# AKPIGSTUAE

# **uPVC PIPES & FITTINGS**



# Schedule 80 & Schedule 40

For High Pressure, Water Supply & Drainage Applications (Metric & Imperial Sizes)



AKPLAST supplies a wide range of ASTM, NSF, SKZ, & BSEN standard uPVC Schedule 80 & Schedule 40 Pressure Pipes & Fittings for water distribution applications. Built strong with finest raw materials, uPVC Schedule 80 & Schedule 40 Pressure Pipes and Fittings are durable and resilient in nature guaranteeing years of leak-free long service life. AKPLAST uPVC pipes and fittings are typically used in:

- Piping Networks for Swimming Pools, Lakes.
- Distribution of High Pressure Water.
- Underground Drainage and Sewerage Transmissions.
- Air-Conditioning & Chiller Systems.
- Piping for Water Treatment Systems.
- Irrigation Networks.
- · Dairy & Foodstuff Industries.
- Conveyance of varied Chemicals and Corrosive Fluids for Industries.



#### **CERTIFICATIONS**

AKPLAST supplied uPVC Schedule 80 & Schedule 40 Pressure Pipes & Fittings are designed and manufactured complying to several internationally accredited standards for client's and projects diverse requirements. We supply products manufactured in accordance to NSF, ASTM, SKZ, BSEN – Kitemark Approved & ISO standards.













#### **GENERAL PROPERTIES**

**USAGE** - AKPLAST High Pressure pipes & fittings can be used in long range of application such as irrigation, water treatment, water supply chemical, high pressure water supply, swimming pool, dairy industries and other industrial application. AKPLAST High Pressure fitting used to joint with any uPVC pipe has the same international standard size DIN (8062) The uPVC compound used is fit for contact with alimentary fluids in accordance with regulations in force in U.S.A., Italy, France, Germany, Holland, UK, countries and Arab countries.

**MATERIAL** - uPVC (Unplastized Polyvinyl Chloride) compound with high quality stabilizer material (Tin) which is applicable for high pressure fitting product.

**RANGE** - a very wide range of fittings is available with AKPLAST, solvent weld and threaded sizes starting from 3/8" upto 12" and (20 mm to 315 mm).

#### **FEATURES**

#### **Easy Handling & Installation**

uPVC pipes and fittings are lightweight compared to conventional steel pipes & fittings, therefore reducing transportation and installation costs.

#### **Chemical & Corrosion Resistance**

uPVC pipes and fittings are rigid and resilient and has resistance to various industrial and domestic chemicals and acids, high & low salinity water, industrial fumes, harsh climate and above & underground environments.

#### Resistance to Galvanic or Electrolytic Attack

uPVC Pipes & Fittings being non-conductor of electricity, is completely resistant to galvanic and electrolytic attack.

#### Freedom from Odour, Taste and Toxicity

uPVC pipe and fittings systems are non-toxic, odorless, and tasteless. The National Sanitation Foundation lists them for use with drinking water.

#### **Resistance to Ultraviolet Exposure**

When construction projects are on-going, the area is exposed to high temperatures and sunlight. AKPLAST uPVC pipes and fittings can withstand sunlight ultraviolet exposure. For prolonged period, after successful installation on the pipes and fittings it is advisable to cover the pipe with any light coloured paint to get full durability and long service life.



#### **Low Friction Loss**

The smooth interior surfaces of uPVC pipes and fittings assure low friction loss and high flow rate. Because uPVC pipe and fittings do not rust, pit, scale, or corrode, the high flow rate continues for the life of the piping system.

#### Strength

uPVC Schedule 40 and Schedule 80 pipe and fittings are highly resilient, tough and durable products that have high-tensile and high-impact strength. They withstand high pressure for long periods.

#### **Lesser Noise**

In Residential Buildings, distributing water through well-built uPVC pipes and fittings make lesser noise compared to steel pipes. AKPLAST uPVC pipes and fittings are built strong and smooth, therefore eliminating any unwanted water flow noise.

#### **Fire Hazard Protected**

Fire tests have shown that uPVC pipes and fittings, being flame retardant product, will not cause, support or enhance the natural development of fire. Unlike timber windows, the uPVC sections do not support combustion and are in fact self-extinguishing. This quality prevents the promotion of fire spread. For this reason, uPVC pipes and fittings offer considerable fire protection.

#### Thermal Expansion

uPVC pipes and fittings are easily operated under any weather conditions due to its low thermal expansion coefficient

#### Maintenance-Free

uPVC pressure pipe and fittings systems do not rust, pit, scale, corrode, or promote build-up on the system interior. Years of trouble-free service can be expected.

#### **Cost Effective**

uPVC pipes and fittings are a very cost effective method of distributing water anywhere using only easy rubber joints or solvent cement, compared to conventional steel products which requires cutting, welding and grinding.



#### **Resistant to Abrasion**

uPVC pipes exhibit outstanding resistance to wear and abrasion. uPVC pipe has proven more durable than metal, concrete and clay pipe for the transportion/transmission of water.

#### **Operating Temperature**

uPVC pipes and fittings can withstand an operating temperature of 60°C.

#### **HANDLING & STORAGE OF PIPES**

#### **Handling Pipe**

Pipes should be handled with reasonable care. Because thermoplastic pipe is much lighter in weight than metal pipe, there is sometimes a tendency to throw it around. This should be avoided. The pipe should never be dragged or pushed from a truck bed. Removing and handling pallets of pipe should be done with a forklift. Loose pipe lengths require special handling to avoid damage. Precautions to follow when unloading and handling loose pieces include not banging lengths together or dropping lengths, even from low heights, on hard or uneven surfaces. In all cases, severe contact with any sharp objects (rocks, angle irons, forks on forklifts, etc.) should be avoided. Also, the pipe should never be lifted or moved by inserting the forks of a forklift into the pipe ends. Handling PVC pipe diameters greater than 4-inch requires extra care as the added pipe weight can cause cracking from relatively minor impacts. Also, plastic pipe becomes more brittle as the temperature decreases. The impact strength and flexibility of PVC pipe are reduced. Therefore, take extra care when handling skids or loose lengths when the temperature drops below 50°F.



#### **Storing Pipe**

If possible, pipe should be stored inside. When this is not possible, the pipe should be stored on level ground which is dry and free from sharp objects. If different schedules of pipe are stacked together, the pipe with the thickest walls should be on the bottom. If the pipe is in pallets, the pallets should be stacked with the pallet boards touching, rather than pallet boards being placed on the pipe. This will prevent damage to or bowing of the pipe. If the pipe is stored in racks, it should be continuously supported along its length. If this is not possible, the spacing supports should be determined based on the pipe diameter. In general, supports and spacing that would provide for no more than 1/2" in deflection of the pipe should be acceptable. The pipe should be protected from the sun and be in an area with proper ventilation. This will lessen the effects of ultraviolet rays and help prevent heat build-up.

#### **Transportation of PVC Pipes**

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. 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.



#### PHYSICAL PROPERTIES OF PVC

PROPERTY	UNITS	ABS	ASTM NO.	PVC	ASTM NO.
Specific Gravity	g/cc	1.05	D 792	1.40	D 792
Tensile Strength (73°F) Minimum	Psi	4,500	D 638	7,000	D 638
Modulus of Elasticity in Tension (73°F) Minimum	Psi	240,000	D 638	400,000	D 638
Flexural Strength (73°F)	Psi	10,585	D 790	14,000	D 790
Izod Impact (notched at 73°F) Minimum	ft lb/ in. of notch	6.00	D 256	0.65	D 256
Hardness (Durometer D)		70	D 2240	80 ± 3	D 2240
Hardness (Rockwell R)	2	100	D 785	110 - 120	D 785
Compressive Strength (73°F)	Psi	7,000	D 695	9,600	D 695
Hydrostatic Design Stress	Psi	N/A		2,000	D 1598
Coefficient of Linear Expansion	in./ in./ °F	5.5 x 10 <sup>-5</sup>	D 696	3.0 x 10 <sup>-5</sup>	D 696
Heat Distortion Temperature at 264 psi Minimum	degrees F	180	D 648	158	D 648
Coefficient of Thermal Conductivity	BTU/ hr/sq ft/ °F/ in.	1.1	C 177	1.2	C 177
Specific Heat	BTU/°F/lb	0.35	D 2766	0.25	D 2766
Water Absorption (24 hrs at 73°F)	% weight gain	0.40	D 570	.05	D 570
Cell Classification - Pipe		42222	D 3965	12454	D 1784
Cell Classification - Fittings		32222	D 3965	12454	D 1784
Burning Rate				Self Ext.	D 635

#### FRICTION LOSS FOR UPVC FITTINGS

The friction loss through fittings is considered to be equivalent to the loss through a certain number of linear feet of pipe of the same diameter as the fittings. To determine the loss through a piping system, add together the number of "equivalent feet" calculated for the fittings in the system.

The chart below shows approximate friction losses, in equivalent feet, for a variety of Schedule 40 & 80 uPVC fittings of different sizes.

Fitting	1/2"	3/4′′	1"	11/4′′	1½′′	2"	21/2"	3"	4"	6′′	8"
Tee (Run)	1.0	1.4	1.7	2.3	2.7	4.3	5.1	6.2	8.3	12.5	16.5
Tee (Branch)	4.0	5.0	6.0	7.3	8.4	12.0	15.0	16.4	22.0	32.7	49.0
90° Elbow	1.5	2.0	2.5	3.8	4.0	5.7	6.9	7.9	12.0	18.0	22.0
45° Elbow	.80	1.1	1.4	1.8	2.1	2.6	3.1	4.0	5.1	8.0	10.6
Male/Female Adapter	1.0	1.5	2.0	2.75	3.5	4.5	5.5	6.5	9.0	14.0	



(Friction head and friction loss are per 100 feet of pipe.) NOTICE: Flow velocity should not exceed 5 feet per second. Velocities in excess of 5 feet per second may result in system failure and property damage. FRICTION LOSS AND FLOW VELOCITY FOR SCHEDULE 40 THERMOPLASTIC PIPE

Friction Loss			П	2 -		2	5	7.	o 4	00 (	7.5	7	0,	ō 4	6.	. 9	5 4		7	0		Τ	1	200	50	1 4	0 -	, 9	3	0,0	50	0 0	000	2	500	2 5	6	90	2 0	7
Pounds Per Square Inch			ŀ								_				*****		2.04	Sa Allaces	1107000	3300		-	ŀ	0.01	2000													- Common	EAVOIDE .	
Friction Head Feet			3 in.	0.01	0.03	0.07	0.11	0.17	0.32	0.41	0.51	0.86	1.15	1.47	1.82	2.22	3.35	6.25	8.00	12.10			T6 III.	0.02	0.07	0.10	0.25	0.37	0.52	0.70	0.89	1.11	1.61	1.89	2.19	2.51	3.22	3.60	4.00	4.80
Velocity Feet Per Second				0.22	0.44	99.0	0.88	1.10	1.55	1.77	1.99	2.65	3.09	3.53	3.98	4.42	5.52	7.73	8.83	11.04				1.37	1.83	2.29	3.66	4.58	5.49	6.41	1.32	47.0	10.07	10.99	11.90	12.82	14.65	15.56	17.40	18.51
Friction Loss Pounds Per Square Inch				0.01	0.02	0.08	0.14	0.21	0.30	0.51	0.63	1.08	1.44	1.63	2.29	2.78	4.21	24.5						0.01	90.0	60.0	0.12	0.31	0.43	0.58	0.74	24.0	1.33	1.57	1.82	2.08	10.3			
Friction Head Feet			2½ in.	0.02	0.00	0.19	0.33	0.49	0.92	1.18	1.46	2.49	3.32	4.25	5.28	6.42	9.58	00:01					14 III.	0.04	0.13	0.20	0.20	0.71	1.00	1.33	1./1	21.2	3.08	3.61	4.19	5.45	r i			
Velocity Feet Per Second				0.34	0.68	1.03	1.37	1.71	2.39	2.73	3.08	4.10	4.79	5.13	6.15	6.84	8.55	07:01						1.20	2.39	2 50	47.0	5.98	7.17	8.37	16.6	10.76	13.15	14.35	15.54	17.04	17.71			
Friction Loss Pounds Per Square Inch				0.03	0.03	0.20	0.34	0.51	0.71	1.21	1.51	2.56	3.41	5.88 4.37	5.43	6.60					0.01	0.05	0.02	0.02	0.09	91.0	0.17	0.49	69.0	0.92	1.1/									
Friction Head Feet			2 in.	0.00	0.21	0.45	0.77	1.17	2.18	2.79	3.47	5.92	7.87	10.08	12.53	15.23					0.03	0.04	0.05	0.06	0.21	0.01	0.75	1.13	1.59	2.11	7./1									
Velocity Feet Per Second				0.49	0.98	1.46	1.95	2.44	3.41	3.90	4.39	5.85	6.83	7.80	8.78	9.75					1.01	1.16	1.30	1.45	2.89	7.07	7,78	7.23	8.67	10.12	11.5/									
Friction Loss Pounds Per Square Inch			0.02	0.09	0.16	0.67	1.15	1.73	3.23	4.14	5.15	8.77							0.01	0.02	0.02	0.04	0.05	0.06	0.21	0.32	0.76	1.15	ì											
Friction Head Feet		1½ in.	0.04	0.20	0.73	1.55	5.64	4.00	7.45	9.54	11.87	20.22						10 in.	0.02	90.0	0.05	0.09	0.11	0.14	0.49	0.7	1.76	2.66												
Velocity Feet Per Second			0.32	0.81	1.15	2.42	3.23	4.04	5.66	6.47	7.27	9.70							0.82	1.05	1.23	1.64	1.85	3.08	4.11	5.15 4.14	8 21	10.27	i											
Friction Loss Pounds Per Square Inch			0.03	0.19	0.68	1.44	2.45	3.71	6.91	8.85	11.01	2				0.01	0.01	0.03	0.03	0.00	0.00	0.12	0.15	0.18	0.64	1 24	T-70													
Friction Head Feet		11/4 in.	0.08	0.43	1.57	3.32	5.65	8.55	15.94	20.41	25.39	000			8 in.	0.02	0.03	90.0	0.08	0.11	0.16	0.27	0.34	0.41	1.48	27.2	7:17													
Velocity Feet Per Second			0.44	1.10	2.27	3.31	4.45	5.52	7.73	8.84	9.94	00:11				0.65	0.81	1.13	1.30	1.62	2.27	2.59	2.92	3.24	6.48	8.10 0.73	7.12													
Friction Loss Pounds Per Square Inch			0.13	0.73	2.64	5.59	9.52	14.39	20.17		100	0.01	0.02	0.02	0.03	0.03	0.05	0.10	0.12	0.19	0.26	0.45	0.56	0.68	2.45															
Friction Head Feet		1 in.	0.31	1.69	5.14	12.89	21.96	33.20	46.54	1	0 III.	0.03	0.04	0.05	0.06	0.08	0.12	0.22	0.29	0.43	0.61	1.03	1.29	3.31	5.64															
Velocity Feet Per Second			0.77	1.93	3.86	5.79	7.72	9.65	11.58		72 0	0.67	0.79	0.84	1.01	1.12	1.40	1.97	2.25	2.81	3.93	4.49	5.06	5.62	11.24															
Friction Loss Pounds Per Square Inch		0.12	0.44	2.43	8.76	18.56	31.63		0.01	0.02	0.02	0.03	0.04	0.00	0.07	0.08	0.13	0.24	0.30	0.40	0.86	1.10	1.37	1.66																
Friction Head Feet	3/4 in.	_	1.03				$\neg$	5 in.	0.02	0.04	0.04	0.08	0.10	0.11	0.16	0.19	0.29	0.55	0.70	T.00	1.98	2.54	3.15	3.83																
Velocity Feet Per Second		0.63	1.26	5.16	6.32	9.48	12.63	0.0	0.57	0.65	0.73	0.97	1.14	1.30	1.46	1.62	2.03	2.84	3.25	4.00	5.69	6.50	7.31	8.12																
Friction Loss Pounds Per Square Inch		0.50	1.82	76.60	35.81		0.01	0.02	0.03	0.05	0.06	0.10	0.13	0.15	0.21	0.25	0.38	0.71	0.90	1.59	2.59	3.26																		
Friction Head Feet	½in.	1.16	4.19	77.67	82.59	4 in.	0.03	0.05	0.08	0.11	0.13	0.23	0.30	0.39	0.48	0.59	0.88	1.65	2.08	07.50	5.97	7.52																		
Velocity Feet Per Second		1.13	2.26	2.04	11.28		0.51	0.64	0.89	1.02	1.15	1.53	1.79	2.05	2.30	2.56	3.20	4.47	5.11	0.09	8.95	10.23																		
Gallons Per Minute		1	2	1 0	10	15	20	25	35	40	45	09	70	80	06	100	125	175	200	000	350	400	450	500	1000	1500	2000	2500	3000	3500	4000	4000	5500	0009	6500	7500	8000	8500	9500	10000



FRICTION LOSS AND FLOW VELOCITY FOR SCHEDULE 80 THERMOPLASTIC PIPE (Friction head and friction loss are per 100 feet of pipe.)
NOTICE: Flow velocity should not exceed 5 feet per second. Velocities in excess of 5 feet per second may result in system failure and property damage.

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Friction Loss Pounds Per Square Inch				0.01 0.01 0.02	0.07	0.14	0.24	0.29	0.50	0.85	1.29	1.95	3.63	4.65	00.7			0.01 0.02 0.06 0.08 0.14 0.21 0.61 1.21 1.24 1.24 1.24 1.24 1.24 1.24 1.2
Friction Head Feet			3 in.	0.01	0.15	0.32	0.54	0.68	1.15	1.97	2.97	6.30	8.38	10.73	77:01		16 in.	0.02 0.05 0.03 0.13 0.18 0.67 0.67 0.67 1.11 1.71 1.72 2.41 2.73 3.20 4.10 4.10
Velocity Feet Per Second				0.25	1.00	1.49	1.99	2.24	3.49	3.99	96.4	6.23	8.72	9.97	25.3			1.01 1.52 2.25 2.25 3.03 3.03 3.03 5.06 6.07 7.08 8.09 9.10 11.13 11.13 11.13 11.14 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16 11.16
Friction Loss Pounds Per Square Inch				0.03	0.19	0.41	0.70	0.87	1.49	2.53	3.83	5.78						0.02 0.04 0.01 0.11 0.15 0.26 0.40 0.74 0.74 0.74 0.74 0.74 0.74 0.74
Friction Head Feet			2½ in.	0.03	0.45	0.95	1.62	2.01	3.43 4.56 5.18	5.84	83.83	13.34					14 in.	0.05 0.10 0.17 0.25 0.35 0.95 1.22 2.73 2.73 3.32 4.66 6.19
Velocity Feet Per Second				0.39	1.56	234	3.12	3.51	4.68 5.46 5.85	6.23	7.79	9.74					- 2	1.33 2.65 2.65 3.365 3.37 0.62 10.62 11.94 11.25 11.25 11.25 12.25
Friction Loss Pounds Per Square Inch				0.04	0.47	0.99	1.68	2.09	3.56	6.07	0.0					0.02	0.03	0.03 0.07 0.07 0.12 0.42 0.63 1.18 1.51
Friction Head Feet			2 in.	0.08	1.07	2.28	3.88	5.87	8.22	14.01	21.18				12 in.	0.04	90.0	0.07 0.16 0.27 0.96 0.57 0.96 1.46 2.04 3.47
Velocity Feet Per Second				0.56 0.78 1.12	2.23	3.35	4.47	5.58	6.70	8.93	71.11					1.12	1.44	1.60 3.240 4.01 4.01 4.81 6.01 11.21 12.82
Friction Loss Pounds Per Square Inch			0.02	0.13 0.24 0.46	1.65	3.49	5.94	8.98	12.59					0.01	0.03	0.04	90.0	0.07 0.27 0.27 0.97 1.47
Friction Head Feet		1½ in.	0.05	0.29	3.80	8.04	13.71	20.72	29.04				10 in.	0.03	0.07	0.09	0.14	0.17 0.62 0.036 0.037 1.32 3.34 3.39
Velocity Feet Per Second			0.38	1.31	3.75	5.63	7.50	9.38	11.26					0.91	1.36	1.59	2.04	2.27 4.54 4.54 5.67 6.80 9.07 11.34
Friction Loss Pounds Per Square Inch			0.05	0.28	3.62	7.68	13.08	16.27 19.78				0.02	0.03	0.04	0.09	0.12	0.19	0.23 0.841 0.81 1.23 1.72
Friction Head Feet		11/4 in.	0.12	0.64	8.36	17.71 23.56	30.17	37.53 45.62			8 in.	0.04	0.07	0.10	0.20	0.27	0.43	0.52 1.87 2.83 3.97
Velocity Feet Per Second			0.52	1.30	5.19	7.78	10.38	11.68				0.89	1.25	1.43	2.14	2.50	3.21	3.57 5.36 7.14 8.93 10.71
Friction Loss Pounds Per Square Inch			0.21	1.16	15.10	31.99		0.01	0.02	0.03	0.04	0.07	0.13	0.16	0.34	0.46	0.73	3.1.88
Friction Head Feet		1 in.	0.49	2.67 4.98 9.65	34.82	73.78		0.03	0.05	0.07	0.10	0.16	0.29	0.37	0.79	1.05	1.68	2.04
Velocity Feet Per Second			0.93	3.27	9.33	14.00		0.63	0.75	1.00	1.25	1.57	2.19	2.51	3.76	4.39	5.64	6.27 12.54 12.54
Friction Loss Pounds Per Square Inch				4.10 7.64 14.79		0.02	0.02	0.02	0.04	0.07	0.11	0.16	0.30	0.39	0.83	1.10	1.75	2.13
Friction Head Feet	3/4 in.	0.048	1.73	9.45 17.62 34.11	5 in.	0.04	0.05	0.06	0.10	0.16	0.25	0.38	0.70	0.90	1.90	2.53	4.04	06.4-
Velocity Feet Per Second		_		3.92 5.49 7.84	_	0.54	0.72	0.90	1.08	1.44	1.80	2.25	3.15	3.60	5.39	6.29	8.09	66.8
Friction Loss Pounds Per Square Inch		0.97	3.50	19.13 35.67	0.02	0.04	90.0	0.08	0.13	0.22	0.33	0.50	0.93	1.20	2.54	3.37		
Friction Head Feet	½in.	2.24	8.08	44.12 82.27	0.04	0.08	0.14	0.17	0.30	0.51	0.76	1.16	2.16	2.76	5.85	9.96		
Velocity Feet Per Second		1.48	2.95	7.39	0.57	0.86	1.14	1.28	2.00	2.28	2.85	3.56	4.99	5.70	8.55	9.98		
Gallons Per Minute		1	2	7 7 10	20	35	40	50	70	80	100	125	175	200	300	350	450	500 1250 2000 2000 3000 3000 4000 4000 4000 6000 6000 6



#### PIPES & FITTINGS ASSEMBLY

**Metric Series** - Fittings rigid PVC of metric series can be glued to each other and on tubes in the same material provided the sizes and tolerances are in accordance to standards of products.

A strong, dense-type glue is recommended, especially for coupling large diameters, where the clearance may be tight due to the ovalization effect; such clearance anyhow, in order to guarantee a perfect seal, should never exceed 0,6 mm with a dense-type glue and 0,3 mm with a fluid-type glue.

In order to obtain a perfect gluing, it is recommended that the glue manufacturer's instruction be strictly followed:

Remove all traces of grease, oil or simply dust from both the tube (properly cut at 90° and beveled at the tip) and the fittings by means of a clean cloth soaked in diluent.

Apply, by a suitable brush, a uniform layer of glue, both to the fitting and to the tube, so as to cover the entire surface to be glued.

Immediately (in 1 to 2 minutes) insert the part to be glued in the female keying of the fitting.

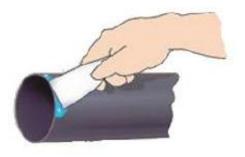
It is recommended that all glue in excess, which is not held by the coupling, be quickly removed.

It is also recommended that freshly glued parts should not be submitted to mechanical stresses.

The glue manufacturer instructions concerning how long to wait before handling, and concerning sticking and pressure testing the system should be carefully followed. It is recommended that none of these operations should take place in the 24 hours following the gluing.

Continued...











**Threaded Series** - Fittings in rigid PVC of the threaded series or of the adaptor series can be screwed to each other or to tubes and other threaded parts in other material.

In order to obtain easy screwing and perfect seal, the use of high quality PTFE / Thread Seal Tape (a.k.a Teflon Tape) is recommended in a quantity sufficient to avoid clearance without causing too tight shutting.

#### **INSTALLAING PIPES UNDERGROUND & ABOVE GROUND**

To prevent the sagging of the pipe line in unstable soils, the following steps and options are recommended:

- draining the soil
- build up a foundation on piles
- bedding the pipe line on a boardwalk
- laying a stone riprap with fine gravel fill.

Spot supporting of the pipe line is not advisable.

#### **Preparing the Pipes**

Before installation, each pipe and fitting should be inspected to see that its bore is free from foreign matter and that its outside surface has no large scores or any other damage. Pipe ends should be checked to ensure that the spigots and sockets are free from damage.

Pipes of the required diameter and class should be identified and matched with their respective fittings and placed ready for installation.

#### Preparing the Trench

PVC pipe is likely to be damaged or deformed if its support by the ground on which it is laid is not made as uniform as possible. The trench bottom should be examined for irregularities and any hard projections removed.

#### Trench Widths

A trench should be as narrow as practical but adequate to allow space for working area and for tamping the side support. It should be not less than 200 mm wider than the outside diameter of the pipe irrespective of soil condition.

#### **Wide Trenches**

For deep trenches where significant soil loading may occur, the trench should not exceed the widths given in the Table below without further investigation.

#### **Unstable Conditions**

Where a trench, during or after excavation, tends to collapse or cave in, it is considered unstable. If the trench is located, for instance, in a street or a narrow pathway and it is therefore impractical to widen the



trench, support should be provided for the trench walls in the form of timber planks or other suitable shoring. Alternatively the trench should be widened until stability is reached. At this point, a smaller trench may then be excavated in the bottom of the trench to accept the pipe. In either case do **not** exceed the maximum trench width at the top of the pipe unless allowance has been made for the increased load.



#### **Trench Depths**

The recommended minimum trench depth is determined by the loads imposed on the pipe such as the mass of backfill material, the anticipated traffic loads and any other superimposed loads. The depth of the trench should be sufficient to prevent damage to the pipe when the anticipated loads are imposed upon it.

#### **Pipe Side Support**

Material selected for pipe side support should be adequately tamped in layers of not more than 150 mm. Care should be taken not to damage the exposed pipe and to tamp evenly on either side of the pipe to prevent pipe distortion.

Unless otherwise specified, the pipe side support and pipe overlay material used should be identical with the pipe bedding material.

#### **Pipe Overlay**

The pipe overlay material should be levelled and tamped in layers to a minimum height of 150 mm above the crown of the pipe. Care should be taken not to disturb the line or grade of the pipeline, where this is critical, by excessive tamping.

#### **Backfill**

Unless otherwise specified, excavated material from the site should constitute the back-fill. Gravel and sand can be compacted by vibratory methods and clays by tamping. This is best achieved when the soils are wet. If water flooding is used and extra soil has to be added to the original backfill, this should be done only when the flooded backfill is firm enough to walk on. When flooding the trench, care should be taken not to float the pipe.

PVC pipes can be installed under roads in either the longitudinal or transverse direction.

The type of rock / granular materials specified for road subgrades have a very high soil modulus and offer excellent side support for flexible pipes as well as minimising the effects of dead and live loads. This represents an ideal structural environment for PVC pipes.

Consideration should be given at the time of installation to ensure:

- a) construction loadings are allowed for:
- b) the pipes are buried at sufficient depth to ensure they are not disturbed during future realignments or regrading of the road; and
- c) minimum depths of cover and compaction techniques are observed.

#### **Pipeline Buoyancy**

Pipe, under wet conditions, can become buoyant in the trench. PVC pipe, being lighter than most pipe materials, should be covered with sufficient overlay and backfill material to prevent inadvertent flotation and movement. A depth of cover over the pipe of 1.5 times the diameter is usually adequate.



#### **Expansion and Contraction**

Pipe will expand or contract if it is installed during very hot or very cold weather, so it is recommended that the final pipe connections be made when the temperature of the pipe has stabilised at a temperature close to that of the backfilled trench. When the pipe has to be laid in hot weather, precautions should be taken to allow for the contraction of the line which will occur when it cools to its normal working temperature. For solvent cemented systems, the lines should be free to move until a strong bond has been developed (see Solvent Cement Jointing Procedures) and installation procedure should ensure that contraction does not impose strain on newly made joints. For rubber ring jointed pipes, if contraction accumulates over several lengths, pull-out of a joint can occur. To avoid this possibility the preferred technique is to back-fill each length, at least partially, as laying proceeds. (It may be required to leave joints exposed for test and inspection.) It should be noted that rubber ring joint design allows for contraction to occur. Provided joints are made to the witness mark in the first instance, and contraction is taken up approximately evenly at each joint, there is no danger of loss of seal. A gap between witness mark and socket of up to 10 mm after contraction is quite acceptable. Further contraction may be observed on pressurisation of the line (so-called Poisson contraction due to circumferential strain). Again this is anticipated in joint design and is quite in order.

#### **Installing Pipes on a Curve**

When installing pipes on a curve, the pipe should be jointed straight and then laid to the curve. Bending of pipes is achieved in practice after each joint is made, by laterally loading the pipe by any convenient means, and fixing in place by compacted soil, or appropriate fixings above ground. The technique used depends on the size and class of pipe involved, as clearly the forces required to induce bending vary over a very large range. For buried lines in good soil, the compaction process can be used to induce bending as illustrated below. Bending aids, crowbars etc. must always be padded to prevent damage to pipes. Permanent point loads are not acceptable.

Significant bending moments should not be exerted on rubber ring joints, since this introduces undesirable stresses in the spigot and socket that may be detrimental to long term performance. To avoid this, reaction supports should be placed adjacent to the socket rather than on the sockets. For buried pipes this also allows the joint to be left open for inspection during testing. Because of this restriction, the length available for bending is less than the full length of the pipe. It is also not practicable to maintain a constant radius of curvature by application of point load forces. The calculations shown in the Table below are derived from beam theory and assume a 5m bending length for calculation of the deflection angle. Solvent cement jointed pipes may be curved continuously, ie., bending moments may be transmitted across the joints, but bending may be applied only after full curing, 24 hours for pressure and 48 hours for non-pressure joints. For solvent cement jointed pipelines, the angular deflection figures should be increased by 20%

#### **Thrust Blocks**

Underground PVC pipelines jointed with rubber ring joints require concrete thrust blocks to prevent movement of the pipeline when a pressure load is applied. In some circumstances, thrust support may also be advisable in solvent cement jointed systems. Uneven thrust will be present at most fittings. The thrust block transfers the load from the fitting, around which it is placed, to the larger bearing surface of the solid trench wall.



## PIPE SPECIFICATIONS

## ASTM D 1785 | Schedule 40 / Schedule 80

Nominal Pipe Size	Outside Diameter	Wall Thickness						
(Inch)	(mm)	Schedule 40 (mm)	Schedule 80 (mm)					
1/2	21.3	2.8	3.7					
3/4	26.7	2.9	3.9					
1	33.4	3.4	4.5					
1 1/4	42.2	3.6	4.8					
1 ½	48.3	3.7	5.1					
2	60.3	3.9	5.5					
2 ½	73.0	5.2	7.0					
3	88.9	5.5	7.6					
4	114.3	6.0	8.6					
6	168.3	7.1	11.0					
8	219.1	8.2	12.7					
10	273.1	9.3	15.1					
12	323.9	10.3	17.5					
14	355.6	11.1	19.1					
16	406.4	12.7	21.4					

## ASTM D 2241 | Class 100 / Class 125 / Class 160 / Class 200 / Class 315

Nominal	Outside		1	Wall Thickness	S	
Pipe Size	Diameter	SDR-41	SDR-32.5	SDR-26	SDR-21	SDR-13.5
(Inch)	(mm)	100psi	125psi	160psi	200psi	315psi
		mm	mm	mm	mm	mm
1/2	21.3	-	-	-	-	1.6
3/4	26.7	-	-	-	1.5	2.0
1	33.4	-	-	1.5	1.6	2.5
1 1/4	42.2	-	1.5	1.6	2.0	3.1
1 ½	48.3	-	1.5	1.9	2.3	3.6
2	60.3	-	1.9	2.3	2.9	4.5
2 ½	73.0	-	2.2	2.8	3.5	5.4
3	88.9	2.2	2.7	3.4	4.2	6.6
4	114.3	2.8	3.5	4.4	5.4	8.5
6	168.3	4.1	5.2	6.5	8.0	12.5
8	219.1	5.3	6.7	8.4	10.4	-
10	273.1	6.6	8.4	10.5	13.0	-
12	323.9	7.9	9.9	12.5	15.4	-
14	355.6	8.7	10.9	13.7	16.9	-
16	406.4	9.9	12.5	15.6	19.3	-



## PIPE SPECIFICATIONS

**BS 3505 : 1986 : PVC Pressure Pipes for Cold Potable Water** 

Nominal					Wall Th	ickness		
Size (inch)	Outside D	iameter	Class C (	9 bar)	Class D (	12 bar)	Class E (1	15 bar)
1/2"	21.2	21.5	-	-	-	-	1.7	2.1
3/4"	26.6	26.9	-	•	-		1.9	2.5
1"	33.4	33.7	-	1	-	ı	2.2	2.7
1 1/4"	42.1	42.4	-	1	2.2	2.7	2.7	3.2
1 ½"	48.1	48.4	-	1	2.5	3.0	3.1	3.7
2" *	60.2	60.5	2.5	3.0	3.1	3.7	3.9	4.5
2 ½"	75.0	73.30	3.0	3.5	3.9	4.5	4.8	5.5
3" *	88.7	89.1	3.5	4.1	4.6	5.3	5.7	6.6
4" *	114.1	114.5	4.5	5.2	6.0	6.9	7.3	8.4
6" *	168.0	168.5	6.6	7.6	8.8	10.2	10.8	12.5
8" *	218.8	219.4	7.8	9.0	10.3	11.9	12.6	14.5
10" *	272.6	273.4	9.7	11.2	12.8	14.8	15.7	18.1
12" *	323.4	324.3	11.5	13.3	15.2	17.5	18.7	21.6
14"	355.0	356.0	12.6	14.5	16.7	19.2	20.5	23.6
16" *	405.9	406.9	14.5	16.7	19.0	21.9	23.4	27.0

## BS 3506 : 1969 PVC-U Pressure Pipes for Industrial Uses

							Wall Th	ickness				
Nominal Size	in our outerus		Clas (non-pre		<b>Clas</b> 6.0	s B	Clas 9.0	s C	<b>Clas</b> 12.0		<b>Clas</b> 15.0	
(INCH)			Individua	al Value	Individua	al Value	Individua		Individua	al Value	Individua	al Value
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Inches	mm	mm	mm	Mm	mm	mm	mm	mm	mm	mm	mm	mm
1/2"	21.2	21.5	-	-	-	-	-	-	-	-	1.7	2.1
3/4"	26.6	26.9	-	-	-	-	-	-	-	-	1.9	2.5
1"	33.4	33.7	-	-	-	-	-	-	-	-	2.2	2.7
1 ¼"	42.1	42.4	-	-	-	-	-	-	2.2	2.7	2.7	3.2
1 ½"	48.1	48.4	1.8	2.2	-	-	-	-	2.5	3.0	3.1	3.7
2" *	60.2	60.5	1.8	2.2	-	-	2.5	3.0	3.1	3.7	3.9	4.5
2 ½"	75.0	73.30	1.8	2.2	-	-	3.0	3.5	3.9	4.5	4.8	5.5
3" *	88.7	89.1	1.8	2.2	2.9	3.4	3.5	4.1	4.6	5.3	5.7	6.6
4" *	114.1	114.5	2.3	2.8	3.4	4.0	4.5	5.2	6.0	6.9	7.3	8.4
5" *	140.0	140.4	2.6	3.1	3.8	4.4	5.5	6.4	7.3	8.4	9.0	10.4
6" *	168.0	168.5	3.1	3.7	4.5	5.2	6.6	7.6	8.8	10.2	10.8	12.5
7" *	193.5	194.0	3.1	3.7	5.2	6.0	7.7	8.9	10.1	11.7	12.4	14.3
8" *	218.8	219.4	3.1	3.7	5.3	6.1	7.8	9.0	10.3	11.9	12.6	14.5
9" *	244.1	244.8	3.1	3.7	5.9	6.8	8.7	10.0	11.5	13.3	14.1	16.3
10" *	272.6	273.4	3.1	3.7	6.6	7.6	9.7	11.2	12.8	14.8	15.7	18.1
12" *	323.4	324.3	3.1	3.7	7.8	9.0	11.5	13.3	15.2	17.5	18.7	21.6
14"	355.0	356.0	3.6	4.2	8.5	9.8	12.6	14.5	16.7	19.2	20.5	23.6
16" *	405.9	406.9	4.1	4.8	9.7	11.2	14.5	16.7	19.0	21.9	23.4	27.0
18" *	456.7	457.7	4.6	5.3	11.0	12.7	16.3	18.8	21.4	24.7	-	-
20" *	507.5	508.5	5.1	5.9	12.2	14.1	18.1	20.9	-	-	-	-
22" *	558.3	559.3	5.6	6.5	13.4	15.5	19.9	22.9	-	-	-	-
24" *	609.1	610.1	6.1	7.1	14.6	16.8	21.7	25.0	-	-	-	-



#### EN 1452-2:2009 Inch Series

Nominal					Wall Th	ickness		
Size	Outside D	iameter	PN 9		PN 12		PN 15	
(Inch)								
1/2"	21.2	21.5	-	-	-	-	1.7	2.1
3/4"	26.6	26.9	-	-	-	-	1.9	2.5
1"	33.4	33.7	-	-	-	-	2.2	2.7
1¼"	42.1	42.4	-	-	2.2	2.7	2.7	3.2
1½"	48.1	48.4	-	-	2.5	3.0	3.1	3.7
2" *	60.2	60.5	2.5	3.0	3.1	3.7	3.9	4.5
2½"	75.0	73.30	3.0	3.5	3.9	4.5	4.8	5.5
3" *	88.7	89.1	3.5	4.1	4.6	5.3	5.7	6.6
4" *	114.1	114.5	4.5	5.2	6.0	6.9	7.3	8.4
6" *	168.0	168.5	6.6	7.6	8.8	10.2	10.8	12.5
8" *	218.8	219.4	7.8	9.0	10.3	11.9	12.6	14.5
10" *	272.6	273.4	9.7	11.2	12.8	14.8	15.7	18.1
12" *	323.4	324.3	11.5	13.3	15.2	17.5	18.7	21.6
16" *	405.9	406.9	14.5	16.7	19.0	21.9	23.4	27.0

<sup>\*</sup>Available in Rubber Ring Type



## PIPE SPECIFICATIONS

## EN ISO 1452-2:2009 Metric Series

Nominal Outside	Nominal (n	ninimum) W	all Thickne	ess					
Diameter (mm)	Series16	Series12	.5 Series	10	Serie	s8	Ser	ries6.3	Series5
	<b>SDR 33</b>	<b>SDR 26</b>	SDR 2	21	SDR	17	SD	R	SDR 11
							13.	6	
	Nominal Pi	ressure PN	based on	servic	ce coe	efficie	nt C	=2.5	
	PN6	PN8	PN10		PN12	2.5	PN	16	PN20
20	-	-	-		-			1.5	1.9
25	-	-	-		1.	5		1.9	2.3
32	-	1.5	1.6	6	1.	9		2.4	2.9
40	1.5	1.6	1.9	)	2.			3.0	3.7
50	16	2.0	2.4		3.	0		3.7	4.6
63*	2.0	2.5	3.0	)	3.	8		4.7	5.8
75*	2.3	2.9	3.6	6	4.	5		5.6	6.8
90*	2.8	3.5	4.3	3	5.	4		6.7	8.2
	Nominal (n	ninimum) W	all Thickne	ess					
	Series	Series	Series	Serie	es	Serie	es	Series	Series
	20	16	12.5	10		8		6.3	5
	SDR 41	SDR 33	<b>SDR 26</b>	SDR	R 21	SDR	17	SDR	SDR11
								13.6	
		ressure PN							
	PN6	PN8	PN10	PN1	2.5	PN1	6	PN20	PN25
110*	2.7	3.4	4.2	5.	3	6.0	6	8.1	10.0
125	3.1	3.9	4.8	6.	0	7.4	4	9.2	11.4
140	3.5	4.3	5.4	6.	7	6.3	3	10.3	12.7
160*	4.0	4.9	6.2	7.	7	9.	5	11.8	14.6
200*	4.9	6.2	7.7	9.	6	11.	.9	14.7	18.2
225*	5.5	6.9	8.6	10	.8	13.	.4	16.6	-
250*	6.2	7.7	9.6	11	.0	14.	.8	18.4	-
280	6.9	8.6	10.7	13	.4	16.	.6	20.5	-
315*	7.7	9.7	12.1	15	.0	18.	.7	23.2	-
400*	9.8	12.3	15.3	19	.1	23.	.7	29.4	-

<sup>\*</sup>Available in Rubber Ring Type



## PIPE SPECIFICATIONS

#### EN ISO 4422-2:1996

Nominal Outside		(minimum)					
Diameter (mm)		service co					
	Series1	Series16	Series	Series1	Series8	Series	Series
	6.7	SDR 33	12.5	0	SDR17	6.3	4
	SDR	PN 6.3	SDR 26	SDR 21	PN	SDR	SDR9
	34.4		PN 8	PN 10	12.5	13.6	PN 25
	PN 6					PN 16	
20	-	-	-	-	-	1.5	2.3
25	-	-	-	-	1.5	1.9	2.8
32	-	-	-	1.6	1.9	2.4	3.6
40	-	1.5	1.6	1.9	2.4	3.0	4.5
50	-	1.6	2.0	2.4	3.0	3.7	5.6
63*	1.9	2.0	2.5	3.0	3.8	4.7	7.1
75*	2.2	2.3	2.9	3.6	4.5	5.6	8.4
90*	2.7	2.8	3.5	4.3	5.4	6.7	10.1
	Nominal	(minimum) \	Wall Thick	ness			
	Based or	service co	efficient of	C=2.0			
	Series2	Series16	Series	Series1	Series8	Series	Series
	0	SDR 33	12.5	0	SDR17	5	6.3
	<b>SDR 41</b>	PN 8	<b>SDR 26</b>	SDR 21	PN 16	SDR	SDR
	PN 6.3		PN 10	PN		11	13.6
				12.5		PN 25	PN 20
110*	2.7	3.4	4.2	5.3	6.6	10.0	8.1
125	3.1	3.9	4.8	6.0	7.4	11.4	9.2
140	2.5	4.3	5.4	6.7	6.3	12.7	10.3
160*	4.0	4.9	6.2	7.7	9.5	14.6	11.8
200*	4.9	6.2	7.7	9.6	11.9	18.2	14.7
225*	5.5	6.9	8.6	10.8	13.4	-	16.6
250*	6.2	7.7	9.6	11.9	14.8	-	18.4
280	6.9	8.6	10.7	13.4	16.6	-	20.5
315*	7.7	9.7	12.1	15.0	18.7	-	23.2
400*	9.8	12.3	15.3	19.1	23.7	-	29.4

<sup>\*</sup>Available in Rubber Ring Type



## **PIPE SPECIFICATIONS**

#### ISO 161/1

Nominal Outside	Nominal (minimum) Wall Thickness Series 20   Series 12.5   Series 8   Series 6.3   Series 5										
Diameter (mm)	Series 20	Series 12.5	Series 8	Series 6.3	Series 5						
	SDR41	SDR 26	SDR 17	SDR 13.6	SDR 11						
	PN 6.3	PN 10	PN 16	PN 20	PN 25						
20	-	-	1.2	1.5	19.						
25	-	-	1.5	1.9	2.3						
32	-	-	1.9	2.4	2.9						
40	-	1.6	2.4	3.0	3.7						
50	1.3	2.0	3.0	3.7	4.6						
63*	1.6	2.5	3.8	4.7	5.8						
75*	1.9	2.9	4.5	5.6	6.8						
90*	2.2	3.5	5.4	6.7	8.2						
110*	2.7	4.2	6.6	8.1	10.0						
125	3.1	4.8	7.4	9.2	11.4						
140	3.5	5.4	8.3	10.3	12.7						
160*	4.0	6.2	9.5	11.8	14.6						
200*	4.9	7.7	11.9	14.7	18.2						
225*	5.5	8.6	13.4	16.6	20.5						
250*	6.2	9.6	14.8	18.4	22.7						
280	6.9	10.7	16.6	20.6	25.4						
315*	7.7	12.1	18.7	23.2	28.6						
400*	9.8	15.3	23.7	29.4	36.3						

<sup>\*</sup>Available in Rubber Ring Type



## PIPE SPECIFICATIONS

## DIN 8062:2009 - PVC-U Pressure Pipes

(Continued to next page...)

Nominal	Nominal (minimum) Wall Thickness							
Outside	Nominal Pressure PN based in safety factor (SF)=2.5							
Diameter	Series	Series	Series	Series	Series	Series	Series5	Series
(mm)	25	16.7	12.5	10	8	6.3	SDR11	SDR9
	SDR51	SDR34.4	SDR26	SDR21	SDR17	SDR13.6	PN 20	PN 25
	PN 4	PN 6	PN 8	PN 10	PN	PN 16		
					12.5			
20	-	-	-	-	-	1.5	1.9	2.3
25	-	-	-	-	1.5	1.9	2.3	2.8
32	-	-	-	1.6	1.9	2.4	2.9	3.6
40	-	-	1.6	1.9	2.4	3.0	3.7	4.5
50	-	1.5	2.0	2.4	3.0	3.7	4.6	5.6
63*	-	1.9	2.5	3.0	3.8	4.7	5.8	7.1
75*	1.5	2.2	2.9	3.6	4.5	5.6	6.8	8.4
90*	1.8	2.7	3.5	4.3	5.4	6.7	8.2	10.1
110*	2.2	3.2	4.2	5.3	6.6	8.1	10.0	12.3
125	2/5	3.7	4.8	6.0	7.4	9.2	11.4	14.0
140	2.8	4.1	5.4	6.7	8.3	10.3	12.7	15.7
160*	3.2	4.7	6.2	7.7	9.5	11.8	14.6	17.9
200*	3.9	5.9	7.7	9.6	11.9	14.7	18.2	22.4
225*	4.4	6.6	8.6	10.8	13.4	16.6	20.5	25.2
250*	4.9	7.3	9.6	11.9	14.8	18.4	22.7	27.9
280	5.5	8.2	10.7	13.4	16.6	20.6	25.4	31.3
315*	6.2	9.2	12.1	15.0	18.7	23.2	28.6	-
400*	7.9	11.7	15.3	19.1	23.7	29.4	-	-

<sup>\*</sup>Available in Rubber Ring Type



## PIPE SPECIFICATIONS

## DIN 8062:2009 (PVC-U Pressure Pipes)

Nominal Outside	Nominal (minimum) Wall Thickness						
Diameter (mm)	Nominal Pressure PN based on safety factor (SF)=2.0						
	Series2	Series20	Series	Series1	Series8	Series	Series
	5	SDR 41	12.5	0	SDR17	6.3	5 SDR
	SDR 51	PN 6	SDR 26	<b>SDR 21</b>	PN 16	SDR	11
	PN 5		PN 10	PN		13.6	PN 25
				12.5		PN 20	
20	-	-	-	-	1.2	1.5	1.9
25	-	-	-	-	1.5	1.9	2.3
32	-	-	-	-	1.9	2.4	2.9
40	-	-	1.6	1.9	2.4	3.0	3.7
50	-	1.3	2.0	2.4	3.0	3.7	4.6
63*	-	1.6	2.5	3.0	3.8	4.7	5.8
75*	1.5	1.9	2.9	3.6	4.5	5.6	6.8
90*	1.8	2.2	3.5	4.3	5.4	6.7	8.2
110*	2.2	2.7	4.2	5.3	6.6	8.1	10.0
125	2.5	3.1	4.8	6.0	7.4	9.2	11.4
140	2.8	3.5	5.4	6.7	8.3	10.3	12.7
160*	3.2	4.0	6.2	7.6	9.5	11.8	14.6
200*	3.9	4.9	7.7	9.5	11.9	14.7	18.2
225*	4.4	5.5	8.6	10.7	13.4	16.6	20.5
250*	4.9	6.2	9.6	11.9	14.8	18.4	22.7
280	5.5	6.9	10.7	13.3	16.6	20.6	25.4
315*	6.2	7.7	12.1	15.0	18.7	23.2	28.6
400*	7.9	9.8	15.3	19.0	23.7	29.4	36.3

<sup>\*</sup>Available in Rubber Ring Type



## **PRODUCTS**

#### **UPVC PIPES - SCHEDULE 80**

#### **Features:**

Conforms to ASTM D- 1785, Type 1, Grade 1

All PVC piping is produced from NSF approved compounds conforming to ASTM D- 1784

Standard length 20' (6m)

Handles temperatures up to 140°F (60°C)

Not affected by soil in buried applications

Can be easily Threaded

Dark Grey in Color

Contains UV stabilizers TiO2

Completely made in accordance to USA Standard



Length in Meters

Code	Size	Length
AKPP801	1/2"	6m
AKPP802	3/,"	6m
AKPP803	1"	6m
AKPP804	1¼"	6m
AKPP805	1½"	6m
AKPP806	2"	6m
AKPP807	2½"	6m
AKPP808	3"	6m
AKPP809	4"	6m
AKPP8010	6"	6m
AKPP8011	8"	6m
AKPP8012	10"	6m
AKPP8013	12"	6m



## **PRODUCTS**

## **UPVC PIPES - SCHEDULE 40**

#### **Features:**

Conforms to ASTM D- 1785

All PVC piping is produced from NSF approved compounds conforming to ASTM D- 1784 Standard length 20' (6m)

Handles temperatures up to 140°F (60°C)

Not affected by soil in buried applications

Available in Light Grey and White Colors

Contains UV stabilizers TiO2

Completely made in accordance to USA Standard



Length in Meters

Code	Size	Length
AKPP401Q	1/2"	6m
AKPP402Q	3/4"	6m
AKPP403Q	1"	6m
AKPP404Q	1¼"	6m
AKPP405Q	1½"	6m
AKPP406Q	2"	6m
AKPP407Q	2½"	6m
AKPP408Q	3"	6m
AKPP409Q	4"	6m
AKPP4010Q	6"	6m
AKPP4011Q	8"	6m
AKPP4012Q	10"	6m
AKPP4013Q	12"	6m



## **UPVC HIGH PRESSURE FITTINGS – SCHEDULE 80**

Solvent Welded Fittings as per ASTM D 2467/2464 (USA Standard) Imperial Sizes (Inches)

## Elbow 90° SXS



Code	Size	Qty/Ctn
AKP-SC80-ELB1	1/2"	510
AKP-SC80-ELB2	3/4"	310
AKP-SC80-ELB3	1"	185
AKP-SC80-ELB4	11/4"	109
AKP-SC80-ELB5	1½"	90
AKP-SC80-ELB6	2"	48
AKP-SC80-ELB7	2½"	30
AKP-SC80-ELB8	3"	20
AKP-SC80-ELB9	4"	10
AKP-SC80-ELB10	6"	7
AKP-SC80-ELB11	8"	4
AKP-SC80-ELB12	10"	-
AKP-SC80-ELB13	12"	-

## Tee SXSXS



Code	Size	Qty/Ctn
AKP-SC80-TEE1	1/2"	330
AKP-SC80-TEE2	3/4"	201
AKP-SC80-TEE3	1"	119
AKP-SC80-TEE4	11/4"	70
AKP-SC80-TEE5	1½"	52
AKP-SC80-TEE6	2"	30
AKP-SC80-TEE7	2½"	22
AKP-SC80-TEE8	3"	18
AKP-SC80-TEE9	4"	10
AKP-SC80-TEE10	6"	4
AKP-SC80-TEE11	8"	3
AKP-SC80-TEE12	10"	-
AKP-SC80-TEE13	12"	-



Elbow 45° SXS



Code	Size	Qty/Ctn
AKP-SC80-EL451	1/2"	540
AKP-SC80-EL452	3/4"	340
AKP-SC80-EL453	1"	185
AKP-SC80-EL454	11/4"	109
AKP-SC80-EL455	1½"	90
AKP-SC80-EL456	2"	48
AKP-SC80-EL457	2½"	30
AKP-SC80-EL458	3"	20
AKP-SC80-EL459	4"	10
AKP-SC80-EL4510	6"	7
AKP-SC80-EL4511	8"	4
AKP-SC80-EL4512	10"	-
AKP-SC80-EL4513	12"	-

## Coupling



Code	Size	Qty/Ctn
AKP-SC80-CP1	1/2"	405
AKP-SC80-CP2	3/4"	235
AKP-SC80-CP3	1"	336
AKP-SC80-CP4	11⁄4"	119
AKP-SC80-CP5	1½"	140
AKP-SC80-CP6	2"	81
AKP-SC80-CP7	2½"	54
AKP-SC80-CP8	3"	36
AKP-SC80-CP9	4"	14
AKP-SC80-CP10	6"	12
AKP-SC80-CP11	8"	8
AKP-SC80-CP12	10"	-
AKP-SC80-CP13	12"	-



## **Reducing Tee**



Code	Size	Qty/Ctn
AKP-SC80-RT1	3/4" X 1/2"	230
AKP-SC80-RT2	1" x ½"	159
AKP-SC80-RT3	1" x ¾"	152
AKP-SC80-RT4	11/4" x 3/4"	95
AKP-SC80-RT5	1¼" x 1"	80
AKP-SC80-RT6	1½" x 1"	55
AKP-SC80-RT7	1½" x 1¼"	45
AKP-SC80-RT8	2" x 11/4"	36
AKP-SC80-RT9	2" x 1½"	36
AKP-SC80-RT10	2½" x 1½"	28
AKP-SC80-RT11	2½" x 2"	21
AKP-SC80-RT12	3" x 2"	20
AKP-SC80-RT13	3" x 2½"	20
AKP-SC80-RT14	4" x 2½"	12
AKP-SC80-RT15	4" x 3"	16
AKP-SC80-RT16	6" x 4"	-

## **REDUCING BUSH - SXS** (continued to next page)



Code	Size	Qty/Ctn
AKP-SC80-RBS1	3/4" X 1/2"	700
AKP-SC80-RBS2	1" x ½"	378
AKP-SC80-RBS3	1" x ¾"	378
AKP-SC80-RBS4	1¼" x ½"	280
AKP-SC80-RBS5	1¼" x ¾"	280
AKP-SC80-RBS6	1¼" x 1"	280
AKP-SC80-RBS7	1½" x ¾"	210
AKP-SC80-RBS8	1½" x 1"	210
AKP-SC80-RBS9	1½" x 1¼"	210
AKP-SC80-RBS10	2" x ½"	140
AKP-SC80-RBS11	2" x ¾"	140
AKP-SC80-RBS12	2" x 11/4"	140
AKP-SC80-RBS13	2" x 1½"	140
AKP-SC80-RBS14	2½" x 1½"	140
AKP-SC80-RBS15	2½" x 2"	120
AKP-SC80-RBS16	3" x 2"	60
AKP-SC80-RBS17	3" x 2½"	31
AKP-SC80-RBS18	4" x 3"	32
AKP-SC80-RBS19	4" x 6"	12
AKP-SC80-RBS20	8" x 6"	5
AKP-SC80-RBS21	10" x 8"	5 3 1
AKP-SC80-RBS22	12" x 10"	1

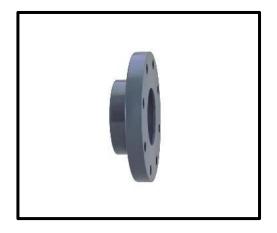


## End Cap / Socket Cap



Code	Size	Qty/Ctn
AKP-SC80-ENDC1	1/,"	1200
AKP-SC80-ENDC2	3/4"	1000
AKP-SC80-ENDC3	1"	500
AKP-SC80-ENDC4	11/4"	300
AKP-SC80-ENDC5	1½"	300
AKP-SC80-ENDC6	2"	140
AKP-SC80-ENDC7	2½"	100
AKP-SC80-ENDC8	3"	90
AKP-SC80-ENDC9	4"	50
AKP-SC80-ENDC10	6"	20
AKP-SC80-ENDC11	8"	9
AKP-SC80-ENDC12	10"	3
AKP-SC80-ENDC13	12"	-

## **One Piece Flange**



Code	Size	Qty/Ctn
AKP-SC80-FL1	2"	40
AKP-SC80-FL2	3"	20
AKP-SC80- FL3	4"	15
AKP-SC80- FL4	6"	10
AKP-SC80- FL5	8"	5
AKP-SC80- FL6	2½"	-



## **Male Adapter (Threaded)**



Code	Size	Qty/Ctn
AKP-SC80-MAT1	1/2"	665
AKP-SC80-MAT2	3/4"	385
AKP-SC80-MAT3	1"	250
AKP-SC80-MAT4	1¼"	150
AKP-SC80-MAT 5	1½"	200
AKP-SC80-MAT6	2"	130
AKP-SC80-MAT8	3"	60
AKP-SC80-MAT9	4"	50

## Female Adapter (Threaded)



Code	Size	Qty/Ctn
AKP-SC80-FAT1	1/2"	400
AKP-SC80-FAT2	3/4"	233
AKP-SC80-FAT3	1"	144
AKP-SC80-FAT4	11/4"	198
AKP-SC80-FAT5	1½"	139
AKP-SC80-FAT6	2"	72
AKP-SC80-FAT8	3"	36
AKP-SC80-FAT9	4"	12

## Female Threaded Elbow 90° One Side Threaded (SXFT)



Code	Size	Qty/Ctn
AKP-SC80-FELT11	1/2"	410
AKP-SC80-FELT12	3/4"	260
AKP-SC80-FELT13	1"	180
AKP-SC80-FELT14	1½"	90
AKP-SC80-FELT15	2"	50
AKP-SC80-FELT16	3"	15



## Female Threaded Elbow 90° Both Side Threaded (FTXFT)



Code	Size	Qty/Ctn
AKP-SC80-FELT21	1/,"	410
AKP-SC80-FELT22	3/4"	260
AKP-SC80-FELT23	1"	180
AKP-SC80-FELT24	1½"	90
AKP-SC80-FELT25	2"	50
AKP-SC80-FELT26	3"	15

## **Nipple**



Code	Size	Qty/Ctn
AKP-SC80-NIP1	1/2"	600
AKP-SC80-NIP2	3/4"	450
AKP-SC80-NIP3	1"	335
AKP-SC80-NIP4	1½"	210
AKP-SC80-NIP5	2"	60
AKP-SC80-NIP6	3"	10

## Union



Code	Size	Qty/Ctn
AKP-SC80-UN1	1/2"	96
AKP-SC80-UN2	3/4"	72
AKP-SC80-UN3	1"	60
AKP-SC80-UN4	11/4"	48
AKP-SC80-UN5	1½"	36
AKP-SC80-UN6	2"	24
AKP-SC80-UN7	2½"	18
AKP-SC80-UN8	3"	10
AKP-SC80-UN9	4"	4



## **Male Adapter with Brass Thread**



Code	Size	Qty/Ctn
AKP-SC80-MABT1	1/,"	670
AKP-SC80-MABT2	3/4"	400
AKP-SC80-MABT3	1"	255
AKP-SC80-MABT4	11/4"	150
AKP-SC80-MABT5	1½"	195
AKP-SC80-MABT6	2"	130

## **Female Elbow with Brass Thread**



Code	Size	Qty/Ctn
AKP-SC80-EL451	1/2"	180
AKP-SC80-EL452	3/4"	144
AKP-SC80-EL453	1"	90
AKP-SC80-EL455	1½"	50

## **Female Tee with Brass Thread**



Code	Size	Qty/Ctn
AKP-SC80-EL451	1/2"	110
AKP-SC80-EL452	3/4"	90
AKP-SC80-EL453	1"	60
AKP-SC80-EL455	11/2"	35



## **UPVC PRESSURE FITTINGS – SCHEDULE 40**

## Solvent Welded Fittings as per ASTM D 2665 (USA Standard)

(Available in Grey & White Colour) – Imperial Sizes (inch)

## Elbow 90° SXS



Code	Size	Qty/Ctn
AKP-SC40-ELB1	1/2"	510
AKP-SC40-ELB2	3/4"	310
AKP-SC40-ELB3	1"	185
AKP-SC40-ELB4	11⁄4"	109
AKP-SC40-ELB5	1½"	90
AKP-SC40-ELB6	2"	48
AKP-SC40-ELB7	2½"	30
AKP-SC40-ELB8	3"	20
AKP-SC40-ELB9	4"	10
AKP-SC40-ELB10	6"	7
AKP-SC40-ELB11	8"	4
AKP-SC40-ELB12	10"	-
AKP-SC40-ELB13	12"	-

## Tee SXSXS



Code	Size	Qty/Ctn
AKP-SC40-TEE1	1/2"	330
AKP-SC40-TEE2	3/4"	201
AKP-SC40-TEE3	1"	119
AKP-SC40-TEE4	11/4"	70
AKP-SC40-TEE5	1½"	52
AKP-SC40-TEE6	2"	30
AKP-SC40-TEE7	2½"	22
AKP-SC40-TEE8	3"	18
AKP-SC40-TEE9	4"	10
AKP-SC40-TEE10	6"	4
AKP-SC40-TEE11	8"	3
AKP-SC40-TEE12	10"	-
AKP-SC40-TEE13	12"	-



Elbow 45° SXS



Code	Size	Qty/Ctn
AKP-SC40-EL451	1/2"	540
AKP-SC40-EL452	3/4"	340
AKP-SC40-EL453	1"	185
AKP-SC40-EL454	11/4"	109
AKP-SC40-EL455	11/2"	90
AKP-SC40-EL456	2"	48
AKP-SC40-EL457	21/2"	30
AKP-SC40-EL458	3"	20
AKP-SC40-EL459	4"	10
AKP-SC40-EL4510	6"	7
AKP-SC40-EL4511	8"	4
AKP-SC40-EL4512	10"	-
AKP-SC40-EL4513	12"	-

## Coupling



Code	Size	Qty/Ctn
AKP-SC40-CP1	1/2"	405
AKP-SC40-CP2	3/4"	235
AKP-SC40-CP3	1"	336
AKP-SC40-CP4	11/4"	119
AKP-SC40-CP5	11/2"	140
AKP-SC40-CP6	2"	81
AKP-SC40-CP7	2½"	54
AKP-SC40-CP8	3"	36
AKP-SC40-CP9	4"	14
AKP-SC40-CP10	6"	12
AKP-SC40-CP11	8"	8
AKP-SC40-CP12	10"	-
AKP-SC40-CP13	12"	-



## **Reducing Tee**



Code	Size	Qty/Ctn
AKP-SC40-RT1	3/4" X 1/2"	230
AKP-SC40-RT2	1" x ½"	159
AKP-SC40-RT3	1" x ¾"	152
AKP-SC40-RT4	1¼" x ¾"	95
AKP-SC40-RT5	1¼" x 1"	80
AKP-SC40-RT6	1½" x 1"	55
AKP-SC40-RT7	1½" x 1¼"	45
AKP-SC40-RT8	2" x 11/4"	36
AKP-SC40-RT9	2" x 1½"	36
AKP-SC40-RT10	2½" x 1½"	28
AKP-SC40-RT11	2½" x 2"	21
AKP-SC40-RT12	3" x 2"	20
AKP-SC40-RT13	3" x 2½"	20
AKP-SC40-RT14	4" x 2½"	12
AKP-SC40-RT15	4" x 3"	16
AKP-SC40-RT16	6" x 4"	-

## Reducing Bush SXS (continued to next page)



AKP-SC40-RBS1	3/4" X 1/2"	700
AKP-SC40-RBS2	1" x ½"	378
AKP-SC40-RBS3	1" x ¾"	378
AKP-SC40-RBS4	11/4" x 1/2"	280
AKP-SC40-RBS5	1¼" x ¾"	280
AKP-SC40-RBS6	1¼" x 1"	280
AKP-SC40-RBS7	1½" x ¾"	210
AKP-SC40-RBS8	1½" x 1"	210
AKP-SC40-RBS9	1½" x 1¼"	210
AKP-SC40-RBS10	2" x ½"	140
AKP-SC40-RBS11	2" x ¾"	140
AKP-SC40-RBS12	2" x 11/4"	140
AKP-SC40-RBS13	2" x 1½"	140
AKP-SC40-RBS14	2½" x 1½"	140
AKP-SC40-RBS15	2½" x 2"	120
AKP-SC40-RBS16	3" x 2"	60
AKP-SC40-RBS17	3" x 2½"	31
AKP-SC40-RBS18	4" x 3"	32
AKP-SC40-RBS19	4" x 6"	12
AKP-SC40-RBS20	8" x 6"	5
AKP-SC40-RBS21	10" x 8"	3
AKP-SC40-RBS22	12" x 10"	1



## **End Cap / Socket Cap**



Code	Size	Qty/Ctn
AKP-SC40-ENDC1	1/2"	1200
AKP-SC40-ENDC2	3/4"	1000
AKP-SC40-ENDC3	1"	500
AKP-SC40-ENDC4	11⁄4"	300
AKP-SC40-ENDC5	11/2"	300
AKP-SC40-ENDC6	2"	140
AKP-SC40-ENDC7	2½"	100
AKP-SC40-ENDC8	3"	90
AKP-SC40-ENDC9	4"	50
AKP-SC40-ENDC10	6"	20
AKP-SC40-ENDC11	8"	9
AKP-SC40-ENDC12	10"	3
AKP-SC40-ENDC13	12"	-

## **Reducing Coupling**



Code	Size	Qty/Ctn
AKP-SC40-CP1	3/4" X 1/2"	500
AKP-SC40-CP2	1" x ½"	320
AKP-SC40-CP3	1" x ¾"	165
AKP-SC40-CP4	1¼" x ¾"	95
AKP-SC40-CP5	1¼" x 1"	60
AKP-SC40-CP6	1½" x 1"	43
AKP-SC40-CP7	1½" x 1¼"	30
AKP-SC40-CP8	2" x 11/4"	20
AKP-SC40-CP9	2" x 1½"	10
AKP-SC40-CP10	3" x 2"	7
AKP-SC40-CP11	3" x 4"	4
AKP-SC40-CP12	4" x 2"	-
AKP-SC40-CP13	2" x 1"	-



## **Male Adapter (Threaded)**



Code	Size	Qty/Ctn
AKP-SC40-MAT1	1/2"	665
AKP-SC40-MAT2	3/4"	385
AKP-SC40-MAT3	1"	250
AKP-SC40-MAT4	11/4"	150
AKP-SC40-MAT 5	1½"	200
AKP-SC40-MAT6	2"	130
AKP-SC40-MAT8	3"	60
AKP-SC40-MAT9	4"	50

## Female Adapter (Threaded)



Code	Size	Qty/Ctn
AKP-SC40-FAT1	1/2"	400
AKP-SC40-FAT2	3/4"	233
AKP-SC40-FAT3	1"	144
AKP-SC40-FAT4	11/4"	198
AKP-SC40-FAT5	1½"	139
AKP-SC40-FAT6	2"	72
AKP-SC40-FAT8	3"	36
AKP-SC40-FAT9	4"	12

## Female Threaded Elbow 90° One Side Threaded (SXFT)



Code	Size	Qty/Ctn
AKP-SC40-FELT11	1/2"	410
AKP-SC40-FELT12	3/4"	260
AKP-SC40-FELT13	1"	180
AKP-SC40-FELT14	1½"	90
AKP-SC40-FELT15	2"	50



## Female Threaded Elbow 90° Both Side Threaded (FTXFT)



Code	Size	Qty/Ctn
AKP-SC40-FELT21	1/2"	410
AKP-SC40-FELT22	3/4"	260
AKP-SC40-FELT23	1"	180
AKP-SC40-FELT24	1½"	90
AKP-SC40-FELT25	2"	50

## Union



Code	Size	Qty/Ctn
AKP-SC40-UN1	1/2"	96
AKP-SC40-UN2	3/4"	72
AKP-SC40-UN3	1"	60
AKP-SC40-UN4	11/4"	48
AKP-SC40-UN5	1½"	36
AKP-SC40-UN6	2"	24
AKP-SC40-UN7	2½"	18
AKP-SC40-UN8	3"	10
AKP-SC40-UN9	4"	4

## **Cross**



Code	Size	Qty/Ctn
AKP-SC40-MABT1	1/2"	200
AKP-SC40-MABT2	3/4"	180
AKP-SC40-MABT3	1"	72
AKP-SC40-MABT6	2"	35



## **Double Union Ball Valve**



Code	Size	Qty/Ctn
AKP-SC40-UBV1	1/2"	64
AKP-SC40-UBV2	3/4"	56
AKP-SC40-UBV3	1"	36
AKP-SC40-UBV4	11/4"	30
AKP-SC40-UBV5	1½"	16
AKP-SC40-UBV6	2"	8
AKP-SC40-UBV7	3"	4
AKP-SC40-UBV8	4"	2

## Single Union Ball Valve



Code	Size	Qty/Ctn
AKP-SC40-1SBV1	1/2"	120
AKP-SC40-1SBV2	3/4"	81
AKP-SC40-1SBV3	1"	30
AKP-SC40-1SBV4	11/4"	42
AKP-SC40-1SBV5	1½"	20
AKP-SC40-1SBV6	2"	20
AKP-SC40-1SBV7	3"	8
AKP-SC40-1SBV8	4"	2

## **Plain Ball Valve**



Code	Size	Qty/Ctn
AKP-SC80-SBV1	1/2"	200
AKP-SC80-SBV2	3/4"	180
AKP-SC80-SBV3	1"	110
AKP-SC80-SBV4	11/4"	95
AKP-SC80-SBV5	1½"	95
AKP-SC80-SBV6	2"	50
AKP-SC80-SBV7	3"	35
AKP-SC80-SBV8	4"	20



## **UPVC HIGH PRESSURE FITTINGS – SCHEDULE 80**

Solvent Welded Fittings as per PN 16 Metric Sizes (Millimeters) / MM

## Elbow 90° SXS



Code	Size (mm)	Qty/Ctn
AKP-SC80MM-25	20	1000
AKP-SC80MM-26	25	600
AKP-SC80MM-27	32	300
AKP-SC80MM-28	40	192
AKP-SC80MM-29	50	100
AKP-SC80MM-30	63	50
AKP-SC80MM-31	75	24
AKP-SC80MM-32	90	36
AKP-SC80MM-33	110	18
AKP-SC80MM-34	160	5
AKP-SC80MM-35	200	3
AKP-SC80MM-36	225	2
AKP-SC80MM-37	250	2
AKP-SC80MM-38	315	1

## Tee SXSXS



Code	Size (mm)	Qty/Ctn
AKP-SC80MMT-31	20	700
AKP-SC80MMT-32	25	400
AKP-SC80MMT-33	32	250
AKP-SC80MMT-34	40	128
AKP-SC80MMT-35	50	70
AKP-SC80MMT-36	63	34
AKP-SC80MMT-37	75	43
AKP-SC80MMT-38	90	25
AKP-SC80MMT-39	110	15
AKP-SC80MMT-40	160	4
AKP-SC80MMT-41	200	2
AKP-SC80MMT-42	225	2
AKP-SC80MMT-43	250	1
AKP-SC80MMT-44	315	-



Elbow 45° SXS



Code	Size (mm)	Qty/Ctn
AKP-SC80-ELM451	20	1250
AKP-SC80-ELM452	25	800
AKP-SC80-ELM453	32	400
AKP-SC80-ELM454	40	135
AKP-SC80-ELM455	50	120
AKP-SC80-ELM456	63	50
AKP-SC80-ELM457	75	30
AKP-SC80-ELM458	90	48
AKP-SC80-ELM459	110	24
AKP-SC80-ELZ4510	160	4
AKP-SC80-ELZ4511	200	2
AKP-SC80-ELZ4512	225	2
AKP-SC80-ELZ4513	250	2
AKP-SC80-ELZ4514	315	1

## Coupling



Code	Size (mm)	Qty/Ctn
AKP-SC80-CPM1	20	1750
AKP-SC80-CPM2	25	800
AKP-SC80-CPM3	32	400
AKP-SC80-CPM4	40	135
AKP-SC80-CPM5	50	120
AKP-SC80-CPM6	63	50
AKP-SC80-CPM7	75	30
AKP-SC80-CPM8	90	48
AKP-SC80-CPM9	110	24
AKP-SC80-CPM10	160	4
AKP-SC80-CPM11	200	2
AKP-SC80-CPM12	225	2
AKP-SC80-CPM13	250	2
AKP-SC80-CPM13	315	1



## **Reducing Tee**



Code	Size (mm)	Qty/Ctn
AKP-SC80RTM-1	25x20	400
AKP-SC80RTM-2	32x20	200
AKP-SC80RTM-3	32x25	125
AKP-SC80RTM-4	50x20	144
AKP-SC80RTM-5	50x25	144
AKP-SC80RTM-6	50x32	144
AKP-SC80RTM-7	50x40	130
AKP-SC80RTM-8	63x20	90
AKP-SC80RTM-9	63x25	90
AKP-SC80RTM-10	63x32	90
AKP-SC80RTM-11	63x50	85
AKP-SC80RTM-12	75x32	70
AKP-SC80RTM-13	75x50	65
AKP-SC80RTM-14	75x63	65
AKP-SC80RTM-15	90x50	44
AKP-SC80RTM-16	90x63	44
AKP-SC80RTM-17	90x75	44
AKP-SC80RTM-18	110x50	32
AKP-SC80RTM-19	110x63	32
AKP-SC80RTM-20	110x75	32
AKP-SC80RTM-21	110x90	27
AKP-SC80RTM-22	160x90	10
AKP-SC80RTM-23	160x110	5

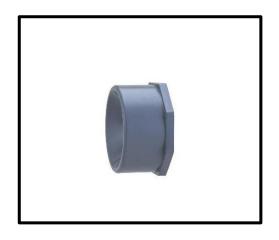
## **Double Union Ball Valve (MM)**



Code	Size (mm)	Qty/Ctn
AKP-SC80-DVM1	20	64
AKP-SC80-DVM2	25	56
AKP-SC80-DVM3	32	36
AKP-SC80-DVM4	40	30
AKP-SC80-DVM5	50	16
AKP-SC80-DVM6	63	8
AKP-SC80-DVM7	75	4
AKP-SC80-DVM8	90	2
AKP-SC80-DVM9	110	-



# Reducing Bush SXS



Code	Size (mm)	Qty/Ctn
AKP-SC80-RBM1	25x20	3500
AKP-SC80-RBM2	32x20	2000
AKP-SC80-RBM3	32x25	2000
AKP-SC80-RBM4	50x20	608
AKP-SC80-RBM5	50x25	608
AKP-SC80-RBM6	50x32	580
AKP-SC80-RBM7	50x40	580
AKP-SC80-RBM8	63x20	500
AKP-SC80-RBM9	63x25	500
AKP-SC80-RBM10	63x32	500
AKP-SC80-RBM11	63x50	460
AKP-SC80-RBM12	75x32	160
AKP-SC80-RBM13	75x50	160
AKP-SC80-RBM14	75x63	160
AKP-SC80-RBM15	90x50	112
AKP-SC80-RBM16	90x63	112
AKP-SC80-RBM17	90x75	112
AKP-SC80-RBM18	110x50	54
AKP-SC80-RBM19	110x63	54
AKP-SC80-RBM20	110x75	54
AKP-SC80-RBM21	110x90	54
AKP-SC80-RBM22	160x90	32

## **End Cap /Socket Cap**



Code	Size	Qty/Ctn
AKP-SC80ENDCM1	20	2800
AKP-SC80ENDCM2	25	1500
AKP-SC80ENDCM3	32	900
AKP-SC80ENDCM4	40	500
AKP-SC80ENDCM5	50	330
AKP-SC80ENDCM6	63	175
AKP-SC80ENDCM7	75	106
AKP-SC80ENDCM8	90	60
AKP-SC80ENDCM9	110	27
AKP-SC80ENDM10	160	18
AKP-SC80-ENDM11	200	8



## **One Piece Flange**



Code	Size	Qty/Ctn
AKP-SC80-FLM1	50	190
AKP-SC80-FLM2	63	105
AKP-SC80- FLM3	75	80
AKP-SC80- FLM4	90	60
AKP-SC80- FLM5	110	40
AKP-SC80- FLM6	160	14
AKP-SC80- FLM7	200	6
AKP-SC80- FLM8	225	6
AKP-SC80- FLM9	250	3
AKP-SC80- FLM10	315	2

## **Male Adapter (Threaded) MM to Inches**



Code	Size (mm	Qty/Ctn
	to Inches)	
AKP-SC80-MAMM1	20x½"	1700
AKP-SC80-MAMM2	25x¾"	800
AKP-SC80-MAMM3	32x1"	500
AKP-SC80-MAMM4	40x1¼"	225
AKP-SC80-MAMM5	50x1½"	216
AKP-SC80-MAMM6	63x2"	105
AKP-SC80-MAMM8	75x2½"	45
AKP-SC80-MAMM9	90x3"	40
AKP-SC80-MAMM10	110x4"	36
AKP-SC80-MAMM11	160x6"	-



## Female Adapter (Threaded) MM to Inches



Code	Size	Qty/Ctn
AKP-SC80-FATM1	20x½"	1500
AKP-SC80-FATM2	25x³⁄₄"	500
AKP-SC80-FATM3	32x1"	550
AKP-SC80-FATM5	50x1½"	360
AKP-SC80-FATM6	63x2"	162
AKP-SC80-FATM8	75x2½"	105
AKP-SC80-FATM9	90x3"	35
AKP-SC80-FATM9	110x4"	5

## Union



Code	Size	Qty/Ctn
AKP-SC80-UNM1	20	-
AKP-SC80-UNM2	25	-
AKP-SC80-UNM3	32	-
AKP-SC80-UNM4	40	-
AKP-SC80-UNM5	50	-
AKP-SC80-UNM6	63	-
AKP-SC80-UNM7	75	-
AKP-SC80-UNM8	90	-
AKP-SC80-UNM9	110	-



## **RUBBER RING FITTINGS - PUSH FIT TYPE**

**BSEN 1452, PN 10** 

## **ELBOW 90°**



Code	Size (mm)	Qty/Ctn
AKP-SC80MPF9	110	8
AKP-SC80MPF10	160	4
AKP-SC80MPF11	200	2
AKP-SC80MPF12	225	2
AKP-SC80MPF13	250	1
AKP-SC80MPF14	315	1

## Tee



Code	Size (mm)	Qty/Ctn
AKP-SC80MTP-39	110	6
AKP-SC80MTP-40	160	3
AKP-SC80MTP-41	200	2
AKP-SC80MTP-42	225	1
AKP-SC80MTP-43	250	1
AKP-SC80MTP-44	315	1



## Elbow 45°



Code	Size (mm)	Qty/Ctn
AKP-SC80-ELMP459	110	8
AKP-SC80-ELMP4510	160	4
AKP-SC80-ELMP4511	200	2
AKP-SC80-ELMP4512	225	2
AKP-SC80-ELMP4513	250	1
AKP-SC80-ELMP4514	315	1

## Coupler (Socket)



Code	Size (mm)	Qty/Ctn
AKP-SC80-CPM8	90	28
AKP-SC80-CPM9	110	6
AKP-SC80-CPM10	160	4
AKP-SC80-CPM11	200	3
AKP-SC80-CPM12	225	2
AKP-SC80-CPM13	250	2
AKP-SC80-CPM13	315	1

## **Reducing Coupling**



Code	Size	Qty/Ctn
AKP-SC80-CP1	160x110	6
AKP-SC80-CP2	200x160	3
AKP-SC80-CP3	225x160	2
AKP-SC80-CP4	225x200	2
AKP-SC80-CP5	250x200	2
AKP-SC80-CP6	250x225	2
AKP-SC80-CP7	315x250	1
AKP-SC80-CP8	355x315	1



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Drainage Soil/Waste Pipe Water Supply Pipe & Fittings



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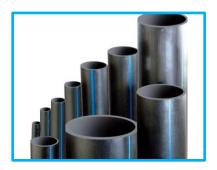
PPR Pipes & Fittings



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