

The Leader
The Leader



An ISO : 9001 Company

SUDHAKAR
uPVC PIPES & FITTINGS



MEET - THE PIONEER IN PVC PIPES

SUDHAKAR Group of Industries located at Suryapet, Andhra Pradesh, INDIA, plays a significant role in PVC Products sector. **SUDHAKAR** Group established in the year 1971 exclusively to manufacture of Electrical Conduits. Over the years emerged as a potential leader in Rigid PVC Pipes and also made its foray in to Rigid PVC Fittings. Now the group manufacture PVC piping systems for electrical, irrigation, plumbing and other applications. The group manufacture CPVC Piping systems, HDPE Piping systems and Micro Irrigation systems. Founded by a visionary entrepreneur, Sri **Meela Satyanarayana**, this group has plays a pioneer role in the field of PVC Products. By being an innovative and quality conscious, **SUDHAKAR** Group distinguished itself from other organizations as a company having an inbuilt culture of High Customer care. **The Result** : This company has now progressed from strength to strength and has bagged many prestigious awards, millions of happy and satisfied customers and attained leadership in this field of PVC Pipes & Fittings. Nationwide dealership network and service back up facilities, dedicated sales force and timely delivery makes **SUDHAKAR** more closer to customers.



EXPERIENCE THE WORLD CLASS TECHNOLOGY

SUDHAKAR uses hi-tech machinery, efficient manpower to produce pipes and fittings that confirming to Indian and International standards. **SUDHAKAR**'s modern workshop adopts State of the Art technology and perfect quality measures to produce accurate moulds and dies and precision components.



Shri. Meela Satyanarayana

-Founder

Shri **Meela Satyanarayana**, the founder of the group is a freedom fighter, teacher turned businessman and industrialist. His contribution to the plastics industry especially in the Southern India is acclaimed by many organizations. President of Andhra Pradesh Plastic Manufacturers Association in 1984, Joint Secretary of All India PVC Pipes Manufacturers Association , New Delhi in 1985. He is the first entrepreneur to start a PVC pipe manufacturing unit in Andhra Pradesh. Municipal Chairmen of Suryapet for the Period 1989-92, Andhra Pradesh. Chairmen and Founder of The Sudha Co-Operative Urban Bank Ltd. Suryapet , Andhra Pradesh. He is recipient of many awards such as

- ◆ "Bharata Ratna Mokshagundam Vishveshwaraiah Memorial Small Scale Entrepreneur Award"
- ◆ "Vijayaratna", "HMA Small Scale Entrepreneur Award"
- ◆ Best Industrialist Award . Govt of Andhra Pradesh , India

Shri Meela Satyanarayana is a self made Industrialist and is a good manager. His valuable suggestions and advices to the boards of all companies will always enhance the managerial capabilities of the Boards.



Rigid P.V.C. Pipes

uPVC Pipes for Solvent Cement Jointing

SUDHAKAR uPVC PIPES are manufactured in accordance with Bureau of Indian Standards Specifications IS:4985:2000 and other International Standards DIN, BIN, ASTM. **SUDHAKAR** manufacture Rigid PVC Pipes in the range of 16mm to 400mm diameters of Solvent cement jointing in different working pressures (2.5.4.6. 8, 10 & 12.5Kgf/cm²)

uPVC Plumbing Pipes

uPVC plain end pipe for plumbing in buildings from 20mm to 50mm confirming to IS:4985/2000.



IS:4985





DIMENSIONS OF “ SUDHAKAR ” RIGID PVC PIPES (IS 4985 : 2000 Extract)

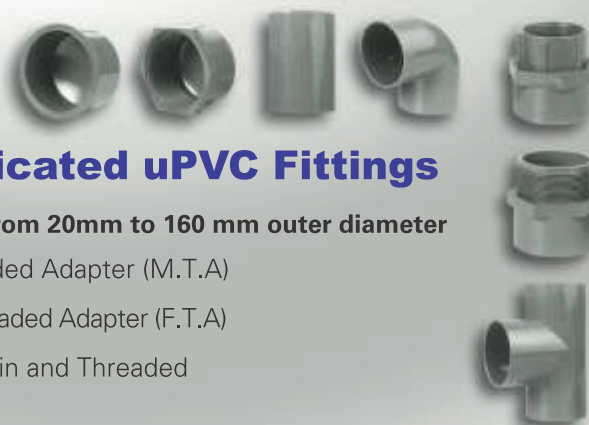
Nominal Outside Diameter	Tolerance on Outside Diameter	Class 1 2.5kgf/cm ²		Class 2 4kgf/cm ²		Class 3 6kgf/cm ²		Class 4 8kgf/cm ²		Class 5 10kgf/cm ²		Class 6 12.5kgf/cm ²		Plumbing Pipes	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20	+0.3	-	-	-	-	-	-	-	-	1.1	1.5	1.4	1.8	2.8	3.3
25	+0.3	-	-	-	-	-	-	1.2	1.6	1.4	1.8	1.7	2.1	2.9	3.4
32	+0.3	-	-	-	-	-	-	1.5	1.9	1.8	2.2	2.2	2.7	3.4	3.9
40	+0.3	-	-	-	-	1.4	1.8	1.8	2.2	2.2	2.7	2.8	3.3	3.6	4.2
50	+0.3	-	-	-	-	1.7	2.1	2.3	2.8	2.8	3.3	3.4	4.0	3.7	4.3
63	+0.3	-	-	1.5	1.9	2.2	2.7	2.8	3.3	3.5	4.1	4.3	5.0		
75	+0.3	-	-	1.8	2.2	2.6	3.1	3.4	4.0	4.2	4.9	5.1	5.9		
90	+0.3	1.3	1.7	2.1	2.6	3.1	3.7	4.0	4.6	5.0	5.7	6.1	7.1		
110	+0.4	1.6	2.0	2.5	3.0	3.7	4.3	4.9	5.6	6.1	7.1	7.5	8.7		
125	+0.4	1.8	2.2	2.9	3.4	4.3	5.0	5.6	6.4	6.9	8.0	8.5	9.8		
140	+0.5	2.0	2.4	3.2	3.8	4.8	5.5	6.3	7.3	7.7	8.9	9.5	11.0		
160	+0.5	2.3	2.8	3.7	4.3	5.4	6.2	7.2	8.3	8.8	10.2	10.9	12.6		
180	+0.6	2.6	3.1	4.2	4.9	6.1	7.1	8.0	9.2	9.9	11.4	12.2	14.1		
200	+0.6	2.9	3.4	4.6	5.3	6.8	7.9	8.9	10.3	11.0	12.7	13.6	15.7		
225	+0.7	3.3	3.9	5.2	6.0	7.6	8.8	10.0	11.5	12.4	14.3	15.3	17.6		
250	+0.8	3.6	4.2	5.7	6.5	8.5	9.8	11.2	12.9	13.8	15.9	17.0	19.6		
280	+0.9	4.1	4.8	6.4	7.4	9.5	11.0	12.5	14.4	15.4	17.8	19.0	21.9		
315	+1.0	4.6	5.3	7.2	8.3	10.7	12.4	14.0	16.1	17.3	19.9	21.4	24.7		
355	+1.1	5.1	5.9	8.1	9.4	12.0	13.8	15.8	18.2	19.6	22.6	24.1	27.8		
400	+1.2	5.8	6.7	9.1	10.5	13.5	15.6	17.8	20.5	22.0	25.3	27.2	31.3		

CONSUMPTION OF SOLVENT CEMENT :

O.D of pipe in M.M.	20	25	32	40	50	63	75	90	110	140	160	180	200	225	250	280	315	355	400
Approx. no of joints which can be made per liter of solvent cement	324	270	225	180	130	125	103	79	54	36	27	25	15	12	9	7	5	3	2



Moulded uPVC Fittings



Moulded uPVC Fittings & Fabricated uPVC Fittings

SUDHAKAR manufacture following moulded fittings from 20mm to 160 mm outer diameter

- ▲ Coupler
- ▲ Elbow
- ▲ Male Threaded Adapter (M.T.A)
- ▲ Equal Tee
- ▲ Reducer
- ▲ Female Threaded Adapter (F.T.A)
- ▲ Service Saddle
- ▲ End Cap Plain and Threaded



Fabricated uPVC Fittings

SUDHAKAR manufacture uPVC fabricated fittings confirming to IS : 10124 / 1988 from 20mm to 400mm

- **BENDS** - from 20mm to 400mm outer diameter in vertical angles with different working pressures
- **COUPLERS** - from 20mm to 400mm outer diameter with different working pressures



uPVC PIPES for Elastomeric Rubber Ring Jointing

SUDHAKAR ELASTOMERIC RUBBER RING JOINTING PIPES to overcome problems commonly experienced in solvent cement jointing of above 140mm dia uPVC Pipes. SUDHAKAR manufacture uPVC PIPES for Elastomeric Rubber Ring Jointing in accordance with Beareu of Indian standards and other International Standards DIN, BIN, from 63mm to 315mm of 4, 6, 8, 10 & 12.5Kgf/cm² pressure classes.

Features & Advantages

Sudhakar Rigid P.V.C. Pipes are

- ▲ Non-corrosive and have glossy smooth internal and external surface.
- ▲ Dielectro-lightic action, do not support the bacterial growth or encrustation.
- ▲ Non-toxic, Economical than other pipes like stainless steel, DI, GI pipes etc.
- ▲ High quality and have greater strength with uniform wall thickness.
- ▲ Light in weight and easy to handle and install.



Applications

Can be used in Water Supply System in Potable water main & sub mains distribution and service lines.

- ▲ Potable water supplies and Drinking water supplies.
- ▲ For Lift Irrigations, Bore Wells etc by both the Government and Farmers.
- ▲ These pipes are widely used for Irrigation Systems.
- ▲ Plumbing and Drainage Systems in the Dwelling Houses.
- ▲ Electrical Industry, Construction Industry & Chemical Industry.
- ▲ Sewerage and Drainage.
- ▲ Sewage pipe systems, mainly for aggressive sewage and in drinking water protection areas.
- ▲ For Cable Ducting in Information and Telecom Sector.
- ▲ Discharge pipes for hospitals and residential buildings.
- ▲ For slurry disposal lines.
- ▲ For dematerialized water lines.

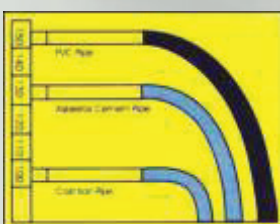
Sudhakar Rigid PVC Pipes are normally manufactured in uniform length of 6 Meters with self socket one side. Varied lengths can be supplied as per customer requirements.

Properties:

Specific Gravity	:	1.41-1.46g/cm ³
Coefficient of Linear Expansion	:	5 - 6 X 1 mm/m°C
Compressive Strength	:	600 - 650Kglcm ²
Impact Strength	:	Complies with IS14985 / 2000
Modulus of Elasticity	:	3 - 3.8 X 10 ⁴ Kg/cm ²
Vicat Softening Point	:	80°C
Electrical Resistance	:	1 014 Ohm,cm
Tensile strength	:	500 - 550 kg/ cm ²

Williams and Hazen Constant for Flow for pipes of same diameter

How to use the Nomogram for function loss in PVC Rigid Water Pipes



Where i = loss of head in Mtrs. per thousand meter

Where v = Velocity in Mtrs. / sec.

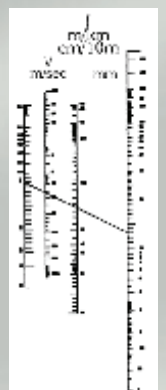
Example : For a required flow of 13m³ / Hr what will be the frictional head loss for 70mm. I.D., Pipe?

Using a over, connect - values of flow rate and pipe. I.D. and read the value of scale i . The frictional head loss is 14.0 Mtrs. per thousand meter. On scale 'v', the velocity obtained is 0.92 Mtrs. / sec., which is well within the permissible limit.

D = Inside diameter of pipe in mm, Q = Rate of flow in cubic meters per hour

The values in the graph are based upon the Williams & Hazen formula

$$\text{Formula } i = 9.3 \times 10.7 \frac{Q^{1.76}}{D^{4.76}}$$





uPVC Blue Threaded Pipes

SUDHAKAR manufacture uPVC-Blue Threaded pipes as per ASTM D-1785 from 1/2 inch to 8 inch Nominal Bore.

DIMENSIONS AND WATER PRESSURE RATING AT 23°C FOR "SUDHAKAR" PIPES AS PER ASTM D-1785. (with thread joints)

1/2" to 8" Available

Nominal Bore	Outside Diameter	Schedule 40			Schedule 80		
		Wall Thickness	Working Pressure		Wall Thickness	Working Pressure	
			(mm)	MPa		psi	(mm)
(Inch)	(mm)	(mm)	MPa	psi	(mm)	MPa	psi
1/2"	21.34 ± 0.10	2.77	2.07	300	3.73	2.90	420
3/4"	26.67 ± 0.10	2.87	1.65	240	3.91	2.34	340
1"	33.40 ± 0.13	3.38	1.52	220	4.55	2.21	320
1 1/4"	42.16 ± 0.13	3.56	1.24	180	4.85	1.79	260
1 1/2"	48.26 ± 0.15	3.68	1.17	170	5.08	1.65	240
2"	60.32 ± 0.15	3.91	0.97	140	5.54	1.38	200
2 1/2"	73.02 ± 0.18	5.16	1.03	150	7.01	1.45	210
3"	88.90 ± 0.20	5.49	0.90	130	7.62	1.31	190
4"	101.60 ± 0.20	6.02	0.76	110	8.56	1.10	160
5"	141.30 ± 0.23	6.55	0.69	100	9.52	0.97	140
6"	168.28 ± 0.28	7.11	0.62	90	10.97	0.97	140
8"	219.08 ± 0.38	8.18	0.55	80	12.7	0.83	120

UPVC White Colour ASTM Pipes

SUDHAKAR manufacture U.V. Stabilized UPVC White colour pipes as per ASTM D-1785 specification for Plumbing application from 1/2 inch to 4 inch Nominal bore with plain ends for Solvent Cement Jointing.

These pipes are well suitable for in building plumbing applications.

DIMENSIONS AND WATER PRESSURE RATING AT 23C FOR "SUDHAKAR" UPVC PIPES AS PER ASTM D-1785

Nominal Bore	Outside Diameter	Schedule 40			Schedule 80		
		Wall Thickness	Working Pressure		Wall Thickness	Working Pressure	
			(mm)	MPa		psi	(mm)
(Inch)	(mm)	(mm)	MPa	psi	(mm)	MPa	psi
1/2"	21.34 ± 0.10	2.77	2.07	300	3.73	2.90	420
3/4"	26.67 ± 0.10	2.87	1.65	240	3.91	2.34	340
1"	33.40 ± 0.13	3.38	1.52	220	4.55	2.21	320
1 1/4"	42.16 ± 0.13	3.56	1.24	180	4.85	1.79	260
1 1/2"	48.26 ± 0.15	3.68	1.17	170	5.08	1.65	240
2"	60.32 ± 0.15	3.91	0.97	140	5.54	1.38	200
2 1/2"	73.02 ± 0.18	5.16	1.03	150	7.01	1.45	210
3"	88.90 ± 0.20	5.49	0.90	130	7.62	1.31	190
4"	101.60 ± 0.20	6.02	0.76	110	8.56	1.10	160

Note : Working pressure rating apply to pipes in unthread condition.

MPa = Mega Pascal; 1 MPa = 10 Kg/cm²; 1 Kg/cm² = 14.5 psi

Sudhakar uPVC Blue Threaded Pipes and uPVC White Colour Pipes are normally manufactured in standard lengths of 3mt & 6mt .Varied lengths can be manufactured according to customer requirements.



uPVC Casing Pipes for Bore/Tube well



We manufacture uPVC Casing pipes for Bore / Tube wells

- **CM Type** -from 40 mm to 250 mm nominal diameters
- **CS Type** - from 150 mm to 250 mm nominal diameters.

CS(Shallow well) pipes suitable for wells with depth up to 80m.

CM(Medium well) pipes suitable for wells with depth above 80m & up to 250m

Features & Advantages

- ▲ High quality and have greater strength with uniform wall thickness.
- ▲ High impact compressive strength.
- ▲ Light in weight and easy to handle and install.
- ▲ Smooth bore, hence excellent flow properties.





INSTALLATION PROCEDURES



Solvent Cement Jointing

1) Cut the spigot end of the pipe square



2) All burrs from the internal and external surface should be removed



3) The spigot should be marked with a pencil line at a distance equivalent to the socket depth. Clean the surface with the marked area.



4) Apply uniform coat of solvent cement on the external surface of the pipe and a lighter coat on the internal surface of the fittings



5) Insert the pipe end into the socket of the fitting and push it in upto the mark.



6) Remove the excess solvent cement and hold the joint firmly in position for 30 seconds to dry.



Rubber Ring Jointing

1) Cut pipe square



2) Chamfer the end of the pipe remove all burrs, dust and dirt.



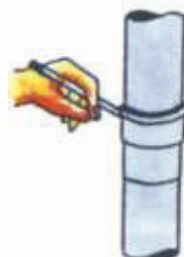
3) Apply Sudhakar Lubricant on the external surface of the Chamfered end of the pipe and on the rubber gasket.



4) Check that the rubber seal ring is in position in the housing.



5) Push the pipe fully into the socket and mark the pipe depth in the socket with a marker



6) Withdraw the pipe until the mark is 12mm away from the socket before fixing. The gape between the pipe end and the socket register is very essential for thermal expansion / contraction



uPVC Casing Pipes for Bore/Tube well



Properties

- ▲ Specific Gravity : 1.40 g/cm³ - 1.45 g/cm³
- ▲ Vicat softening temperature : 76°C.
- ▲ Tensile strength : 50 ± 5 N/mm²
- ▲ Impact strength : Complies with IS : 12818
- ▲ Yield strength : 55 N/cm²

Table 3 Dimensions of 'CM' Casing Pipes

All dimensions in millimeters

Nominal Diameter DN	Mean Outer Diameter of pipe		Wall Thickness	
	Min	Max	Min	Max
40	47.9	48.2	3.5	4.0
50	60.0	60.2	4.0	4.6
80	87.9	88.3	4.0	4.6
100	113.0	113.3	5.0	5.7
125	140.0	140.4	6.5	7.3
150	165.0	165.4	7.5	8.5
175	200.0	200.5	8.8	9.8
200	225.0	225.5	10.0	11.2
250	280.0	280.5	12.5	14.0

Table 4 Dimensions of 'CS' Casing Pipes

All dimensions in millimeters

Nominal Diameter DN	Mean Outer Diameter of pipe		Wall Thickness	
	Min	Max	Min	Max
150	165.0	165.4	5.7	6.5
175	200.0	200.5	7.0	7.8
200	225.0	225.5	7.6	8.8
250	280.0	280.5	9.6	11.0

QUALITY CONTROL

Sudhakar Polymers Ltd. is having well equipped quality testing equipments in their labs as per the ISI standards and DOT standards for testing of all Rigid PVC Pipes and Fittings. The high quality performance is attained with experienced and qualified staff and skilled workers.

Each batch of SUDHAKAR Rigid PVC Pipes & Fittings are tested as per Bureau of Indian Standards relevant scheme of testing and inspection.

INSTALLATION GUIDELINES

- ❖ Care should be taken to ensure that the uPVC Casings & Ribbed Screens are lowered properly in a tube-well to ensure proper gravel packing.
- ❖ The gravel packing must be carefully selected depending upon the soil Conditions the size of slot for the screens depends on this.
- ❖ Care should be taken to ensure that the gravel packing sits all around the pipe and there should not be any bridging.
- ❖ Care should be taken to ensure no excessive uneven pressure is generated at the time of development and surging

METHOD OF JOINTING

- ❖ "SUDHAKAR" uPVC Casing and Ribbed and Screen pipes are provided with male threads at one end and female threads at the other (trapezoidal threads).
- ❖ These joints have a good tensile strength and can take the suspended weight of the assembly for greater depths as compared to conventional metric pipe threads.
- ❖ It must also be noted that the buoyancy when the assembly is submerged in the water greatly reduces load on the threaded joints.





Manufacturing Units:

Sudhakar PVC Products Pvt. Ltd.

Balaram Thanda, Near Industrial Estate, Suryapet, Telangana - 508 213.

Plant Locations: Suryapet | Ballari | Brahmapur | Muppireddypally | Yeguvarajupalem | Ujjain

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