ISO

IS 4984

# Reliable in **Quality** and **Durability**

**SHIVA**
**HDPE PIPES**
(AN ISO : 9001-2015 COMPANY)

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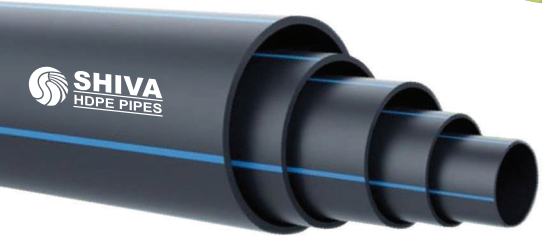
Shiva HDPE Pipes are a safe, long lasting and cost effective solution for water supply lines. Irrigation & borewell applications. Shiva HDPE Pipes are Clearly better option of other piping material such as concrete pipes, Metal Pipes & PVC , GI Pipes etc. Shiva HDPE Pipes are manufactured with virgin raw materials from 20mm to 400mm upto pressure rating of 16Kg/Cm2 with sate of art manufacturing facilities under Quality Management System ISO:9001-2015, Shiva HDPE Pipes meets the specifications for IS:4984:2016 and covered with ISI Mark. The dimensional details as per IS:4984-2016 are given in table 1, 2 & 3.

## The Next Generation Piping System



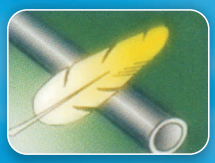

## Applications of Shiva HDPE Pipes

| Water Supply | Industrial | Agriculture | Others |
|---|---|---|---|
| Pumping mains Distribution lines | Transportation of Effluent Chemicals & Treated / Untreated water disposal | Column Piping for submersible pumps, suction & delivery pipes for jet pumps | Ducting for Electrical & Telephone Cable |
| House Service Connections | Conveyance of edible oil, fruit pulps, milk & other food products | Sprinkler and drip irrigation systems | Coal handling in mines compressed Air supply |

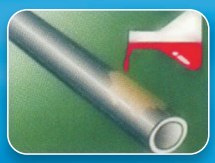
## Features and Benefits of Shiva HDPE Pipes

**Flexibility & Toughness:**
Shiva HDPE Pipes are available in 50 to 800 meters length coils which minimize joints, enabling easy and quick laying.

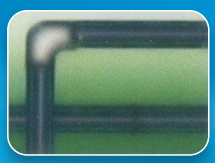
Shiva HDPE Pipes are elastic, flexible, undentable and practically unbreakable. They are resistant to rough handling, landslides, soil movements, traffic loads etc.



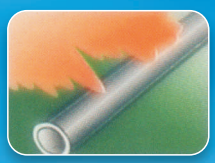
**Light Weight:**
Shiva HDPE Pipes are 6 to 8 times lighter than other conventional pipes reducing transportation and handling costs.



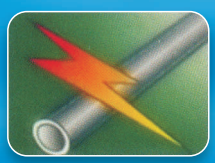
**Chemically Inert:**
Shiva HDPE Pipes can resist corrosion by chemicals. They can be laid under water across rivers, lakes and even in corrosive soils without any internal lining or cathodic protection.



**Easy Jointing:**
Shiva HDPE Pipes are easily joined by the (butt) welding system.

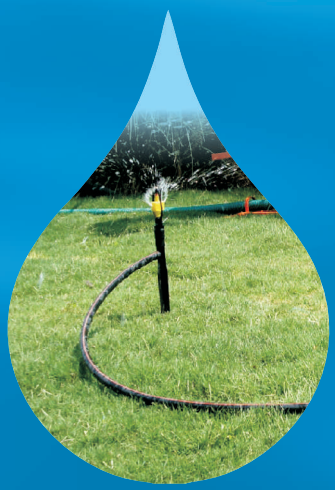


**Long Life:**
Shiva HDPE Pipes last twice as long compared to other conventional piping systems i.e. their life span is more than 50 years.



**Low Thermal & Electrical Conductivity:**
Shiva HDPE Pipes are highly efficient in transportation of chilled water in refrigeration and other cooling systems. The pipes are also applicable as electrical and telephone cable conduits.

**Smooth Surface:**
Shiva HDPE Pipes have a very smooth internal surface facilitating easy flow of liquids with 25% more efficiency compare to other conventional pipes.



# TABLE-4 Standard Dimension Ratio (SDR) and Corresponding Wall Thicknesses (e) of Pipes

*(Clauses 7.4 and E-4.3)*

IS4984:2016

| SDR | SDR 41 | | SDR 33 | | SDR 26 | | SDR 21 | | SDR 17 | | SDR 13.6 | | SDR 11 | | SDR 9 | | SDR 7.4 | | SDR 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal Pressure (PN) Bar | | | | | | | | | | | | | | | | | | | | |
| PE 63<br>PE 80<br>PE 100 | PN 2<br>PN 2.5<br>PN 3 | | PN 2.5<br>PN 3.2<br>PN 4 | | PN 3.2<br>PN 4<br>PN 5 | | PN 4<br>PN 5<br>PN 6 | | PN 5<br>PN 6<br>PN 8 | | PN 6<br>PN 8<br>PN 10 | | PN 8<br>PN 10<br>PN 12.5 | | -<br>PN 12.5<br>PN 16 | | -<br>PN 16<br>PN 20 | | -<br>PN 20<br>- | |
| Wall Thicknesses | | | | | | | | | | | | | | | | | | | | |
| Nominal OD $d_{nz}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm | $e_{Min}$ mm | $e_{Max}$ mm |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - | 1.9 | 2.2 | 2.3 | 2.6 | 2.7 | 3.1 | 3.4 | 3.8 |
| 25 | - | - | - | - | - | - | - | - | - | - | 1.9 | 2.2 | 2.3 | 2.6 | 2.8 | 3.2 | 3.4 | 3.8 | 4.2 | 4.7 |
| 32 | - | - | - | - | - | - | - | - | 1.9 | 2.2 | 2.4 | 2.7 | 2.9 | 3.3 | 3.6 | 4.1 | 4.4 | 4.9 | 5.4 | 6.0 |
| 40 | - | - | - | - | - | - | 1.9 | 2.2 | 2.4 | 2.7 | 3.0 | 3.4 | 3.7 | 4.2 | 4.5 | 5.1 | 5.4 | 6.0 | 6.7 | 7.5 |
| 50 | - | - | - | - | 2.0 | 2.3 | 2.4 | 2.7 | 3.0 | 3.4 | 3.7 | 4.2 | 4.6 | 5.2 | 5.6 | 6.3 | 6.8 | 7.6 | 8.4 | 9.3 |
| 63 | - | - | - | - | 2.5 | 2.9 | 3.0 | 3.4 | 3.7 | 4.2 | 4.7 | 5.3 | 5.8 | 6.5 | 7.0 | 7.8 | 8.6 | 9.6 | 10.5 | 11.7 |
| 75 | 1.9 | 2.2 | 2.3 | 2.6 | 2.9 | 3.3 | 3.6 | 4.1 | 4.5 | 5.1 | 5.6 | 6.3 | 6.9 | 7.7 | 8.4 | 9.3 | 10.2 | 11.3 | 12.5 | 13.9 |
| 90 | 2.2 | 2.5 | 2.8 | 3.2 | 3.5 | 4.0 | 4.3 | 4.8 | 5.3 | 5.9 | 6.7 | 7.5 | 8.2 | 9.1 | 10.0 | 11.1 | 12.2 | 13.5 | 15.0 | 16.6 |
| 110 | 2.7 | 3.1 | 3.4 | 3.8 | 4.3 | 4.8 | 5.9 | 6.6 | 6.5 | 7.3 | 8.1 | 9.0 | 10.0 | 11.1 | 12.3 | 13.6 | 14.9 | 16.5 | 18.4 | 20.3 |
| 125 | 3.1 | 3.5 | 3.8 | 4.3 | 4.8 | 5.4 | 6.0 | 6.7 | 7.4 | 8.2 | 9.2 | 10.2 | 11.4 | 12.7 | 13.9 | 15.4 | 16.9 | 18.7 | 20.9 | 23.1 |
| 140 | 3.5 | 4.0 | 4.3 | 4.8 | 5.4 | 6.0 | 6.7 | 7.5 | 8.3 | 9.2 | 10.3 | 11.4 | 12.8 | 14.2 | 15.6 | 17.3 | 19.0 | 21.0 | 23.4 | 25.8 |
| 160 | 3.9 | 4.4 | 4.9 | 5.5 | 6.2 | 6.9 | 7.7 | 8.6 | 9.5 | 10.6 | 11.8 | 13.1 | 14.6 | 16.2 | 17.8 | 19.7 | 21.7 | 24.0 | 26.7 | 29.5 |
| 180 | 4.4 | 4.9 | 5.5 | 6.2 | 7.0 | 7.8 | 8.6 | 9.6 | 10.6 | 11.8 | 13.3 | 14.7 | 16.4 | 18.1 | 20.0 | 22.1 | 24.4 | 26.9 | 30.0 | 33.1 |
| 200 | 4.9 | 5.5 | 6.1 | 6.8 | 7.7 | 8.6 | 9.6 | 10.7 | 11.8 | 13.1 | 14.7 | 16.3 | 18.2 | 20.1 | 22.3 | 24.6 | 27.1 | 29.9 | 33.4 | 36.8 |
| 225 | 5.5 | 6.2 | 6.9 | 7.7 | 8.7 | 9.7 | 10.8 | 12.0 | 13.3 | 14.7 | 16.6 | 18.4 | 20.5 | 22.7 | 25.0 | 27.6 | 30.5 | 33.7 | 37.5 | 41.4 |
| 250 | 6.1 | 6.8 | 7.6 | 8.5 | 9.7 | 10.8 | 12.0 | 13.3 | 14.7 | 16.3 | 18.4 | 20.3 | 22.8 | 25.2 | 27.8 | 30.7 | 33.8 | 37.3 | 41.7 | 46.0 |
| 280 | 6.9 | 7.7 | 8.5 | 9.5 | 10.8 | 12.0 | 13.4 | 14.8 | 16.5 | 18.3 | 20.6 | 22.8 | 25.5 | 28.2 | 31.2 | 34.4 | 37.9 | 41.8 | 46.7 | 51.5 |
| 315 | 7.7 | 8.6 | 9.6 | 10.7 | 12.2 | 13.5 | 15.0 | 16.6 | 18.6 | 20.6 | 23.2 | 25.6 | 28.7 | 31.7 | 35.0 | 38.6 | 42.6 | 47.0 | 52.5 | 57.9 |
| 355 | 8.7 | 9.7 | 10.8 | 12.0 | 13.7 | 15.2 | 16.9 | 18.7 | 20.9 | 23.1 | 26.1 | 28.8 | 32.3 | 35.6 | 39.5 | 43.6 | 48.0 | 52.9 | 59.2 | 65.2 |
| 400 | 9.8 | 10.9 | 12.2 | 13.5 | 15.4 | 17.0 | 19.1 | 21.1 | 23.6 | 26.1 | 29.5 | 32.6 | 36.4 | 40.1 | 44.5 | 49.1 | 54.1 | 59.6 | 66.7 | 73.5 |

NOTES:

1. Tolerances calculated from (0.1 $e_{min}$ + 0.1) mm rounded up to the next 0.1 mm
2. All pressure ratings are calculated at 27°C and rounded up to nearest pressure class.
3. Considering operational problems, maximum wall thickness of pipes are considered around 130 mm.

## The following steps are to be taken for jointing the pipes

- Cut the pipes straight and clean the inner edge with scrapper.
- Align the cut surface of the pipe.
- Heat the hot plate upto 200oC.
- Test the temperature of hot plate with thermochrome chalk.
- Contact the cut pipe surfaces to two sides of hot plate.
- Let the weld rims form.
- Remove the hot plate.
- Join the heated ends together with moderate pressure.
- Allow the welded pipe to cool.

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Manufactured by:

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