# Fineflow PLASTIC INDUSTRIES

Manufacturers & Exporters

**uPVC Plumbing System** 

#### AS PER ASTM D 1785 SCHEDULE 40, 80 & 120 FOR DISTRIBUTION OF PURE & SAFE DRINKING WATER

#### Introduction

Galvanised iron pipes are used for distribution of hygienic drinking water for ages but the quality has been deteriorated over the period of time. Environmentalists & public health engineers all over the world were worried because of contamination of water due to accumulation of rust particles heavily in the GI pipes causing corrosion, algate formulation & root penetration & also reduces the flow of water resulting in choked lines.

Zenith UV stabilised UPVC high pressure threaded plumbing pipes for water distribution are made as per ASTM (Americal Society for Testing & Materials) specification and are well accepted by the users every where.



#### **Applications**

- 1. Water distribution systems.
- 2. Pipelines for Chemicals, Compressed air and gases in factories.
- 3. Water distributions in gardens.
- 4. Water distribution Systems for bathrooms, washing places, kitchens and toilets in residential blocks, offices, commercial complex, fatories, laboratories, as well as bus stands, airports, railways, hotels and hospitals.
- 5. Water connections for buildings.
- 6. Tube-well connections.

#### Advantages

- 1. Distribution of clean & hygienic watyer.
- 2. Do not get rusty with passage of time & ensures higher and smooth flow.
- 3. Low maintenance cost
- 4. Light weight, convenient to handle, store, transport and install
- 5. No effect of weather & sunlight due to ultra voilet stabiliser.
- 6. No root penetration.
- 7. Resistant to chemicals & corrosion.
- 8. Fire resistant because of self extinguishing quality.
- 9. Leak proof joints.
- 10. Non-conductor of electricity & low thermal conductivity.
- 11. Termites, fungus or bacteria does not effect.
- 12. Seamless & Strong.

MATERIAL PROPERTIES :							
Material uPVC All values at 20 <sup>0</sup> C							
General Properties							
specific gravity		1.4 to 1.43					
Flammability		will not support combustion, self-extinguishing					
Water obsorption in 24 hours 0.10%							
Mechanical Properties							
Ultimate Tensile Strength	:	450 - 560 Kgf/cm <sup>2</sup>					
Elongation at break	:	80 %					
Modulus of Elasticity	:	3.3 to 3.38 x 10 <sup>4</sup> Kgf/cm <sup>2</sup>					
Modulus of Rigidity	:	1 - 1.2 x 10 <sup>4</sup> Kgf/cm <sup>2</sup>					
Compressive Strength	:	600 - 700 Kgf/cm <sup>2</sup>					
Flexural Strength	:	650 - 700 Kgf/cm <sup>2</sup>					
Impact Strength at 0 C	:	0.5 - 1.0 ft-lb/inch of notch					
Impact Strength at 200C	:	1.0 - 2.0 ft-lb/inch of notch					
Maximum Bending Stress	:	21 Kgf/cm <sup>2</sup>					
Durometer hardness	:	80 (as per ASTM-D-1785)					
Thermal Properties							
Softening Point (Vicat)	:	72-80 <sup>0</sup> C					
Coeff. of Linear Expansion	:	5.4 x 10 <sup>-5</sup> mm/mm/ <sup>0</sup> C					
Expansion on 6-meter length	:	3.2mm/10 <sup>0</sup> C (approx.)					
Coeff. of heat conductivity	:	0.14 Kcal/jg/ <sup>0</sup> C					
Specific heat	:	0.25 Cal/hr/cm <sup>2/0</sup> C/cm					
Thermal Conductivity	:	4 x 10 <sup>-4</sup> Cal/hr/cm <sup>2/0</sup> C/cm					
Heat distortion temp	:	750C (at 18.5 Kgf/cm <sup>2</sup> )					
Electrical Properties	2	<u>~</u>					
Volume Resistivity		1014 ohm/cm					
	:	40 kV/mm : Non conductor hence should not be used for earthing.					
Flow Characteristics							
Hazen Williams Coefficient	:	150 remain constant unlike GI pipes					
Colebrook Coefficient	:	0.00001					

## DIMENTION AND WATER PRESSURE RATING AT 23°C FOR PIPES AS PER ASTM D-1785 THREADED AS PER IS-554 (PVC COMPOUND GRADE EQUIVALENT TO PVC 1120/2120)

		Schec	lule 40	כ	Schedule 80			Schedule 120		
Nominal Bore	Outside Diameter	Wall Thickness	Working pressure		Wall Thickness	Working Pressure		Wall Thickness	Working Pressure	
(inch)	(mm)	(mm)	MPa	psi	(mm)	MPa	psi	(mm)	MPa	psi
1/2	21.34 0.10	2.77+0.51	2.07	300	3.73+0.51	2.90	420	4.32+0.51	3.52	510
3/4	26.67 0.10	2.87+0.51	1.65	240	3.91+0.51	2.34	340	4.32+0.51	2.69	390
1	33.40 0.13	3.38+0.51	1.55	225	4.55+0.53	2.21	320	5.08+0.61	2.48	360
1 1/4	42.16 0.13	3.56+0.51	1.27	185	4.85+0.58	1.79	260	5.46+0.66	2.07	300
1 1/2	48.26 0.15	3.68+0.51	1.14	165	5.08+0.61	1.65	240	5.72+0.68	1.86	270
2	60.32 0.15	0.91+0.51	0.96	140	5.54+0.66	1.38	200	6.35+0.76	1.65	240
2 1/2	73.02 0.18	5.16+0.61	1.03	150	7.01+0.84	1.45	210	7.62+0.91	1.59	230
3	88.90 0.20	5.49+0.66	0.89	130	7.62+0.91	1.31	190	8.89+1.07	1.52	220
4	114.30 0.23	6.02+0.71	0.76	110	8.56+1.02	1.10	160	11.10 +1.32	1.52	220







### Joining Instructions

- While threading at the site, ensure square cut of the pipe ends, insert proper size wooden plug in the pipe end & then carry out threading. Adding cold water while threading improves the quality of threads.
- Use of cushion between jaws of the pipe wrench while holding the pipe is advisable to avoid damage to the pipe.
- The joint should be clean and threads should be made in one pass.
- For sealing of joints best quality teflon tape or jute with holdtite must be used. This will avoid the damage to threads and avoid leakage.
- The joint should be made with hand tightening of the fitting over the pipe end covered with teflon tape or jute with holdtite.
- Avoid over tightening of the joint.
- At the pipe lines should be supported approximately at a distance of 0.8 meters (21/2) for horizontal service & 1.2 meters (4) for vertical service with Zenith pipe clips or CI brackets with nut bolts as shown in photographs.
- This system is not recommended for geyser outlets & hot water supply.
- In case of longer runs provide air valves at all higher points of ground and the size of the valve should be 1/4th of the main line.