

# **ONE STOP PIPING SOLUTION**



# **uPVC COLUMN PIPES**

#### **Coupler & Bell Mouth Type**

These pipes are specially designed for submersible pumps, capable of handling both internal hydrostatic pressure as well as high tensile load caused by the pump weight & column water pressure and weight. In general the first pipe fitted with the pump will be subjected to high hydrostatic pressure and the top most one has to withstand the entire weight of the column water & pump. These pipes are available in 33, 42, 48, 60, 75, 88, 113, and 140 mm sizes of outer diameter under ESPY, Elite, Medium, Standard, Heavy and Super Heavy types. The Maximum Working Head for Coupler type is upto 450 mtrs and for Bell Mouth upto 300 mtrs.

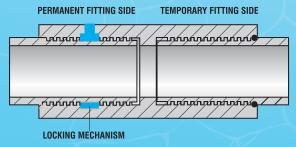


#### **FEATURES**

- O Rigid construction & longer life span of upto 25 years.
- O Best alternate for G.I. Pipes and are corrosion free & cost effective.
- O Special care is taken while fixing couplers with pipes to avoid column slippage.
- Specially designed square threads are capable of withstanding heavy load.
- O PBTS (Polymer Bonded Thread Sink) locking system enhances reliability.
- Special rubber seal is provided at the end of threads to ensure 100% leak proof even at high pressure.
- A special rubber (EPDM high strand) ring is provided in the coupling between the 2 pipes to absorb the vibration caused due to high pressure.
- O Internal surface of these pipes are very smooth, resulting in very low head loss due to friction and increases water discharge upto maximum of 30%, compared with traditional G.I. pipes thereby saving power.
- O Because of this light weight characteristic & Special Square thread design these pipes can be tightened easily by hand and no need of pipe wrench.
- uPVC column pipes are resistant to chemical reactions when used in acidic or alkaline waters assuring long life.
- O Handles water with maximum temperature upto 45° C.
- O These pipes come in 3metre standard length and are of light weight ensuring easy handling and storage. Also supplied in 1.5metre length on request.
- O Can be used in sun light because of it UV stability.

#### **PBTS - LOCKING SYSTEM**

(Polymer Bonded Thread sink)



The pipe couplers are locked with a special locking mechanism called PBTS. Advantage of this system is, it cannot be un-threaded and dismantled and will provide rigid locking. It will withstand high tensile force, ensures durability of the joints, and also acts as leak proof.

### **SQUARE THREADS**



The pipe joints have been specially designed with square threads & rubber rings made off Vinoprene, to ensure proper gripping & 100% leak proof. These are high friction threads on load, which do not open even on constant forward & reverse torque generated by starting and stopping the pump.

## C.R.I. uPVC COLUMN PIPES - COUPLER

| Dir              | mensior           | n & Weight          | detail         | S                   |             |                     |                                     |                     |                        |                                 |
|------------------|-------------------|---------------------|----------------|---------------------|-------------|---------------------|-------------------------------------|---------------------|------------------------|---------------------------------|
|                  | OUTER             | NOMINAL             |                | IICKNESS            |             | IICKNESS            | MAX. RECOMMENDED                    | NO. OF              | ULTIMATE               | SAFE PULLING                    |
| TYPE             | DIAMETER          | DIAMETER            |                | OS (mm)             |             | LL (mm)             | INSTALLATION DEPTH in metre         | PIPES<br>PER BUNDLE | BREAKING<br>LOAD in kg | LOAD WITH CHAIN PULLEY in kg    |
| Ϋ́T              | mm<br>33          | mm<br>25            | Min<br>3.40    | Max<br>3.60         | Min<br>1.60 | Max<br>1.80         | 125                                 | 25                  | 800                    | 480                             |
| ESPY.            | 33<br>42          | 32                  | 3.70           | 4.00                | 2.00        | 2.30                | 125                                 | 25<br>25            | 1350                   | 770                             |
|                  | 48                | 40                  | 3.80           | 4.10                | 2.40        | 2.70                | 125                                 | 20                  | 1750                   | 1000                            |
|                  |                   |                     |                |                     |             |                     |                                     |                     |                        |                                 |
|                  | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER |                | HICKNESS<br>OS (mm) |             | IICKNESS<br>LL (mm) | MAX. RECOMMENDED INSTALLATION DEPTH | NO. OF<br>PIPES     | ULTIMATE<br>BREAKING   | SAFE PULLING<br>LOAD WITH CHAIN |
| ᇤ                | mm                | mm                  | Min            | Max                 | Min         | Max                 | in metre                            | PER BUNDLE          | LOAD in kg             | PULLEY in kg                    |
| ELITE TYPE       | 33                | 25                  | 25             | 3.60                | 3.90        | 1.70                | 2.00                                | 150                 | 25                     | 1000700                         |
| ıĘ               | 42                | 32                  | 32             | 4.70                | 5.00        | 2.50                | 2.80                                | 150                 | 25                     | 15001000                        |
| <b>=</b> =       | 48                | 40                  | 40             | 5.00                | 5.30        | 2.80                | 3.10                                | 150                 | 20                     | 20001200                        |
|                  | 60                | 50                  | 50             | 4.50                | 4.80        | 2.40                | 2.70                                | 90                  | 15                     | 25001300                        |
|                  |                   |                     |                |                     |             |                     |                                     |                     |                        |                                 |
|                  | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER |                | HICKNESS<br>OS (mm) |             | IICKNESS<br>LL (mm) | MAX. RECOMMENDED INSTALLATION DEPTH | NO. OF<br>PIPES     | ULTIMATE<br>BREAKING   | SAFE PULLING<br>LOAD WITH CHAIN |
|                  | mm                | mm                  | Min            | Max                 | Min         | Max                 | in metre                            | PER BUNDLE          | LOAD in kg             | PULLEY in kg                    |
| ш                | 33                | 25                  | 4.20           | 4.50                | 2.00        | 2.30                | 210                                 | 25                  | 1400                   | 770                             |
| _ ₹              | 42                | 32                  | 5.10           | 5.40                | 3.10        | 3.40                | 210                                 | 20                  | 2100                   | 1200                            |
| Σ                | 48                | 40                  | 5.50           | 5.80                | 3.30        | 3.60                | 210                                 | 15                  | 2500                   | 1300                            |
| MEDIUM TYPE      | 60                | 50                  | 5.30           | 5.60                | 2.80        | 3.10                | 130                                 | 15                  | 2800                   | 1500                            |
| E E              | 75                | 65                  | 5.30           | 5.60                | 2.80        | 3.10                | 100                                 | 10                  | 3500                   | 1900                            |
|                  | 88                | 80                  | 6.00           | 6.30                | 3.40        | 3.70                | 110                                 | 8                   | 5000                   | 2750                            |
|                  | 113               | 100                 | 6.30           | 6.60                | 3.80        | 4.10                | 100                                 | 5                   | 7500                   | 4100                            |
| Plus             | 60                | 50                  | 5.60           | 5.9                 | 3.4         | 3.7                 | 170                                 | 10                  | 3150                   | 1850                            |
|                  | OUTER             | NOMINAL             | WALLTH         | IICKNESS            | WALL TH     | IICKNESS            | MAX. RECOMMENDED                    | NO. OF              | ULTIMATE               | SAFE PULLING                    |
|                  | DIAMETER          | DIAMETER            |                | S (mm)              |             | LL (mm)             | INSTALLATION DEPTH                  | PIPES               | BREAKING               | LOAD WITH CHAIN                 |
|                  | mm                | mm                  | Min            | Max                 | Min         | Max                 | in metre                            | PER BUNDLE          | LOAD in kg             | PULLEY in kg                    |
| STANDARD TYPE    | 33                | 25                  | 5.40           | 5.70                | 3.30        | 3.60                | 300                                 | 25                  | 1800                   | 1300                            |
|                  | 42                | 32                  | 5.70           | 6.00                | 3.50        | 3.80                | 260                                 | 20                  | 2500                   | 1500                            |
| AB               | 48                | 40                  | 6.30           | 6.60                | 4.00        | 4.30                | 260                                 | 15                  | 3000                   | 1700                            |
|                  | 60                | 50                  | 6.50           | 6.80                | 4.00        | 4.30                | 200                                 | 10                  | 3800                   | 2100                            |
| ST/              | 75                | 65                  | 6.80           | 7.10                | 4.40        | 4.70                | 160                                 | 8                   | 5000                   | 2700                            |
|                  | 88                | 80                  | 8.00           | 8.30                | 5.40        | 5.70                | 170                                 | 5                   | 7000                   | 4000                            |
|                  | 113<br>140        | 100<br>125          | 8.20<br>10.30  | 8.50<br>10.6        | 5.70<br>7.6 | 6.00<br>7.9         | 150<br>160                          | 4<br>2              | 10300<br>16500         | 5700<br>9700                    |
|                  | 140               | 125                 | 10.50          | 10.6                | 7.0         | 7.9                 | 160                                 | 2                   | 10500                  | 9700                            |
|                  | OUTER             |                     |                |                     |             | IICKNESS            | MAX. RECOMMENDED                    | NO. OF              | ULTIMATE<br>BREAKING   | SAFE PULLING                    |
|                  | DIAMETER          | DIAMETER            |                | <u> </u>            |             | ELL (mm)            | INSTALLATION DEPTH in metre         | PIPES<br>PER BUNDLE | LOAD in kg             | LOAD WITH CHAIN PULLEY in kg    |
| ш                | mm<br>42          | mm<br>32            | Min<br>6.60    | Max<br>6.90         | Min<br>4.50 | Max<br>4.80         | 350                                 | 15                  | 3100                   | 1550                            |
| HEAVY TYPE       | 48                | 40                  | 7.60           | 7.90                | 5.20        | 5.50                | 350                                 | 12                  | 4000                   | 2000                            |
| 3                | 60                | 50                  | 8.10           | 8.40                | 5.40        | 5.70                | 270                                 | 10                  | 4700                   | 2850                            |
|                  | 75                | 65                  | 9.20           | 9.60                | 6.40        | 6.70                | 260                                 | 6                   | 7000                   | 4200                            |
| Ŧ                | 88                | 80                  | 10.10          | 10.40               | 7.60        | 7.90                | 260                                 | 5                   | 9500                   | 5700                            |
|                  | 113<br>140        | 100<br>125          | 11.90<br>15.32 | 12.30<br>15.62      | 9.40        | 9.70<br>12.2        | 260<br>260                          | 3<br>2              | 16000                  | 9500                            |
| Plus             |                   | 50                  | 8.70           | 9.1                 | 11.9<br>6.2 | 6.5                 | 300                                 | 8                   | 24000<br>5750          | 14600<br>3400                   |
| 1140             |                   |                     |                |                     |             |                     |                                     | /                   |                        |                                 |
|                  | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER |                | HICKNESS<br>OS (mm) |             | IICKNESS<br>LL (mm) | MAX. RECOMMENDED INSTALLATION DEPTH | NO. OF<br>PIPES     | ULTIMATE<br>BREAKING   | SAFE PULLING<br>LOAD WITH CHAIN |
| m                | mm                | mm                  | Min            | Max                 | Min         | Max                 | in metre                            | PER BUNDLE          | LOAD in kg             | PULLEY in kg                    |
| SUPER HEAVY TYPE | 42                | 32                  | 7.80           | 8.1                 | 5.3         | 5.6                 | 400                                 | 12                  | 3150                   | 1850                            |
| ×                | 60                | 50                  | 9.20           | 9.50                | 6.80        | 7.10                | 350                                 | 8                   | 5600                   | 3500                            |
| EA               | 75                | 65                  | 11.30          | 11.60               | 8.80        | 9.10                | 350                                 | 5                   | 8600                   | 4800                            |
| <u> </u>         | 88                | 80                  | 12.80          | 13.10               | 10.00       | 10.30               | 350                                 | 4                   | 11900                  | 6600                            |
| UP!              | 113               | 100                 | 15.10          | 15.40               | 12.60       | 13.00               | 350                                 | 2                   | 19800                  | 11000                           |
| S                |                   |                     |                |                     |             |                     |                                     |                     |                        |                                 |
| DI               | 140               | 125                 | 19.00          | 19.3                | 15.6        | 15.9                | 350                                 | 2                   | 30500                  | 18600                           |
| Plus             | 42                | 32                  | 8.50           | 8.80                | 6.00        | 6.3                 | 450                                 | 12                  | 3500                   | 2100                            |

#### C.R.I. uPVC COLUMN PIPES - BELLMOUTH

Dimension & Weight details

| /PE    | OUTER NOMINA DIAMETER DIAMETE |    | AT ENDS (mm) AT BARELL (m |                 |      | ELL (mm) | MAX. RECOMMENDED INSTALLATION DEPTH in metre |    | ULTIMATE<br>BREAKING<br>LOAD in kg | SAFE PULLING<br>LOAD WITH CHAIN<br>PULLEY in kg |  |
|--------|-------------------------------|----|---------------------------|-----------------|------|----------|--|----|------------------------------------|---|--|
|        | mm                            | mm | Min                       | Min Max Min Max |      |          |  |    |                                    |   |  |
| P      | 33                            | 25 | 3.40                      | 3.60            | 1.60 | 1.80     | 125  | 25 | 650                                | 460   |  |
| E<br>S | 42                            | 32 | 3.70                      | 4.00            | 2.00 | 2.30     | 125  | 25 | 1100                               | 725   |  |
|        | 48                            | 40 | 3.80                      | 4.10            | 2.40 | 2.70     | 125  | 20 | 1300                               | 800   |  |

| <u> </u> | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER | WALL TH<br>AT END | IICKNESS<br>S (mm) |      |      | MAX. RECOMMENDED INSTALLATION DEPTH in metre | NO. OF<br>PIPES<br>PER BUNDLE | ULTIMATE<br>BREAKING<br>LOAD in kg | SAFE PULLING<br>LOAD WITH CHAIN<br>PULLEY in kg |  |
|----------|-------------------|---------------------|-------------------|--------------------|------|------|--|-------------------------------|------------------------------------|---|--|
| ΙĒ       | mm                | mm                  | Min               | Max                | Min  | Max  | ai meac                                      |                               |                                    |   |  |
|          | 33                | 25                  | 3.60              | 3.90               | 1.70 | 2.00 | 150  | 25                            | 900                                | 630   |  |
| 15       | 42                | 32                  | 4.70              | 5.00               | 2.50 | 2.80 | 150  | 25                            | 1500                               | 1000  |  |
| ₩        | 48                | 40                  | 5.00              | 5.30               | 2.80 | 3.10 | 150  | 20                            | 1900                               | 1170  |  |
|          | 60                | 50                  | 4.50              | 4.80               | 2.40 | 2.70 | 90   | 15                            | 2200                               | 1300  |  |

| H. | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER | WALL THICKNESS<br>AT ENDS (mm) |      | AT BARELL (mm) |      | MAX. RECOMMENDED INSTALLATION DEPTH in metre |      | ULTIMATE<br>BREAKING<br>LOAD in kg | SAFE PULLING<br>LOAD WITH CHAIN<br>PULLEY in kg |  |
|----|-------------------|---------------------|--------------------------------|------|----------------|------|--|------|------------------------------------|---|--|
| I≥ | mm                | mm                  | Min                            | Max  | Min            | Max  |  |      | _                                  |   |  |
| Σ  | 33                | 25                  | 4.20                           | 4.50 | 2.00           | 2.30 | 210  | 25   | 1250                               | 720   |  |
| 百百 | 42                | 32                  | 5.10 5.40 3.10 3.40 210        |      | 210            | 25   | 2000   | 1150 |                                    |   |  |
| Ξ  | 48                | 40                  | 5.50                           | 5.80 | 3.30           | 3.60 | 210  | 20   | 2300                               | 1250  |  |
|    | 60                | 50                  | 5.30                           | 5.60 | 2.80           | 3.10 | 130  | 15   | 2700                               | 1450  |  |

| YPE  | OUTER<br>DIAMETER | NOMINAL<br>DIAMETER | AT END |      |      | LL (mm) | MAX. RECOMMENDED<br>INSTALLATION DEPTH<br>in metre |    | ULTIMATE<br>BREAKING<br>LOAD in kg | SAFE PULLING<br>LOAD WITH CHAIN<br>PULLEY in kg |  |
|------|-------------------|---------------------|--------|------|------|---------|--|----|------------------------------------|---|--|
|      | mm                | mm                  | Min    | Max  | Min  | Max     |  |    |                                    |   |  |
| A B  | 33                | 25                  | 5.40   | 5.70 | 3.30 | 3.60    | 300  | 25 | 1550                               | 1100  |  |
|      | 42                | 32                  | 5.70   | 6.00 | 3.50 | 3.80    | 260  | 25 | 2200                               | 1380  |  |
| STAI | 48                | 40                  | 6.30   | 6.60 | 4.00 | 4.30    | 260  | 20 | 2700                               | 1500  |  |
| 65   | 60                | 50                  | 6.50   | 6.80 | 4.00 | 4.30    | 200  | 15 | 3500                               | 1950  |  |

#### **PUMP DELIVERY PRESSURE**

Pump delivery pressure is the maximum delivery head of the pump. In the pump performance curves the value of head at which the flow becomes nil (zero), is the max. head in metres. Hence the max. head of the pump must not exceed the recommended permissible hydrostatic pressure of the pipes published in the following table.

 $(10m = 1kg/cm^2)$ 

| I | OUTER    | NOMINAL  |      |       | Permiss | sible Hyd      | rostatic P    | ressure ( | kg/cm²)       |                |                        |  |
|---|----------|----------|------|-------|---------|----------------|---------------|-----------|---------------|----------------|------------------------|--|
| 1 | DIAMETER | DIAMETER | ESPY | ELITE | MEDIUM  | MEDIUM<br>PLUS | STAND-<br>ARD | HEAVY     | HEAVY<br>PLUS | SUPER<br>HEAVY | SUPER<br>HEAVY<br>PLUS |  |
| ١ | 33       | 25       | 12.5 | 15    | 21      | -              | 30            | -         | -             | -              | -                      |  |
|   | 42       | 32       | 12.5 | 15    | 21      | -              | 26            | 35        | -             | 40             | 45                     |  |
|   | 48       | 40       | 12.5 | 15    | 21      | -              | 26            | 35        | -             | -              | -                      |  |
|   | 60       | 50       | -    | 9     | 13      | 17             | 20            | 27        | -             | 35             | -                      |  |
|   | 63       | 50       | -    | -     | -       | -              | -             | -         | 30            | -              | -                      |  |
|   | 75       | 65       | -    | -     | 10      | -              | 16            | 26        | -             | 35             | -                      |  |
|   | 88       | 80       | -    | -     | 11      | -              | 17            | 26        | -             | 35             | -                      |  |
|   | 113      | 100      | -    | -     | 10      | -              | 15            | 26        | -             | 35             | -                      |  |
|   | 140      | 125      | -    | -     | -       | -              | 16            | 26        | -             | 35             | -                      |  |

<sup>\*</sup> Installation depth depends on recommended permisible hydrostatic pressure rating of the pipes and refer pump delivery pressure chart for more details.

