



VECTUS[®]

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*India ki
Waterline!*

uPVC Column Pipe

**Robust and affordable
solution for your
borewell!**



VECTUS COLUMN PIPE

Vectus Column Pipes are made of uPVC material and are non-corrosive, HI-tech and Hi-tensile pipes with thick and thin technology to ensure uniform thickness across the length of pipe and the square threads for extra strength. Pipes are available in various sizes starting from 1" to 4". The pipes come in various types V4 12.5 Kg, V4 15 Kg, Eco Medium, Medium, Standard & Heavy. Pipe Dimension Chart will clearly indicate the best type to be used for any particular application, depending upon the depth of the bore-well and the type of pump head.

Rubber Ring

Rubber Rings are specially designed and are made from special rubber to ensure leak proof fitting and also absorbs the vibrations of the pump. This results in extended life of motor and pump bearings.

Square Threads

Square threads are made by automatic CNC machines with perfect dimensional accuracy reduces the tensile loads and provides extra strength, hence this coupling benefits pump fitting becomes strong with improved load bearing capacity. Special designed threads also benefits easy pipe fittings during Installation Process.

Better thickness and capability

To ensure the extra strength and capacity to bear extra weight because of the threading, the walls of the pipe are given extra thickness, by thick and thin process.

Pure and safe drinking water

The water pumped through Vectus UPVC column pipes is 100% safe and pure, as it is manufactured without any metallic materials.

Uses

- Submersible and jet pumps are used for Irrigation, in Domestic, Industrial Mining.
- Column Pipes are much more helpful as compared to MS, GI, HDPE and SS Pipes.

Advantages of Vectus Column Pipes

- Long Life
- Easy to handle in transportation and Installation
- Power Saver
- Smooth internal surface hence free flow of water
- Light in weight compared to others MS Pipes, GI Pipes & HDPE Pipes, yet Strong & Durable
- Free from rusting & corrosion
- No electrolytic deposition

Technical specifications

- Colour : Off white
- Specific gravity : 1.40 to 1.43 g/cc
- Tensile Strength : >50 mpa
- Demonstration capacity : <10% of actual demonstration @ 0°C
- Vicat Softening Temperature : >80°C



Dimension chart

Size		1"	1.25"	1.5"	2"	2.5"	3"	4"
OD	Min	33.30	42.10	48.20	60.20	75.20	88.10	113.00
	Max	33.50	42.30	48.40	60.50	75.50	88.40	113.50
V4-12.5	End W/T	3.95/4.25	4.3/4.7	4.4/4.6	-	-	-	-
	Barrel	1.6/1.9	2.0/2.4	2.7/2.9	-	-	-	-
V4-15	End W/T	4.0/4.15	4.6/4.8	5.0/5.2	-	-	-	-
	Barrel	1.85/2.0	2.4/2.6	2.7/2.9	-	-	-	-
Eco Medium	End W/T	-	-	-	4.4/4.6	-	-	-
	Barrel	-	-	-	2.1/2.3	-	-	-
Medium	End W/T	4.6/5.0	5.15/5.45	5.55/5.95	5.2/5.6	5.2/5.6	6.0/6.4	7.1/7.4
	Barrel	2.5/2.8	2.85/3.2	3.5/3.9	2.8/3.2	2.8/3.2	3.5/3.8	3.8/4.1
Standard	End W/T	5.45/5.75	5.65/5.95	6.25/6.55	6.4/6.8	6.6/6.9	7.8/8.1	9.0/9.5
	Barrel	3.2/3.5	3.55/3.85	4.1/4.4	3.9/4.3	4.0/4.4	5.0/5.4	5.7/6.1
Heavy	End W/T	-	6.85/7.25	7.5/7.9	7.8/8.2	9.0/4	10.1/10.5	12.5/12.9
	Barrel	-	4.65/5.05	5.3/5.7	5.3/5.7	6.3/6.8	7.3/7.8	9.4/10.0

Why uPVC Column Pipes?

S.No.	Property Requirement For Column Pipes	Vectus uPVC Column Pipes	Mild Steel or Galvanized Steel Pipes	HDPE Pipes
1	Rigidity requirements so that Drop / Riser pipes and pump is vertical for proper NRV function.	Pipes are rigid	Pipes are rigid	Pipes are flexible hence not suitable for Drop / Riser application. Pipes are also soft and over long term use with heavy pump set they elongate and lose their shape permanently. In the process of elongation they become thin and break.
2	Strong threaded joints required for holding the column and submersible Pump load.	Specially designed square threads have very high load holding capacity and these threads do not corrode, rust or deteriorate.	The threads are prone to corrosion and rusting. Since the threads do not have a layer of Galvanization, after 2-3 years of use the old thread have to be cut out and new threads have to be made on the pipes with lathe machine due to rusting Problem. Money and effort is spent in making new threads and the user ends up with a shorter length of pipe.	The threads cannot be formed as these pipes are soft and therefore jointing of the pipe with the pump or at the top with any fixture is simple Push type joint.
3	Leak proof joints required for saving every drop of water.	Special rubber seals are provided with the thread to ensure 100% leak proof at high pump pressure.	These threads are not pressure tight and do not have any rubber sealing system. Therefore not leak proof.	Threads are weak and open up during use.
4	Smooth Internal Surface.	Since the internal surface is very smooth therefore head loss due to friction is low and water discharge is more by 10%-30%	Internal surface is rough and head loss is high.	Internal surface is not very smooth.
5	Light weight of pipe and ease in Installation	Pipes come in 3 meters of standard length and are light weight for easy handling both during pump fitment and removing of pump	Pipes are heavy and great effort is required for installation and removal of pumps. In deeper borewells the column of pipe becomes very heavy and are prone to accidents during handling.	Becomes hard and cannot be rolled back during removal.
6	Long life	Pipes do not react with acidic or alkaline water and also have a very long life inside the bore well.	Steel pipes are prone to rust, corrosion and ultimately get damaged and have to be replaced very quickly.	Strength of material being very less, so very thick pipes are required for high pressure application. This reduces the internal area for water flow considerably. Hence thin pipes are used for high pressure application and the pipes burst in 2-3 yrs.



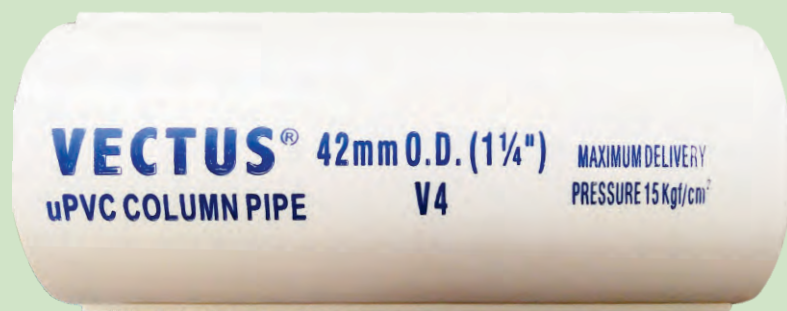
Belling Type Column Pipe



Belling Type Column pipe Dimension Chart

S.No.	Size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1	OD	MIN	33.30	42.10	48.20	-	-	-
		MAX	33.50	42.30	48.40	-	-	-
2	V4 12.5	END W/T	3.95/4.25	4.30/4.70	4.40/4.60	-	-	-
		BARREL	1.60/1.90	2.00/2.40	2.70/2.90	-	-	-
3	V4 - 15	END W/T	4.00/4.15	4.60/4.80	5.00/5.20	-	-	-
		BARREL	1.85/2.00	2.40/2.60	2.70/2.90	-	-	-

Column pipe Coupler



S.No.	Size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
1	OD	MIN	48.00	57.00	64.80	78.00	92.00	108.70
		MAX	48.50	57.50	65.20	78.50	92.50	109.20

PVC Pipe Joint System with Coupler and Unique Locking Ring for Extra Pump Safety

In this unique locking ring system developed by Vectus Pipes, the coupler is fitted into the pipe and locked with locking ring, thus eliminating the chances of coupler loosening and column slipping during dismantling process and also excessive tightening of coupler with pipe. Locking ring is made by same uPVC material used for manufacturing of column pipes.



Color coding of Pipes

The color with which the specification of pipes is printed on the pipes varies with different pipe classes. The color coding for different classes of pipe is as under.

- V4 12.5 Kg & V4 15 Kg - ■ Purple
- Medium - ■ Orange
- Standard - ■ Red
- Heavy - ■ Blue

Handling & Storage of Pipes

Proper handling of pipes

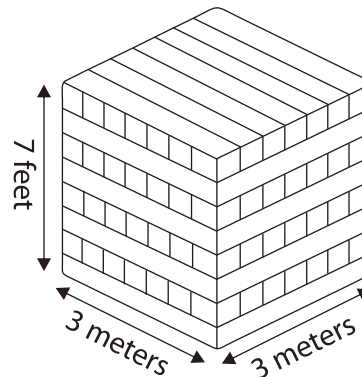
On receiving the pipes, please check and inspect for any forms of transport damage due to shift in loads or improper handling / treatment. Visually examine the ends of pipes for any cracks or damage.

Do not throw or drop the pipes to the floor. Do not drag or push the pipes from the truck bed. Avoid pipe contact from any sharp edges.

Vectus Industries has started one number extra black rubber ring with each & every bundle of column pipes

Storage of pipes

- The pipes should preferably be stored indoors. When this is not possible please ensure that the bundles are covered to prevent exposure to reduce the effect of UV rays.
- Maximum stacking height of pipes should be 7 feet.
- Place alternate layers of pipes at an angle of 90 degrees/perpendicular to each other, with the first layer in a square shape.
- The pipes are stored on level ground-free of any sharp objects.
- If pipes of same diameter but different classes are being stacked together, place the thicker pipes below, i.e. stack heavy pipes below standard pipes.
- The surface should be dry.



Prevention Of Water Hammer

- It is suggested out of experience to make a 3mm hole in the pump NRV for deep bore wells of 500 feet and above. Due to this, water hammering will not take place in the bottom pipe at the time of pump stoppage and all the pipes will remain safe.
- A non return valve can also be installed at the Top pipe to prevent water hammer. But when the non-return valve is installed, the hole in the pump NRV should not be made.

Pipe and Pump Safeguard Against Dry Running

- In places where the yield of water from the bore well is less, the pump starts running dry after sometime which may heat up the connected column pipe. A correct assessment of bore yield should be done and timer switch should be used so that pump shuts off automatically after a certain amount of preset time and again starts automatically as per the timer setting. This will ensure that water is always in the borewell and the pump does not run in dry condition.
- During pump dry running the submersible pump gets heated up and may damage the first connected column Pipe. Another way of handling pump dry running is to use 3 meters of steel pipe in the bottom connected to the pump so that the heated pump is in contact with the steel pipe which will dissipate the heat till the time it reaches the connected column pipe.
- The dry running condition may also be tackled by installing a hand-operated valve at the top of the bore well and keeping it partially open to limit the water flow so that the pump does not get dry.
- Whenever there is dry running and pump over heating problems, there is a chance of deformation of the first pipe which is connected to the pump.

If any other pipe other than the first pipe bulges or deforms then it is clearly a case of high pressure of pumps and wrong selection of pipes.



Installation Guide



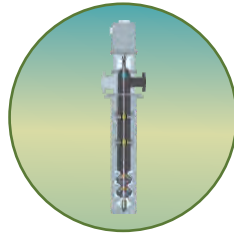
Step 1

Join the metal connector with submersible pump with the help of a chain wrench.



Step 2

Before joining the pipes, ensure to clean the threads with clean water.



Step 3

Before joining the pipes, ensure that the pump guard is installed properly.



Step 4

Before opening or joining the pipe/adaptor ensure to hold the coupling by hand.



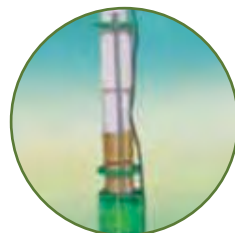
Step 5 (A & B)

Tighten pipe with hand till half rubber ring is seen. Finally if required, give a last jerk with rope or felt wrench.



Step 6

At the time of lowering pipes, place the clamp below the coupler. Clamp the top adaptor with the last pipe.



Step 7

Lower the pipes with the help of chain pulley.

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Technical details of load pressure

Size of Type	Ultimate Breaking Load	Safe Puling Load With Chain Pulley	Safe Allowable Hydrostatic Pressure(kg/cm ²)	Safe Allowable Depth(MTR)
OD : 33mm • NB : 25mm (1")				
■ V4 - 12.5	800	450	12.5	125
■ V4 - 15	1000	600	15	150
■ Medium	1250	750	21	210
■ Standard	1900	1100	30	300
OD : 42mm • NB : 32mm (1½")				
■ V4 - 12.5	1200	800	12.5	125
■ V4 - 15	1550	1000	15	150
■ Medium	1800	1100	21	210
■ Standard	2550	1500	25	250
■ Heavy	3100	1800	35	350
OD : 48mm • NB : 40mm (1½")				
■ V4 Light	2000	1200	15	150
■ Medium	2500	1500	21	210
■ Standard	2950	1700	26	260
■ Heavy	4050	2400	35	350
OD : 60mm • NB : 50mm (2")				
■ Eco Medium	1800	1350	8	80
■ Medium	2450	1450	13	130
■ Medium Plus	3100	1850	17	170
■ Standard	3600	2100	20	200
■ Heavy	4700	2800	27	270
OD : 75mm • NB : 65mm (2½")				
■ Medium	3100	1800	10	100
■ Standard	4650	2400	16	160
■ Heavy	7000	4200	26	260
OD : 88mm • NB : 80mm (3")				
■ Medium	4450	2600	11	110
■ Standard	6800	4000	17	170
■ Heavy	9600	5650	26	260
OD : 113mm • NB : 100mm (4")				
■ Medium	6800	4000	10	100
■ Standard	10000	5900	15	150
■ Heavy	16000	9500	26	260



Banmore Factory View



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