4"	22BF2020	80	400
25*25	1"*1"	22BF2525	50	250
20*15	3/4"*1/2"	22BF2015	25	150
25*15	1"*1/2"	22BF2515	15	90
25*20	1"*3/4"	22BF2520	15	150
32*32	1 1/4" * 1 1/4"	22BF3232	10	80
40*40	1 1/2" * 1 1/2"	22BF4040	08	64
50*50	2" * 2"	22BF5050	06	36

### Brass MTA



Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15*15	1/2"*1/2"	22BM1515	30	300
20*20	3/4"*3/4"	22BM2020	20	200
25*25	1"*1"	22BM2525	10	120
20*15	3/4"*1/2"	22BM2015	25	250
25*15	1"*1/2"	22BM2515	15	180
25*20	1"*3/4"	22BM2520	15	150
32*32	1 1/4" * 1 1/4"	22BM3232	08	64
40*40	1 1/2" * 1 1/2"	22BM4040	-	-
50*50	2" * 2"	22BM5050	-	27

### Brass Elbow



15*15	1/2"*1/2"	22BE1515	30	300
20*20	3/4"*3/4"	22BE2020	15	180
25*25	1"*1"	22BE2525	8	80
20*15	3/4"*1/2"	22BE2015	20	200
25*15	1"*1/2"	22BE2515	10	120
25*20	1"*3/4"	22BE2520	10	100

### Long Plug



Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15	1/2"	22LP1500	100	500

### SOLVENT



59	ML	Tube	22SC5900	24	288
118	ML	Can	22SC1180	24	144
237	ML	Can	22SC2370	12	96
473	ML	Can	22SC4730	12	48
946	ML	Can	22SC9460	6	24

### LONG BEND 90°



15	1/2"	22LB1500	-	-
20	3/4"	22LB2000	-	-
25	1"	22LB2500	-	-
32	1 1/4"	22LB3200	-	-

### uPVC Long Handle Ball Valve (Union Type)



15	1/2"	22UBV150	20	100
20	3/4"	22UBV200	10	80
25	1"	22UBV250	10	50
32	1 1/4"	22UBV320	5	25
40	1 1/2"	22UBV400	4	20
50	2"	22UBV500	2	12

### Brass Tee



15*15	1/2"*1/2"	22BT1515	20	160
20*20	3/4"*3/4"	22BT2020	10	100
25*25	1"*1"	22BT2525	8	64
20*15	3/4"*1/2"	22BT2015	15	120
25*15	1"*1/2"	22BT2515	10	80
25*20	1"*3/4"	22BT2520	8	80

### REDUCER BUSH



Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
20*15	3/4" * 1/2"	22RB2015	100	1400
25*15	1" * 1/2"	22RB2515	100	600
25*20	1"*3/4"	22RB2520	100	700
32*15	1 1/4" * 1/2"	22RB3215	60	360
32*20	1 1/4" * 3/4"	22RB3220	60	360
32*25	1 1/4" * 1"	22RB3225	70	350
40*15	1 1/2" * 1/2"	22RB4015	30	210
40*20	1 1/2" * 3/4"	22RB4020	30	210
40*25	1 1/2" * 1"	22RB4025	30	210
40*32	1 1/2" * 1 1/4"	22RB4032	30	210
50*15	2" * 1/2"	22RB5015	20	140
50*20	2" * 3/4"	22RB5020	20	140
50*25	2" * 1"	22RB5025	20	140
50*32	2" * 1 1/4"	22RB5032	20	140
50*40	2" * 1 1/2"	22RB5040	20	140

### REDUCER TEE



20*15	3/4" * 1/2"	22RT2015	30	270
25*15	1" * 1/2"	22RT2515	25	125
25*20	1"*3/4"	22RT2520	25	125
32*15	1 1/4" * 1/2"	22RT3215	12	96
32*20	1 1/4" * 3/4"	22RT3220	15	75
32*25	1 1/4" * 1"	22RT3225	10	70
40*15	1 1/2" * 1/2"	22RT4015	08	48
40*20	1 1/2" * 3/4"	22RT4020	08	48
40*25	1 1/2" * 1"	22RT4025	08	48
40*32	1 1/2" * 1 1/4"	22RT4032	08	48
50*15	2" * 1/2"	22RT5015	05	25
50*20	2" * 3/4"	22RT5020	05	25
50*25	2" * 1"	22RT5025	05	25
50*32	2" * 1 1/4"	22RT5032	05	25
50*40	2" * 1 1/2"	22RT5040	05	25

**uPVC Ball Valve**



Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15	1/2"	22BV1500	-	200
20	3/4"	22BV2000	-	128
25	1"	22BV2500	-	78
32	1 1/4"	22BV3200	-	54
40	1 1/2"	22BV4000	-	36
50	2"	22BV5000	-	22
63	2 1/2"	22BV6500	-	30

**ELBOW 90°**



15	1/2"	22E15000	100	400
20	3/4"	22E20000	50	300
25	1"	22E25000	30	150
32	1 1/4"	22E32000	15	90
40	1 1/2"	22E40000	10	70
50	2"	22E50000	6	36

**COUPLIN (COUPLER)**



15	1/2"	22CUP150	100	800
20	3/4"	22CUP200	50	500
25	1"	22CUP250	50	300
32	1 1/4"	22CUP320	25	150
40	1 1/2"	22CUP400	15	135
50	2"	22CUP500	10	60

Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box

**uPVC Long Handle Ball Valve**



15	1/2"	22TBV150	15	90
20	3/4"	22TBV200	10	70
25	1"	22TBV250	8	40
32	1 1/4"	22TBV320	5	30
40	1 1/2"	22TBV400	4	20
50	2"	22TBV500	2	14

**ELBOW 45°**



15	1/2"	22E451500	100	600
20	3/4"	22E452000	50	300
25	1"	22E452500	40	200
32	1 1/4"	22E453200	20	120
40	1 1/2"	22E454000	15	75
50	2"	22E455000	8	48

**TANK NIPPLE**



15	1/2"	22TN1500	20	360
20	3/4"	22TN2000	15	240
25	1"	22TN2500	12	144
32	1 1/4"	22TN3200	12	84
40	1 1/2"	22TN4000	12	72
50	2"	22TN5000	10	50



**F. T. A.**

Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15	1/2"	22FTA150	100	900
20	3/4"	22FTA200	80	400
25	1"	22FTA250	50	250
32	1 1/4"	22FTA320	25	150
40	1 1/2"	22FTA400	15	90
50	2"	22FTA500	10	50

**EQUAL TEE**

15	1/2"	22T15000	40	400
20	3/4"	22T20000	30	240
25	1"	22T25000	20	140
32	1 1/4"	22T32000	10	70
40	1 1/2"	22T40000	8	48
50	2"	22T50000	5	25

**uPVC TO CPVC CONVERTER - COUPLER**

20	3/4" IPS x 3/4" CTS	22UTC200	50	500
25	1" IPS x 1" CTS	22UTC250	50	300

**END CAP**

15	1/2"	22EC1500	100	1200
20	3/4"	22EC2000	100	800
25	1"	22EC2500	50	400
32	1 1/4"	22EC3200	40	240
40	1 1/2"	22EC4000	30	180
50	2"	22EC5000	15	90

**UNION**

Size (mm)	Size (In.)	Part No.	Quantity	
			Bag	Box
15	1/2"	22UN1500	240	240
20	3/4"	22UN2000	15	180
25	1"	22UN2500	12	144
32	1 1/4"	22UN3200	15	75
40	1 1/2"	22UN4000	8	40
50	2"	22UN5000	5	25

**REDUCER COUPLER**

20*15	3/4" * 1/2"	22RC2015	100	600
25*15	1" * 1/2"	22RC2515	60	420
25*20	1" * 3/4"	22RC2520	50	400
32*15	1 1/4" * 1/2"	22RC3215	40	200
32*20	1 1/4" * 3/4"	22RC3220	40	200
32*25	1 1/4" * 1"	22RC3225	30	180
40*15	1 1/2" * 1/2"	22RC4015	20	140
40*20	1 1/2" * 3/4"	22RC4020	20	140
40*25	1 1/2" * 1"	22RC4025	20	120
40*32	1 1/2" * 1 1/4"	22RC4032	20	120
50*15	2" * 1/2"	22RC5015	15	90
50*20	2" * 3/4"	22RC5020	15	90
50*25	2" * 1"	22RC5025	15	90
50*32	2" * 1 1/4"	22RC5032	15	60
50*40	2" * 1 1/2"	22RC5040	15	60

# TECHNICAL SPECIFICATION OF UPVC FITTING AS PER ASTM D2467

**Tapered Sockets for PVC Pipe Fittings, Schedule 80, in. (mm)<sup>A</sup>**



Nominal size	Socket Entrance Diameter (mm)	Tolerance	Socket Bottom Diameter (mm)	Tolerance (INCH AND MM)	Socket Length in mm	Inside diameter (mm)	Wall Thickness (mm)	
							Socket Entrance (mm)	Socket Bottom (mm)
½	0.852 (21.64)	±0.004 (±0.10)	0.840 (21.34)	±0.004 (±0.10)	0.875 (22.22)	0.542 (13.77)	0.147 (3.73)	0.185 (4.70)
¾	1.062 (26.97)	±0.004 (±0.10)	1.050 (26.67)	±0.004 (±0.10)	1.000 (25.40)	0.738 (18.75)	0.154 (3.91)	0.195 (4.95)
1	1.330 (33.78)	±0.005 (±0.13)	1.315 (33.40)	±0.005 (±0.13)	1.125 (28.58)	0.952 (24.18)	0.179 (4.55)	0.225 (5.72)
1¼	1.675 (42.55)	±0.005 (±0.13)	1.660 (42.18)	±0.005 (±0.13)	1.250 (31.75)	1.273 (32.33)	0.191 (4.85)	0.240 (6.10)
1½	1.918 (48.72)	±0.006 (±0.15)	1.900 (48.26)	±0.006 (±0.15)	1.375 (34.93)	1.494 (37.95)	0.200 (5.08)	0.250 (6.99)
2	2.393 (60.78)	±0.006 (±0.15)	2.375 (60.325)	±0.006 (±0.15)	1.500 (38.10)	1.933 (49.10)	0.218 (5.54)	0.275 (6.99)

Burst pressure requirement for uPVC fittings Schedule 80 are same as burst pressure of uPVC schedule 80 pipes.

**PRESSURE RATING -UPVC FITTINGS SCH-80 AS PER ASTTM D 2467**

Nominal (in)	Size (mm)	Max. work pressure rating (kg/cm <sup>2</sup> ) at 23°C	Burst Pressure (kg/cm <sup>2</sup> )
1/2	15	59.76	191.30
3/4	20	48.54	154.69
1	25	44.26	142.05
1 1/4	32	36.61	116.76
1 1/2	40	33.04	106.15
2	50	28.14	90.65



# FIELD OF APPLICATION

In simple terms they are the most suitable and economical solution for distributing potable water. These pipes are lead free, UV stabilised and light weight which makes them easy to transport & install. Flowkem ASTM pipes are functionally most suitable for all plumbing applications and are primarily white in colour.

- ❖ WATER PLUMBING APPLICATION IN BUILDING.
- ❖ INDUSTRIAL PROCESS LINES.
- ❖ SWIMMING POOLS.
- ❖ CORROSSIVE FLUID TRANSPORTATION.
- ❖ DIFFERENT TYPE PLANTING APPLICATIONS.
- ❖ PAPER AND DISTILLARY INDUSTRIES.
- ❖ SALT WATER LINES Etc.

**Note: Not suitable for compressed air and gases.**

## FAQs

What is Lead Free?

Lead free means the pipes don not contain lead . Lead is a toxic element.  
Lead free pipes are hence 100% hygienic for transportation of drinking water .

## WHY U.V. RESISTANT?

Due to Ultra-Violet Rays from the Sun, pipes decolourise and degrade fast.

In order to protect from UV radiation, PVC is compounded with UV resistant chemicals.

Hence discoloration and degradation of material is avoided and they remain unaffected in prolonged use in outdoor applications.

## What about health, safety and fire toxicity issues?

Flowkem UPVC pipes are manufactured from a compound which is lead free and hence most favoured system in terms of health and safety, LOI of UPVC is 45, which means UPVC is not readily burnable in atmosphere. Once the burning source is removed, it stops burning.

What is the recommended joint curing time?

Recommended Initial Set Time

<i>Temperature range</i>	<i>Pipe size</i>	<i>Pipe size</i>	<i>Pipe size</i>
	<i>1/2" to 1-1/4"</i>	<i>1-1/2" to 3"</i>	<i>4" to 6"</i>
<i>15.5°C - 37.7°C</i>	<i>15 min</i>	<i>30 min</i>	<i>1 hr.</i>
<i>4.4°C - 15.5°C</i>	<i>1 hr.</i>	<i>2 hrs</i>	<i>4 hrs</i>

## Recommended Initial Cure Time

<i>Temperature range</i>	<i>Pipe size</i>	<i>Pipe size</i>	<i>Pipe size</i>
	<i>1/2" to 1-1/4"</i>	<i>1-1/2" to 3"</i>	<i>4" to 6"</i>
<i>15.5°C - 37.7°C</i>	<i>6 hrs</i>	<i>12 hrs</i>	<i>24 hrs</i>
<i>4.4°C - 15.5°C</i>	<i>12 hrs</i>	<i>24 hrs</i>	<i>48 hrs</i>