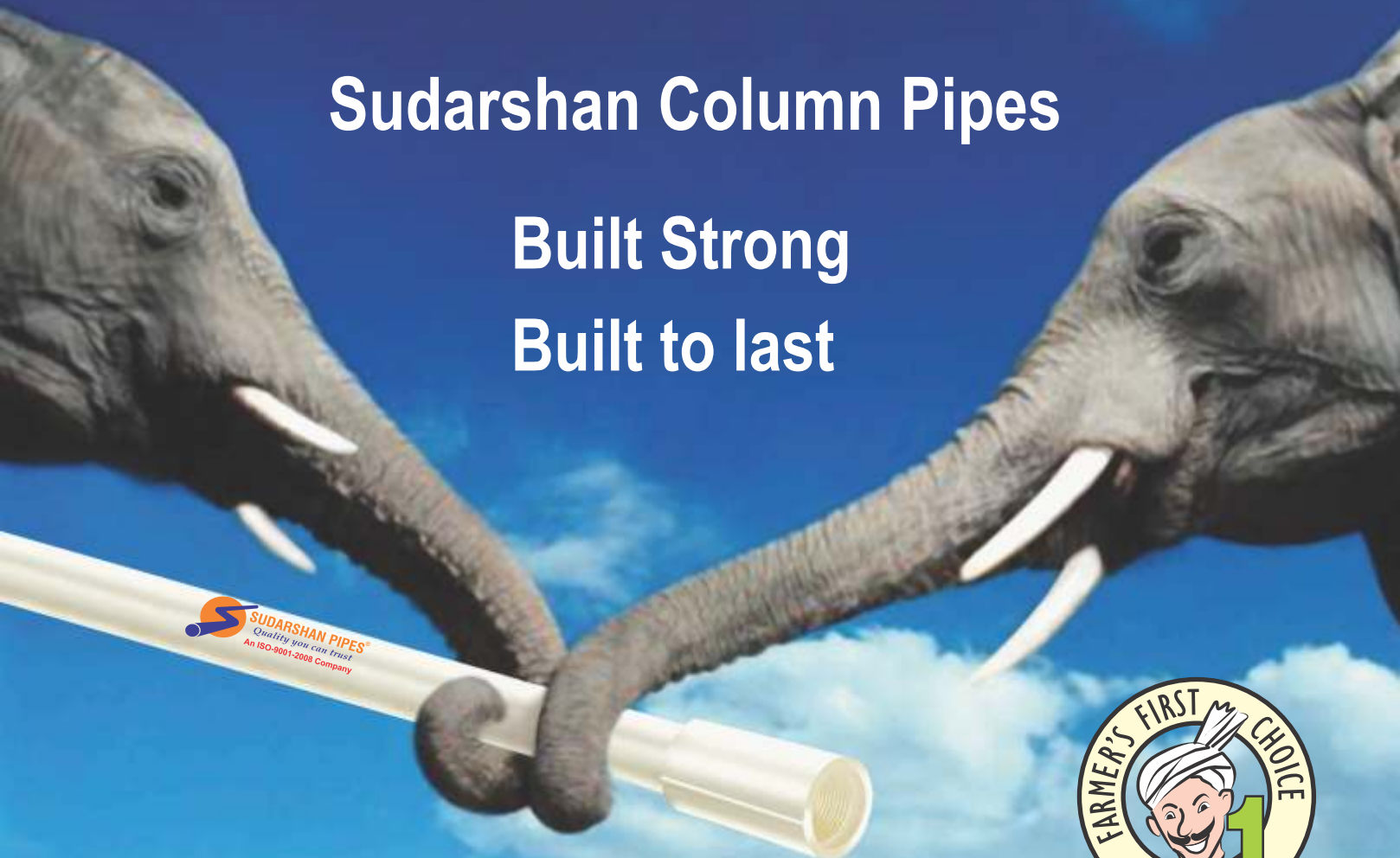




Sudarshan Column Pipes

**Built Strong
Built to last**



COMPANY PROFILE

Sudarshan Extrusions Pvt. Ltd. was incorporated in the year 2003 to set up a state of the art PVC Pipe Plant at Bommasandra Industrial Area, Bangalore, India. The company has been promoted by Mr. Arvind Salampuria, F.C.A., who is having more than twenty five years of experience in the PVC Industry. Company has a team of qualified engineers to produce quality product. Sudarshan Extrusions Pvt. Ltd. is an ISO-9001-2008 Certified Company, operating under strict quality management systems.

SEPL is a pioneer in manufacturing of Sudarshan Column Pipes[®], used with Submersible Borehole Pumps. Sudarshan uPVC Column Pipe has edge over GI/SS/HDPE pipes due to better features such as corrosion resistance, smooth inner walls, high impact and high tensile strength. SEPL is also manufacturing Blue Casing Pipes and uPVC Plumbing Pipes.

Sudarshan Column pipe has been successfully installed in more than one million boreholes in domestic and overseas market. The company has more than 300 distributors & 4000 dealers' network. SEPL is currently exporting to Middle East, Africa, Asia and looking to expand its market in Europe and America.

SEPL stands for its motto-“**Quality You Can Trust**”.



Managing Director Mr. Arvind Salampuria



Bommasandra Industrial Area, Bangalore



Dealers Conference at Bangalore



ABOUT SUDARSHAN uPVC COLUMN / RISER / BOREHOLE PIPE

Sudarshan uPVC Column pipe has been specially designed for Submersible Borehole Pumps to deliver underground water. More than a million bores upto 1200 feet depth have been successfully installed using Sudarshan uPVC Column Pipe. It is available in 1" to 5" Dia in different classes suitable for different depths and pump-delivery pressure. Sudarshan uPVC Column Pipe comes along with standard accessories such as top and bottom adopter, pump guard, flanges etc.

Sudarshan Column pipes are manufactured using state-of-the-art double stage bi-axial technology and threaded using CNC machines to ensure high precision. Stringent on-line quality checks, rigorous testing in our laboratory and continuous R&D activities for over a decade has made Sudarshan Column Pipe the Farmers First Choice.

Sudarshan uPVC Column Pipe unique features are that it can sustain high hydrostatic pressure, which is maximum at the bottom most pipe connected to the pump, and can withstand high tensile load of pump and entire column filled with water, which is maximum at the top most pipe.

SEPL has developed Heavy and Super Heavy column pipes suitable for deep bores and high pressure pumps. Sudarshan Heavy and Super Heavy pipes come with long coupler and wider square threads to take higher working pressure and load.



Online Quality Check



Pull-Out Test



Sudarshan uPVC Column pipe

FEATURES:



Square threads - Made on **CNC Machines** for high precision. It enables tension free grip & easy fitment. These are high friction threads on load which do not open even on constant forward and reverse torque of the pump.

Rubber Gasket & Profile 'O' Ring - Permanent side is fitted with rubber gasket & temporary side with profile 'O' Ring to absorb pump vibration & to make it leak proof.

'O' Ring Locking System - Provides permanent lock between coupler and pipe as well as absorbs tension from torque generated by pump, providing incredible grip.

Thick & Thin - Ends of the pipe are thicker than the barrel of the pipe so that even after threading there is maximum strength in the pipe.

Biaxial Orientation Technology - Provides higher tensile strength and impact resistance

COMPARATIVE PERFORMANCE OF uPVC SUBMERSIBLE BOREHOLE PIPES.

Criteria	SEPL uPVC Borehole Pipe	G.I. / M.S Pipe	HDPE Pipe
Life Span	Long Life- Designed for 30 years and more Pipes & its square threads do not deteriorate due to corrosion / rusting / reuse and are designed to have high load capacity	5 to 10 years Pipes and its threads get damaged due to rusting / corrosion and reuse.	Very Limited life Low strength, gets damaged under high pressure in span of 2 to 3 years
Operational cost and performance	Smooth Inner Surface leads to low frictional loss, thereby providing higher output & Low energy and fuel consumption	Rough inner surface leads to higher frictional loss; and hence consumes more energy & gives lower output	Relatively Rough inner surface consumes more energy and gives lower water output
Maintenance	Low Maintenance	Very high maintenance; Rusting of threads needs periodic removal for rethreading of pipes and cleaning rust deposits	Relatively High Maintenance
Leakage	Rubber 'O' Ring Locking System and Profile EPDM rubber seals at both ends of the coupler joint makes its completely leak proof.	Always Leaks Pipe joints are not pressure tight, rusting of joint threads	Pressure can cause leakage in pipes
Locking System	One side of pipe and coupler are joined permanently through 'O' ring locking system	No Locking System	No Locking System
Installation	Light weight 3 metres length pipes are easy to install & remove	Pipes are very heavy and difficult to handle, requiring great efforts in installation & removal	Easy to install, but no way to increase length of pipe, if required.

ADVANTAGES OF SUDARSHAN uPVC COLUMN/BOREHOLE PIPE

Life span of 30 years and more	No bacterial growth
Lower investment	30% Lower operational cost
No corrosion or rusting	Suitable for Food Grade
No maintenance required	Easy to install and uninstall

PHYSICAL & MECHANICAL PROPERTIES

Property	Unit	Standard
Specific Gravity	1.4gms/cm ³	-
Vicat Softening Temperature	87.3 C	as per ASTM D 1525

TECHNICAL SPECIFICATIONS OF SUDARSHAN COLUMN / RISER PIPE FOR SUBMERSIBLE PUMP

SI	Size & Type OD - Outside Dia ND - Nominal Dia	Ultimate Breaking Load (Kgf)	Suitable Load (Kgf)	Safe allowable hydrostatic Pressure (Kgf/Cm2)	Maximum Installation depth (Meters)
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OD: 33mm (1") ND:25 mm

1	Deluxe	1200	800	21	210
2	Super Deluxe	1800	1200	30	300
3	Gold	2500	1700	35	350

OD: 42mm (1.25") ND:32 mm

4	Deluxe	1800	1100	21	210
5	Super Deluxe	2500	1500	27	270
6	Gold	3000	1800	35	350
7	Heavy	3000	1875	35	350
8	Super Heavy	3500	2400	40	400

OD: 48mm (1 1/2") ND:40 mm

9	Deluxe	2500	1500	21	210
10	Super Deluxe	3000	1800	27	270
11	Gold	4000	2400	35	350
12	Heavy	4000	2500	35	350
13	Super Heavy	4800	3000	40	400
14	Ultra Heavy	5000	3500	45	450

OD: 60mm (2") ND:50 mm

15	Deluxe	3000	2100	13	130
16	Deluxe Plus	3400	2400	17	170
17	Super Deluxe	3850	2700	21	210
18	Gold	5000	3500	27	270
19	Heavy	5200	3600	27	270
20	Super Heavy	5700	4000	35	350

OD: 75mm (2 1/2") ND:65 mm

21	Super Deluxe	4700	2800	17	170
22	Gold	7000	4200	26	260
23	Heavy	7200	4320	27	270
24	Super Heavy	9000	5400	35	350

OD: 88mm (3") ND:80 mm

25	Super Deluxe	7000	4200	17	170
26	Gold	9400	5650	26	260
27	Heavy	9600	5760	27	270
28	Super Heavy	12600	7560	35	350

OD: 113mm (4") ND:100 mm

29	Super Deluxe	9900	5940	17	170
30	Gold	13200	7920	21	210
31	Heavy	16000	9600	27	270
32	Super Heavy	20500	12300	35	350



NOTE:

- 1) Heavy & Super Heavy are with Long coupler.
- 2) OD: 140mm (5") ND: 125mm will be manufactured on request

SELECTION OF PIPES

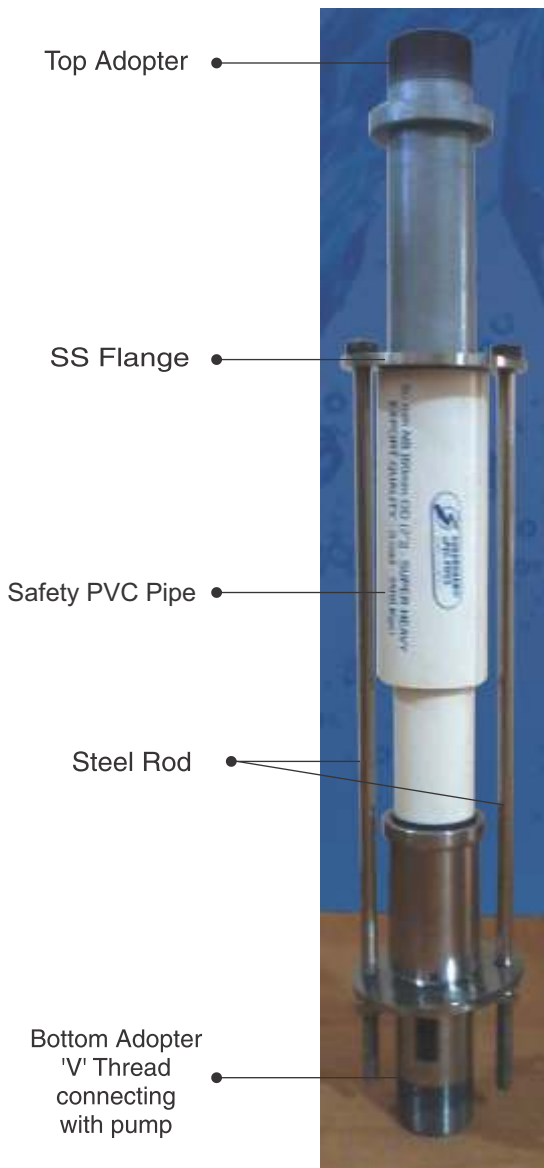
The pipe should be selected such that the pump delivery pressure does not exceed the hydrostatic allowable pressure of the pipe.

Example:

Pump Delivery pressure:	24kg/cm ²
Pipe outlet Size & Pipe Size:	2" (50mm) Nominal Diameter
2" Super Delux recommended permissible pressure:	21kg/cm ²
2" Gold/Heavy recommended permissible pressure:	27kg/cm ²

In such case, 2" Gold/Heavy pipe should be selected.

ACCESSORIES



Pump Guard with Top and Bottom Adopter

Top and Bottom Adopter: For connection of Submersible Pump and submersible Column / Riser Pipe, one bottom and one top adopter is required as submersible pumps have 'V' Threads and Sudarshan column pipes are manufactured with square threads. Adopter's 'V' thread is connected with pump and its square thread is connected with pipe.

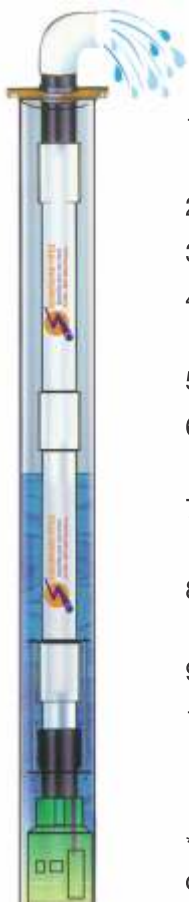
Adopters are available in stainless steel, mild steel and cast iron. We advise bottom adopter material should be stainless steel as it is to be inside water and top adopter may be Stainless Steel, mild steel or cast iron.

NOTE: Adopter's specification for Heavy and Super Heavy pipes is different from that for other class of pipes (Deluxe, Super Deluxe, Gold).



Pump Guard Set: A Pump Guard set consists of one safety PVC Pipe, two stainless steel rods and two S.S plates/ flanges, four nut bolts. Pump Guard is required in case of deep bore well for safety as it does not allow pump to fall into the bore. It is highly recommended for areas with excessive pump vibration due to sand pumping, sub standard pumps and other local soil conditions.

INSTALLATION



INSTALLATION PROCEDURE

1. First connect the male end of C.I/ M.S/ S.S bottom adaptor to submersible borewell pump using chain wrench.
2. Join the Sudarshan Pump Guard to the bottom Adaptor along with M.S/ S.S flange rod.
3. Now connect the first pipe to the female end of the pump guard.
4. Before connecting the pipes and pump guard, clean the threads with clean water and check for proper fitment of rubber sealing.
5. While fitting of pipe hold the coupler by hand / wrench.
6. Tighten the pipes by hand, until the rubber sealing in the pipe end completely enters into the coupling. However for better grip strap wrench can be used to hold/ tighten the pipes.
7. At the time of lowering the pump into borehole, the clamp must be fastened only to the portion marked just below the coupler.
8. Then all the other Sudarshan Column pipes can be connected the same way. Pipe wrench should not be used for support.
9. Once the top column pipe reaches the ground level, connect the top adaptor with male end connection.
10. Finally from the ground level regular plumbing accessories can be used to transfer water to required delivery point.

*Do not use oil on square threads of Sudarshan Column Pipes. Clean the threads with normal water and check the proper fitment of rubber sealing element

INSTALLATION CONDITIONS

Full casing of bore well is recommended for long life of bore and pump. It prevents the pump from getting stuck due to loose boulders, stones, soil and silt. It also reduces chances of accident due to protruding stones and boulders at the time of removing the pump and pipe.

REMOVAL CONDITIONS

At the time of removal of pumps from bores, it is advisable to ensure that there is no accumulation of boulders, stones and silt. During removal in case pump gets stuck due to such accumulation, proper flushing of the borehole should be done before applying the pulling load on the pipes.

PRECAUTIONS

Avoid Dry Run of Pump

Dry run of submersible pump generates hot air which can damage/ deform the first Column Pipe connected with the pump. To avoid this:

- Use timer switch to turn on or off the pump automatically as per the pre-set time, determined after assessing the bore yield.
- Use of 3 metres G.I. Pipe between pump and SEPL uPVC Column Pipe will help dissipate the heat, preventing any damage or deformation.

Prevention of Water Hammer

At the time of pump stoppage, water recedes/falls at tremendous speed from a height. Especially in deep bore wells of about 500 ft & above, this creates enormous pressure and load on the pump and bottom most pipe called as water hammering. For such deep bore wells, it is recommended to make a 3mm hole in the pump NRV to protect the pump and pipe from water hammering.

HANDLING & STORAGE OF PIPES

- Check for any visible damage to pipes during transit and inform immediately.
- Avoid contact of pipe with any sharp objects.
- Do not throw or drop the pipes from truck to the ground.
- Store it in covered areas to avoid exposure to sunlight & UV rays
- Stack pipes on even grounds with stack height not more than 7feet
- Place alternate layers of pipes/bundles perpendicularly, with each layer forming a square.
- Stack lighter pipes above the heavier ones, if pipes are of same diameter
- Keep the stacking surface dry.

COLOUR CODE

• Eco - Blue	• Gold - Green
• Deluxe - Violet	• Heavy - Blue
• Deluxe Plus - Black	• Super Heavy - Black
• Super Delux - Red	• Ultra Heavy - Violet

CONTAINER DETAILS

Length of each bundle is 3.3m. A maximum of 1 stack can be laid out in a 20 feet container and a maximum of 3 stacks can be laid out in a 40 feet container. Rest of the floor space is used for pump guards, adaptors and samples.

NO. OF PIPES PACKED PER BUNDLE

Nominal Diameter		Outer Diameter (in mm)	No. of Pipes Per Bundle			
Inches	mm		Deluxe/ Deluxe Plus	Super Deluxe	Gold	Heavy / Super Heavy / Ultra Heavy
1	25	33	25	25	25	-
1 ¼	32	42	25	20	20	15
1 ½	40	48	25	15	15	15
2	50	60	15	15	15	10
2 ½	65	75	-	10	7	7
3	80	88	-	5	5	5
4	100	113	-	5	3	3

Effective Length of Pipe (mm) = 3000+50mm



Factory view - Bommasandra Industrial Area, Hosur Road, Bangalore.



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