



Luhadia
Overseas

Quality and **Innovation** are woven into **Everything** that we Offer.



CM/L-8876210



CM/L-8400175410



CM/L-3061641



CM/L-8400082209



CM/L-2573865



CM/L-2573966



CM/L-8400122607



OUR QUALITY PLAN INCLUDES:

- Testing Incoming Raw Materials: HDPE resin and other components
- Consistent setup and operation of processes to production standards
- Testing of each product to insure compliance to applicable standards along with firm Specifications and/or Customer Specifications, to name a few
- Inspection of all products by Production Personnel
- Inspection of all products by Quality Assurance Personnel
- Final Inspection prior to shipment/dispatch
- Regular feedback on performance, issues, and improvement plans is gathered and acted upon to continuously improve our operations and customer experience.

TEST FACILITIES AT OUR PREMISES

- Dimensional & Visual Inspection
- Tensile Strength at yield & Elongation at break
- Reversion Test
- Environmental Stress Crack Resistance
- Impact Strength
- Crush Resistance
- Oxidation Induction Time (Thermal Analysis)
- Hydraulic Characteristics
- Internal Coefficient of Friction
- Density of the inner layer
- Thickness of the inner layer
- Ash content of the duct
- Fading of colors of ducts/Pipes
- Pulling force on duct joined by coupler
- M.F.I of duct / Pipe
- Density of duct / Pipe
- Opacity
- Vicat softening temperature
- Resistance to external blow at 0°C temperature
- Effect on water
- Weldability Test
- Leakage Test
- Fusion Compatibility Test
- Type Test
- Stress Relief Test
- Overall Migration
- Carbon Black Content and Dispersion Test



PRODUCT SPECIFICATION

STANDARD	APPLICATION
IS-4984:2016	PE Pipes for Water Supply, Size Range from 20 mm to 500mm
IS-17425:2020	Irrigation Equipment-Quick Coupled PE Pipes & Fittings for Sprinkler Irrigation System, Size Range from 50mm to 200mm
IS-14885:2001	PE Pipes for the supply Gaseous Fuels from Size Range 20mm to 125mm
IS-12786:1989	PE Pipes for Micro Irrigation Lateral System. Sizes Range from 12mm to 32mm
IS-13487:1992	Emitters / Drippers for Drip Irrigation System. Size Range 2, 4 & 8 LPH
IS-13488:2008	Irrigation Equipment-Emitting Pipes Systems
IS-14333:2022	PE Pipes for Sewerage & Industrial Chemicals and Effluent Size Range from 63mm to 500mm
ISO-4427-1, 2, 3:2019	PE Pipes for Water Supply
ISO-9001:2015	Quality Management System
ISO-14000:2005	Environmental Management System
ISO-45001:2018	Occupational Health & Safety Management System
TEC. GR SPECIFICATION NO. TEC/GR/FA/CDS-008/04/AUG-19	PLB HDPE Telecom Ducts



PE PIPES FOR WATER SUPPLY

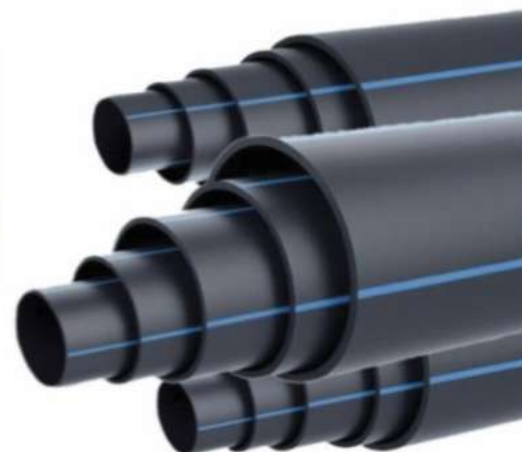
IS:4984-2016 & With Latest Amendments
(As per ISO 4427-1, 2 & 3 :2019)

CONSTRUCTION: HDPE Pipes & Coils are being manufacture by High Density Polyethylene polymers in all three grades i.e. PE-63, PE-80 & PE-100 conforming to IS: 4984-2016 with latest amendments.

SIZE RANGE :

- Size Range from 20 mm to 500 mm OD

Size Range	Length
20mm to 50mm	100m, 200m, 300m, 400m, 500m & 1000m coils
63mm to 75mm	100m, 200m, 300m, 350m, 400m coils
90mm to 110mm	250m, 150m, 100m coils & Straight length of 6m & 12m
125mm to 500mm	In straight length of 6m & 12m



- Nominal Pressure from PN-2 To PN-20
- The Standard Dimension Ratio From SDR-41 To SDR-6
- PE Grades : PE-63 , PE-80 & PE-100

CHARACTERISTICS OF PE RESIN AS GRANULES

Sl.No	Characteristics	Units	Requirements	Test Parameters	Test method
1	Base Density	Kg/m ³	940-960	27°C	IS 7328
2	Melt Flow Rate	g/10mm	0.15 to 1.1 (both inclusive)	190°C using a 5 kg mass	IS 2530
3	Thermal Stability Oxidation Induction Time (OIT)	Minutes	≥ 20	200°C, isothermal	Annexure-B IS:4984-2016
4	Volatile Matter	mg/Kg	≤ 350	Number of Test Pieces-01	Annexure-C IS:4984-2016
5	Water Content*	mg/Kg	≤ 300	Number of Test Pieces-01	Annexure-D IS:4984-2016

Note: This requirement is only applicable if the measured volatile content is not in conformity with its specified requirements. In case of dispute, the requirement for water content shall apply (If the water Content Exceeds the limits , drying to be done prior to use.



**STANDARD DIMENSION RATIO (SDR) &
WALL THICKNESSES OF PIPES**

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	PN-2	PN-2.5	PN-3.2	PN-4	PN-5	PN-6	PN-8															
PE-80	PN 2.5	PN-3.2	PN-4	PN-5	PN-6	PN-8	PN-10	PN-12.5	PN-16	PN-20												
PE-100	PN 3.2	PN-4	PN-5	PN-6	PN-8	PN-10	PN-12.5	PN-16	PN-20													
Wall Thicknesses																						
Mean OD		W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T	W.T		
min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	
16	16.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	2.3	2.2	2.6	2.7	3.1	
20	20.3	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	2.3	2.3	2.7	2.8	3.2	3.4	3.9
25	25.3	-	-	-	-	-	-	-	-	-	-	-	2.0	2.2	2.3	2.7	2.8	3.2	3.4	3.9	4.2	4.8
32	32.3	-	-	-	-	-	-	-	-	2.0	2.3	2.4	2.8	3.0	3.4	3.6	4.1	4.4	5.0	5.4	6.1	
40	40.4	-	-	-	-	-	-	2.0	2.3	2.4	2.8	3.0	3.4	3.7	4.2	4.5	5.1	5.5	6.2	6.7	7.5	
50	50.4	-	-	-	-	2.0	2.3	2.4	2.8	3.0	3.4	3.7	4.2	4.6	5.2	5.6	6.3	6.8	7.6	8.4	9.4	
63	63.4	-	-	-	-	2.5	2.9	3.0	3.4	3.8	4.3	4.7	5.3	5.8	6.5	7.0	7.8	8.6	9.6	10.5	11.7	
75	75.5	2.0	2.3	2.3	2.7	2.9	3.3	3.6	4.1	4.5	5.1	5.6	6.3	6.9	7.7	8.4	9.4	10.2	11.4	12.5	13.9	
90	90.6	2.2	2.6	2.8	3.2	3.5	4.0	4.3	4.9	5.3	6.0	6.7	7.5	8.2	9.2	10.0	11.1	12.2	13.6	15.00	16.6	
110	110.7	2.7	3.1	3.4	3.9	4.3	4.9	5.3	6.0	6.5	7.3	8.1	9.1	10.0	11.1	12.3	13.7	14.9	16.5	18.4	20.4	
125	125.8	3.1	3.6	3.8	4.3	4.9	5.5	6.0	6.7	7.4	8.3	9.2	10.3	11.4	12.7	13.9	15.4	16.9	18.7	20.9	23.1	
140	140.9	3.5	4.0	4.3	4.9	5.4	6.1	6.7	7.5	8.3	9.3	10.3	11.5	12.8	14.2	15.6	17.3	19.0	21.0	23.4	25.9	
160	161.0	4.0	4.5	4.9	5.5	6.2	7.0	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	181.1	4.4	5.0	5.5	6.2	7.00	7.8	8.6	9.6	10.6	11.8	13.3	14.8	16.4	18.2	20.0	22.1	24.4	27.0	30.0	33.1	
200	201.2	4.9	5.5	6.1	6.9	7.7	8.6	9.6	10.7	11.8	13.1	14.8	16.4	18.2	20.2	22.3	24.7	27.1	30.0	33.4	36.9	
225	226.4	5.5	6.2	6.9	7.7	8.7	9.7	10.8	12.0	13.3	14.8	16.6	18.4	20.5	22.7	25.0	27.6	30.5	33.7	37.5	41.4	
250	251.5	6.1	6.9	7.6	8.5	9.7	10.8	12.0	13.3	14.8	16.4	18.4	20.4	22.8	25.2	27.8	30.7	33.8	37.3	41.7	46.0	
280	281.7	6.9	7.7	8.5	9.5	10.8	12.0	13.4	14.9	16.5	18.3	20.6	22.8	25.5	28.2	31.2	34.5	37.9	41.8	46.7	51.5	
315	316.9	7.7	8.6	9.6	10.7	12.2	13.6	15.0	16.6	18.6	20.6	23.2	25.7	28.7	31.7	35.0	38.6	42.6	47.0	52.5	57.9	
355	357.2	8.7	9.7	10.8	12.0	13.7	15.2	17.0	18.8	20.9	23.1	26.2	29.0	32.3	35.7	39.5	43.6	48.0	52.9	59.2	65.3	
400	402.4	9.8	10.9	12.2	13.6	15.4	17.1	19.1	21.2	23.6	26.1	29.5	32.6	36.4	40.2	44.5	49.1	54.1	59.7	66.7	73.5	
450	452.7	11.0	12.2	13.7	15.2	17.4	19.3	21.5	23.8	26.5	29.3	33.1	36.6	41.0	45.2	50.0	55.1	60.9	67.1	75.0	82.6	
500	503.0	12.2	13.6	15.2	16.9	19.3	21.4	23.9	26.4	29.5	32.6	36.8	40.6	45.5	50.2	55.6	61.3	67.6	74.5	83.4	91.9	

NOTES :

1 1 Bar = 0.1 MPa = 1 N/mm².

2 Tolerances on wall thicknesses are calculated from (0.1 eMin + 0.1) mm rounded up to the next 0.1 mm.

3 For practical reasons, a minimum wall thickness of 2.0 mm is recommended.

4 All pressure ratings are calculated at 27 °C and rounded up to nearest pressure class.

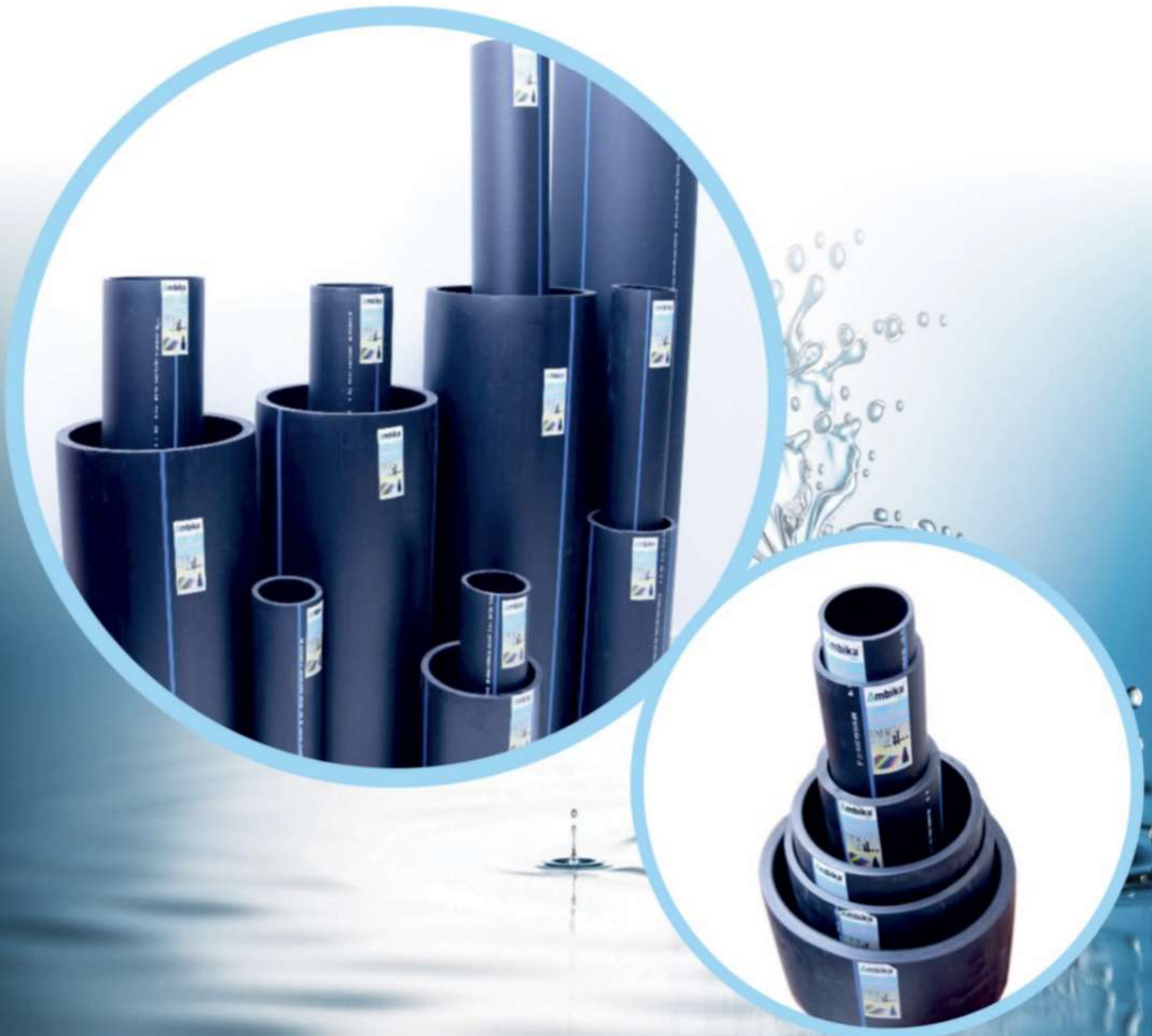
5 Considering operational problems, maximum wall thickness of pipes is considered around 130 mm.

FEATURES:

- Resistance to chemicals –Exceptional resistance to all external & internal corrosion.
- Resistance to electrolyte corrosion.
- Will not rust or rot.
- Welded joints speedup installation trench widths reduced which leads to saving in the cost of excavation and back filling.
- Smooth bore provide less head loss. Flow resistance is approximately 30 % less than that conventional pipe, permitting the use of a smaller bore pipe for a given rate of flow.
- High impact strength.
- High reliability and proven service performance.
- Greater flexibility, light weight, easy & economical installation.
- Very good thermal insulation due to low thermal conductivity.
- Flame resistance classify the material as self extinguishing according to test standard employed.
- Perfect stability of material obviates the risk of ageing and ensures long service life.

APPLICATIONS:

- These pipes are used for water mains & services and for water supply over & under ground and, both inside & outside building.



PLB HDPE TELECOM DUCTS

TEC. GR SPEC. NO. TEC / GR / FA / CDS-008/04/ AUG-19

CONSTRUCTION: Permanently Lubricated HDPE Ducts are formed by co-extrusion technique and are used for laying Optical Fiber Cables as under ground ducting / conduits.

MATERIAL: The base raw material being used for the manufacturing Permanently Lubricated Ducts is High Density Polyethylene. The grade of raw material is Ultra Violet grade and is confirming to IS:7328-1992 & ISO : 2523-1974 or ISO : 1183 & ISO : 1133 and is designated as PEELNA-50T-012 (CACT Approved) and inner layer permanently lubricated material Plastic blends comp. Grade Plastilube 2 kb.

CHARACTERISTICS :

- All the Compatible Fabricated fittings are offered to address system Requirement
- Available in Orange, Yellow, Red, Violet, Grey, Green, Blue, Brown & Black Colors for easy Denitrification.
- Offered in coils length thus reducing the number of joints in network which enables to reduce the cost.
- Other coils length & color are available as per customer specification.

DIMENSIONS: (DOT & ISO) All sizes in mm

S.No	Duct Size	Outer Dia	Ovality (Max)	Wall Thickness	Standard Length
1.	32/26	32±0.3	1.3	3.0±0.2	500/1000 Mtrs.
2.	40/33	40±0.4	1.4	3.5±0.2	200/500/1000 Mtrs.
3	50/42	50±0.5	1.4	4.0±0.3	200/ 500 Mtrs.
4.	63/57	63±0.6	1.5	3.6±0.6	100/200/500 Mtrs.
5.	75/65	75±0.7	1.6	4.3±0.7	6/12/50/100 Mtrs.
6.	90/79	90±0.9	1.8	5.1±0.8	6/12 Mtrs.
7.	110/96	110±1.0	2.2	6.3±1.0	6/12 Mtrs.



PROPERTIES:

S.No.	Test Description	Test Method	Test Requirement
1	Dimension:		
	(a) Outside diameter	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	As per Table
	(b) Ovality	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	As per Table
2	(c) Wall thickness	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	As per Table
	Visual Inspection	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	As per Specifications
3.	Density at 23° C GMS/CC	IS : 7328	0.940-0.958
4	Melt Flow Index at 190° C	IS : 2530	0.2 - 1.1
5	Tensile Strength at yield	ASTMD-638	Min 20N/mm2
6	Elongation at Break	IS : 17425	Min 500%
7	Co-efficient of Friction	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	< 0.06
8	Impact Strength	IS : 12235 (PT-9)	No Split or Crack
9	Oxidation Induction time	GR Spec. No. TEC / GR / FA / CDS-008/ 04/ AUG-19	> 30 Minutes
10	Environmental Stress & Crack resistance	ASTMD-1693	No Split or Crack
	Heat Reversion	IS : 4984	Change < 3%
12	Internal Hydrostatic pressure creep repture	IS : 4984 & ISO : 1167	Passes

All above mentioned test on PLB HDPE DUCTS are conducted in-house as per GR specification No. TEC / GR / FA / CDS-008/04/ AUG-19

PE PIPES FOR SEWERAGE & INDUSTRIAL CHEMICALS & EFFLUENT

IS-14333:2022

CONSTRUCTION: Plastic & Pipe Industries manufactures HDPE Pipes & Coils by High Density Polyethylene polymers in all three grades i.e. PE-63, PE-80 & PE-100 conforming to IS-14333:2022 with latest amendments.

SIZE RANGE :

- Size Range from 63 mm to 500 mm OD

Size Range	Length
63mm to 75mm	100m, 200m, 300m & 400m Coils
90mm to 110mm	250m, 150m, 100m Coils & Straight length of 6m & 12m
125mm to 500mm	In straight length of 6m & 12m

- Nominal Pressure from PN-2 to PN-20
- PE Grades : PE-63 , PE-80 & PE-100

FEATURES:

- Excellent Slow Crack Growth Resistance properties
- Superior hydrostatic strength and durability for long life
- Excellent chemical resistance
- Lightweight and highly flexible for faster, easier installations
- Outstanding flexibility and crush resistance
- Fusion welded jointing provides leak-free monolithic pipe systems
- Does not support microbial growth, eliminating tuberculation – inner wall scale Build- Up, flow properties remain strong for Life of pipe
- Non-corroding, unlike metallic pipes
- Resistance to electrolyte corrosion
- Will not rust or rot.
- Welded joints speedup installation trench widths reduced which leads to saving in the cost of excavation and back filling.
- Resistance to chemicals –Exceptional resistance to all external & internal corrosion.



APPLICATIONS :

- Sewer collection networks
- Industrial Effluent Disposal
- Reclaimed Water
- Rehabilitation of existing sewers.

DIMENSION: HDPE Pipes conforming to IS-14333 (Table PE-63 , PE-80 & PE-100)



HDPE Pipe for Sewerage, Conforming to IS-14333

DIMENSIONS OF HDPE PIPE - PE 63 (IS-14333)														
Dia. DN.	PN 2.5		PN 4		PN 6		PN 8		PN 10		PN 12.5		PN 16	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
63	-	-	4.0	4.6	5.8	6.7	7.5	8.5	9.0	10.1	10.9	12.2	13.3	14.9
75	3.0	3.5	1.7	5.4	6.9	7.8	8.9	10.5	10.8	12.1	13.0	14.5	15.8	17.6
90	3.6	4.2	5.7	6.5	8.2	9.3	10.6	11.9	12.9	14.4	15.6	17.4	19.0	21.1
110	4.4	5.1	6.9	7.8	10.0	11.2	13.0	14.5	15.8	17.6	19.0	21.1	23.2	25.8
125	5.0	5.7	7.9	8.9	11.4	12.8	14.8	16.5	17.9	19.9	21.6	24.0	26.4	29.3
140	5.6	6.4	8.8	9.9	12.8	14.3	16.5	18.4	20.0	22.2	24.0	26.4	29.5	32.7
160	6.4	7.3	10.0	11.2	14.6	16.3	18.9	21.0	22.9	25.4	27.6	30.6	33.7	37.3
180	7.2	8.2	11.3	12.7	16.4	18.3	21.2	23.6	25.8	28.6	31.1	34.5	37.9	41.9
200	8.0	9.0	12.5	14.0	18.3	20.3	23.6	26.2	28.6	31.7	34.5	38.2	45.2	46.7
225	9.0	10.1	14.1	15.8	20.5	22.8	26.5	29.4	32.2	35.7	38.8	42.9	47.4	52.4
250	10.0	11.2	15.7	17.5	22.8	25.3	29.5	32.7	35.8	39.6	43.2	47.8	52.7	58.2
280	11.2	12.6	17.5	19.5	25.5	28.3	33.0	36.5	40.0	44.2	48.3	53.4	-	-
315	12.6	14.1	19.7	21.9	28.7	31.8	37.1	41.1	45.0	49.7	54.4	60.1	-	-
355	14.2	15.9	22.2	24.7	32.3	35.8	41.8	46.2	50.8	56.1	-	-	-	-
400	16.0	18.6	25.0	29.0	36.4	42.1	47.1	54.4	57.2	66.0	-	-	-	-
450	18.0	20.9	28.0	32.7	41.0	47.4	53.0	61.2	-	-	-	-	-	-



HDPE Pipe for Sewerage, Conforming to IS-14333

DIMENSIONS OF HDPE PIPE - PE 80 (IS-14333)														
Dia. DN.	PN 2.5		PN 4		PN 6		PN 8		PN 10		PN 12.5		PN 16	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
63	-	-	3.0	3.5	4.4	5.1	5.8	6.6	7.0	7.9	8.6	9.7	10.5	11.8
75	2.3	2.8	3.6	4.2	5.3	6.1	6.9	7.8	8.4	9.5	10.2	11.5	12.5	14.0
90	2.8	3.3	4.3	5.0	6.3	7.8	8.2	9.3	10.0	11.2	12.2	13.7	15.0	16.7
110	3.4	1.0	5.3	6.1	7.7	8.7	10.0	11.2	12.3	13.8	14.9	16.6	18.4	20.5
125	3.8	1.4	6.0	6.8	8.8	9.9	11.4	12.8	13.9	15.5	16.9	18.8	20.9	23.2
140	4.3	5.0	6.7	7.6	9.8	11.0	12.8	14.3	15.6	17.4	19.0	21.1	23.4	26.0
160	4.9	5.6	7.7	8.7	11.2	12.6	14.6	16.3	17.8	19.8	21.7	24.1	26.7	29.6
180	5.5	6.3	8.6	9.7	12.6	14.1	16.4	18.3	20.0	22.2	24.1	27.1	30.1	33.2
200	6.1	7.0	9.6	10.8	14.0	15.6	18.2	20.3	22.3	24.8	27.1	30.1	33.4	37.0
225	6.9	7.8	10.8	12.1	15.7	17.5	20.5	22.8	25.0	27.7	30.5	33.8	37.8	41.5
250	7.6	8.6	12.0	13.4	17.5	19.5	22.8	25.3	28.7	30.8	33.8	37.4	41.7	46.1
280	8.5	9.6	13.4	15.0	19.6	21.8	25.5	28.3	31.2	34.6	37.9	41.9	46.7	51.6
315	9.6	10.8	15.0	16.7	22.7	24.4	28.7	31.8	35.0	38.7	42.6	47.1	52.5	58.0
355	10.8	12.1	17.0	18.9	24.8	27.5	32.3	35.8	39.5	43.7	48.0	53.0	59.2	65.4
400	12.2	14.3	19.1	22.2	28.0	32.4	36.4	42.1	44.5	51.4	54.1	62.5	-	-
450	13.7	16.0	21.5	25.0	31.4	36.4	41.0	47.4	50.5	57.7	-	-	-	-



HDPE Pipe for Sewerage, Conforming to IS-14333

DIMENSIONS OF HDPE PIPE - PE 100 (IS-14333)										
Dia. DN.	PN 6		PN 8		PN 10		PN 12.5		PN 16	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
63	3.6	4.2	4.7	5.4	5.8	6.6	7.0	7.9	8.7	9.8
75	4.3	5.0	5.6	6.4	6.9	7.8	8.4	9.5	10.4	11.7
90	5.1	5.9	6.7	7.6	8.2	9.3	10.0	11.2	12.5	14.0
110	6.3	7.2	8.2	9.3	10.0	11.2	12.3	13.8	15.2	17.0
125	7.1	8.1	9.3	10.5	11.4	12.8	13.9	15.5	17.3	19.3
140	8.0	9.0	10.4	11.7	12.8	14.3	15.6	17.4	19.4	21.6
160	9.1	10.3	11.9	13.3	14.6	16.3	17.8	19.8	22.1	24.6
180	10.2	11.5	13.4	15.0	16.4	18.3	20.0	22.2	24.9	27.6
200	11.4	12.8	14.9	16.0	18.2	20.3	22.3	24.8	27.6	30.6
225	12.8	14.3	16.7	18.6	20.5	22.8	25.0	27.7	31.4	34.5
250	14.2	15.9	18.6	20.7	22.8	25.3	27.8	30.8	34.5	38.2
280	15.9	17.7	20.8	23.1	25.5	28.3	31.2	34.6	38.7	42.8
315	17.9	19.9	23.4	26.0	28.7	31.8	35.0	38.7	43.5	48.1
355	20.1	22.4	26.3	29.2	32.3	35.8	39.5	43.7	49.0	54.1
400	22.7	26.4	29.7	34.4	36.4	42.1	44.5	51.4	55.2	63.7
450	25.5	29.6	33.4	38.7	41.0	47.4	50.0	57.7	-	-

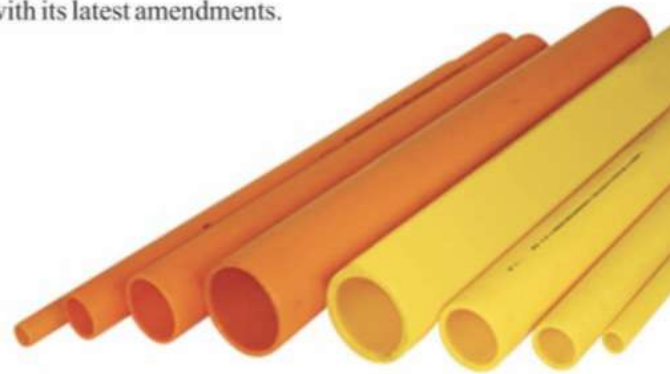


PE PIPE FOR GASEOUS FUELS (MDPE PIPE)

CONSTRUCTION : Brand MDPE Pipes & Coils are being manufacture by Polyethylene Compound in grade PE-80 (Yellow) & PE-100 (Orange) Conforming to IS 14885-2001 with its latest amendments.

SIZE RANGE :

- Size Range from DN 20mm to DN 125mm,
- Pressure Class SDR-9, SDR-11, SDR-13.6 and SDR-17.6.
- PE Grades PE-80 (Yellow) & PE-100 (Orange)
- Length of material : The material shall be supplied in both Straight length or Coils



CHARACTERISTIC OF THE PE COMPOUND :

Sl. no	Characteristics	Unit	Requirements	Test Parameters	Test Method
1.	Conventional Diameter	Kg/m ³	≥ 928.40 (base Polymer) ≥ 930 (base Polymer)	23°C 27°C	IS : 7328:2000
2.	Melt Flow	g/10 min	± 20 percent of Value nominated by compound producer	190°C / 5.0 kg	IS:2530:1963
3.	Thermal Stability	Min	≥ 20	200°C	Annex D of IS: 14885-2001
4	Resistance to gas constituent	h	≥ 20	80°C	Clause 5.5 of IS: 14885-2001
5.	Pigment Dispersion	Grade	≤ 3	-	Annex E of IS: 14885-2001

FEATURES

- Flexibility : Easy to handle.
- Corrosion Resistance : Tough and highly reliable in aggressive soils.
- Fusion Joined : High Integrity and reliability
- Light Weight : Weighs lesser as compared to the metallic pipes.
- Crack Resistance : Excellent resistance subsidence, traffic vibrations, point loading and marshy ground.
- Homogenous : Joints are free from leaks
- UV Stability : Adequate resistance to UV rays
- Installation : Low installation cost.
- Earthquake resistance
- Very low permeable for gases.
- Highly reliable in most soil types.
- No deposition, encrustation and reaching out.
- Longer life.

DIMENSION : MDPE Pipe Conforming to IS-14885:2001 (Wall Thickness)

S. No.	Nominal Outside Diameter (in mm)	Minimum Wall Thickness (in mm)			
		SDR-17.6	SDR-13.6	SDR-11.0	SDR-9
1	16	2.3	2.3	3.0	3.0
2	20	2.3	2.3	3.0	3.0
3	25	2.3	2.3	3.0	3.0
4	32	2.3	2.3	3.0	3.6
5	40	2.3	3.0	3.7	4.5
6	50	2.9	3.7	4.6	5.6
7	63	3.6	4.7	5.8	7.1
8	75	4.3	5.5	6.8	8.4
9	90	5.2	6.6	8.2	10.1
10	110	6.3	8.1	10.0	12.3
11	125	7.1	9.2	11.4	14.0
12	140	8.0	10.3	12.7	15.7
13	160	9.1	11.8	14.6	17.9
14	180	10.3	13.3	16.4	20.1
15	200	11.4	14.7	18.2	22.4
16	225	12.8	16.6	20.5	25.1
17	250	14.2	18.4	22.7	27.9

APPLICATIONS:

1. Polyethylene Piping systems are the most preferred means of transportation and distribution of Natural Gas Worldwide. Poly Ethylene pipes are used all over the world for natural gas distribution at 4 Bar Pressure, due to their excellent technical and operational advantages.
2. Industrial gases Distribution.
3. Landfill & Leachate gas Extraction and conveyance.



MDPE PIPES FOR WATER SUPPLY

ISO:4427-1, 2 & 3 : 2019

MATERIAL :

ISO 4427, the system standard, specifies the requirements for a piping system and its components when made from polythylene (PE). The piping system is intended to be used for water supply intended for human consumption, including the conveyance of raw water prior to treatment and that of water for general purposes.

COLOR :

- The pipes shall be either blue or black, or black with blue stripes. Blue pipes or black with blue stripes are intended for drinking water only.
- For above-ground installations, all blue components and components with non-black layers should be protected from direct UV light.
- Blue MDPE is used below ground drinking water supplies under BS EN 12201. For distributing water above ground use black HDPE.



CHARACTERISTICS : PE Compound as Granules

Characteristic	Requirement	Parameter	Value	Test Method
Compound density	$\geq 930 \text{ kg/m}^3$	Test temperature & Number of sample	23 °C & According to ISO 1183-2	ISO 1183-2
Carbon black content (black compound only)	(2 to 2.5) % by mass	In accordance with ISO 6964		ISO 6964
Carbon black dispersion (black compound only)	\leq grade 3	In accordance with ISO 18553		ISO 18553
Pigment dispersion (blue compound only)	\leq grade 3	In accordance with ISO 18553		ISO 18553
Water content	$\leq 300 \text{ mg /kg}$	Number of test pieces	1	ISO 15512
Volatile content	$\leq 350 \text{ mg/kg}$	Number of test pieces	1	EN 12099
Oxidation induction time	$\geq 20 \text{ min}$	Test temperature & Number of test pieces	200 °C & 3 Samples	ISO 11357-6
Melt mass-flow rate (MFR) for PE 63, PE 80 and PE 100	0.2 to 1.4 g/10 min Maximum deviation of ± 20 % of the nominated value	Load	5 kg	ISO 1133:2005, Condition T
		Test temperature	190 °C	
		Time	10 min	
		Number of test pieces	According to ISO 1133	

DIMENSION : WALL THICKNESS

GRADE	SDR 6		SDR 7.4		SDR 9		SDR 11		SDR 13.6		SDR 17	
	S-2.5		S-3.2		S-4		S-5		S-6.3		S-8	
Nominal Pressure (PN)												
PE 63	-		-		-		PN 10		PN 8		-	
PE 80	PN 25		PN 20		PN 16		PN 12.5		PN 10		PN 8	
PE 100	-		PN 25		PN 20		PN 16		PN 12.5		PN 10	
Nominal Size	Wall Thickness (in mm)											
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
16 MM	3.0	3.4	2.3	2.7	2.0	2.3	-	-	-	-	-	-
20 MM	3.4	3.9	3.0	3.4	2.3	2.7	2.0	2.3	-	-	-	-
25 MM	4.2	4.8	3.5	4.0	3.0	3.4	2.3	2.7	2.0	2.3	-	-
32 MM	5.4	6.1	4.4	5.0	3.6	4.1	3.0	3.4	2.4	2.8	2.0	2.3
40 MM	6.7	7.5	5.5	6.2	4.5	5.1	3.7	4.2	3.0	3.5	2.4	2.8
50 MM	8.3	9.3	6.9	7.7	5.6	6.3	4.6	5.2	3.7	4.2	3.0	3.4
63 MM	10.5	11.7	8.6	9.6	7.1	8.0	5.8	6.5	4.7	5.3	3.8	4.3
75 MM	12.5	13.9	10.3	11.5	8.4	9.4	6.8	7.6	5.6	6.3	4.5	5.1

LENGTH :

- No requirements have been set concerning particular lengths of coiled or straight pipe or the tolerance thereon, hence, it is necessary for lengths of pipe to be supplied by agreement between purchaser and manufacturer.
- The minimum internal diameter of the coil shall be not less than 18dn
- This lightweight pipe is available in coils of 25m, 50m, 100m, 150m, 200m, 300m, 500 Mtr etc for ease of use and comes in sizes ranging from 20-75mm

Effect on water quality of pipes intended for conveyance of water for human consumption :

When used under the conditions for which they are designed, materials in contact with or likely to come into contact with, drinking water shall not constitute a toxic hazard, shall not support micribuak growth, and shall not give rise to an unpleasant taste or odor ot cloudiness or to discloration of the water.

It is also inert and so has a good resistance to a wide range of naturally occurring ground chemicals and doesn't support the microbiological growth of algac, bacteria or fungi in normal operating conditions.

APPLICATIONS :

1. Appropriate for Drinking Water.
2. Industrial needs.
3. Private Colonies.
4. Lodging Societies.
5. Water Boards.



IRRIGATION EQUIPMENT-QUICK COUPLED PE PIPES & FITTINGS FOR SPRINKLER IRRIGATION SYSTEM

IS-17425:2020

Agronomists all over the world believe that the sprinkler irrigation system is the best method to get maximum yield at an extremely low cost. Using sprinkler system can irrigate 2 to 3 time more farm land with same quantity of water. The sprinkler system cleans the surface of the plants, which help in easy photosynthesis thus making plants able to produce more. It save from irregularities of the weather. In winters it saves from freezing of water. In summers it saves evaporation of water up to 40 %. The Sprinkler effect (like rain)saves water from flowing away and maximum water reaches to the roots of the plants. It spreads water around the farm in equal quantity thus saving plants from bad effects of water clogging and water scarcity. With Sprinkler Irrigation System farming can be done easily on uneven surfaces.

CONSTRUCTION :

HDPE High Density Polyethylene is the most popular variety of polymers. Ambika sprinkler pipe is made of HDPE plastic material. It is the recommended material for the manufacture of high pressure pipes and is renowned world wide for its reliability. The characteristics that makes it outstanding are its toughness, its resistance to chemical attack and its immunity to weather conditions. This makes it an excellent material to convey water.

SIZE RANGE :

- Size Range from 63 mm to 200 mm OD
- Pressure Class from PN-2.5, PN-3.2, PN-4.0 & PN-6.0 with complete range of fittings
- PE Grades : PE-63 & PE-80



PROPERTIES:

Properties	Value
M.F.I (190°C, 5kg load)	0.20 to 1.1gm/10 mins
Specified base density	940.0 kg/m ³ to 958.0 kg/m ³
Material Grade	PE-63, PE-80
Carbon Black	(2.5 ± 0.5%)
Reversion	<=3%
Hydraulic Characteristics	No sign of localized swelling, leakage or weeping (at 80°C for 165 & 48 hrs.)

DIMENSIONS OF POLYETHYLENE PIPES FOR SPRINKLER IRRIGATION (All sizes in mm) : as per IS-17425:2020 with latest amendments.

Nominal Diameter	Outside Diameter	Nominal Tolerance on outside diameter	Ovality	Wall Thickness							
				Class-1 (2.5 kgf/cm ²)		Class-2 (3.2 kgf/cm ²)		Class-3 (4 kgf/cm ²)		Class-4 (6 kgf/cm ²)	
				Min	Max	Min	Max	Min	Max	Min	Max
40	40.0	+0.4	1.4	-	-	-	-	-	-	2.3	2.8
50	50.0	+0.5	1.4	-	-	-	-	2.0	2.4	2.9	3.4
63	63.0	+0.6	1.5	-	-	2.0	2.4	2.5	2.9	3.8	4.4
75	75.0	+0.7	1.6	2.0	2.4	2.5	2.9	3.0	3.4	4.5	5.2
90	90.0	+0.8	1.8	2.2	2.6	2.9	3.4	3.5	4.1	5.3	6.1
110	110.0	+1.0	2.2	2.7	3.2	3.4	3.9	4.2	4.8	6.5	7.4
125	125.0	+1.2	2.5	3.1	3.6	3.8	4.5	4.8	5.5	7.4	8.3
140	140.0	+1.3	2.8	3.5	4.1	4.3	5.0	5.4	6.1	8.3	9.3
160	160.0	+1.5	3.2	3.9	4.5	4.9	5.6	6.2	7.0	9.4	10.6
180	180.0	+1.7	3.6	4.4	5.0	5.5	6.3	6.9	7.8	10.6	11.9
200	200.0	+1.8	4.0	4.9	5.6	6.1	7.0	7.7	8.7	11.8	13.2



ACCESSORIES:

1. Quick Coupled Bend
2. Quick Coupled Tee
3. Pump Connecting Nipple (P.C.N.)
4. Quick Coupled End Cap
5. Foot Batten Assembly with Adopter
6. Riser Pipe
7. Sprinkler Nozzle
8. Sprinkler Pipe



4



1



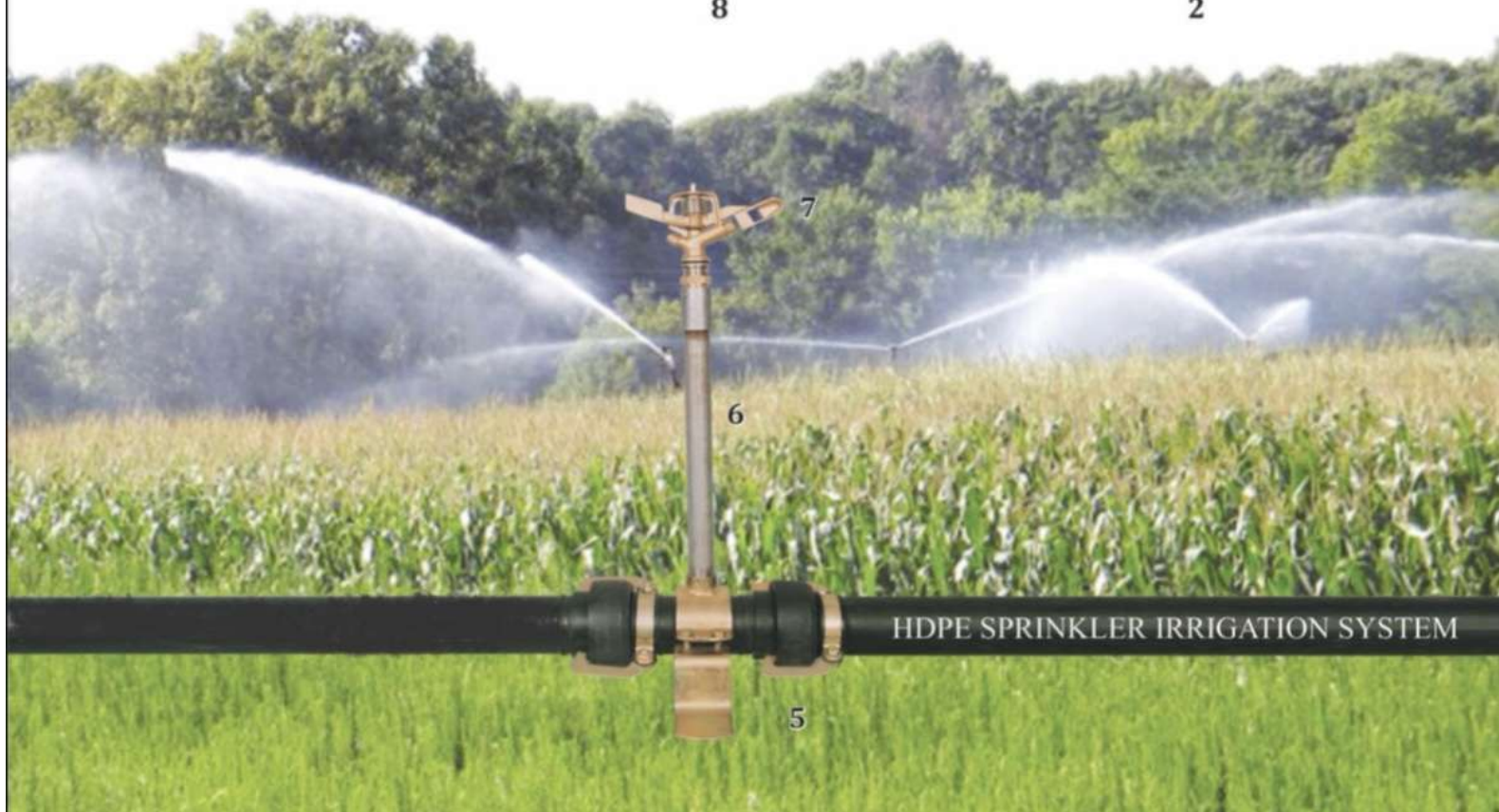
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HDPE SPRINKLER IRRIGATION SYSTEM

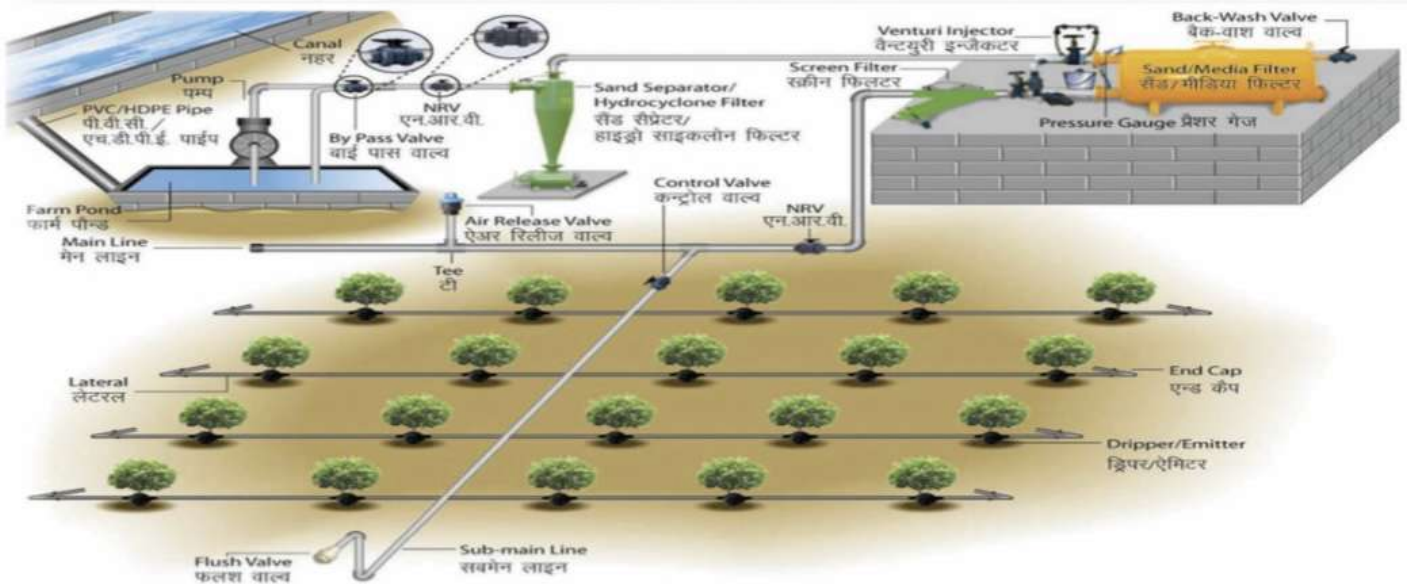
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DRIP IRRIGATION SYSTEM

Drip irrigation or trickle irrigation is a type of Micro irrigation system that has the potential to save water, save money and nutrients by allowing water to drip slowly to the roots of plants, either from above the soil surface or buried below the surface. The goal is to place water directly into the root zone to minimize evaporation. Drip irrigation system distribute water through a network of Valves, Pipes, Tubing, Lateral and Emitters without any losses.

Drip Irrigation system delivers water to the crop using a network of mainlines, Sub-mains and Lateral lines with emission points spaced along, their lengths. Each Dripper / Emitter, supplies a Measured, Precisely Controlled uniform application of water, nutrients, and other required growth substances directly into the root zone of the plant. Its ability to achieve optimum growth and high yield.



Layout of Drip Irrigation System (ड्रिप सिंचाई पद्धति का रेखाचित्र)

APPLICATIONS

Horticultural Crops	Apple, Grapes, Orange, Lemon, Banana, Guava, Mulberry, Date, Pomegranate, Coconut, Jujube, Mango, Papaya, Pineapple etc.
Cash Crops	Cotton, Sugarcane, Maize, Groundnut, Rose, Tuberose, Tea & Coffee etc.
Vegetable Crops	Chilli, Tomato, Capsicum, Brinjal, Cucumber, Gourd, Pumpkin, Cauliflower, Cabbage, Cucumber, Radish, Carrot, Arbi, Okra, Potato, Garlic & Onion etc.

ADVANTAGES OF DRIP IRRIGATION SYSTEM

- Saves water up to 80% compare to flood irrigation.
- Increase in yield up to 230%
- Fertilizer and nutrient loss is minimized up to 50%
- More land can be irrigated with the less water
- Moisture within the root zone can be maintained at field capacity
- Soil erosion and weed growth are reduced
- Distribution of water is highly uniform
- Labour cost is less compared to flood irrigation
- Crop grows Consistently, Healthier and matures fast.
- Crop yield is maximum
- Energy Saving
- Early maturity results in higher and faster returns on investment.
- Undulating terrains, Saline, Water logged, Sandy & Hilly lands can also be brought under productive cultivation.
- Coast of fertilizers, inter-culturing and Labour use gets reduced.
- Fertilizer and Chemical Treatment can be given through Micro Irrigation system itself.
- Water application efficiency is high.
- Fertilizers can be used with high efficiency.
- Seed germination is improved.
- We can use recycled water safely.
- it is not necessary to level the fields.



DRIP IRRIGATION SYSTEM

Plastic & Pipe Industries includes Emitting Pipes system for better irrigation of plants at very low cost with scare of water. Emitting Pipes Confirms the **Bureau of Indian Standards IS-13488:2008**. This is an integral Piping system (In-Built) in which the Emitters / Drippers are inserted in the Lateral During extrusion process at precise interval.

EMITTING PIPE SYSTEM

TECHNICAL PARAMETER

IS 13488 : 2008

Nominal Diameter (MM)	Inside Diameter (MM)	Tolerance on Inside Diameter (MM)	Wall Thickness (MM)											
			Class - I (0.100 MPa)			Class - II (0.125MPa)			Class - III (0.250MPa)			Class - IV (0.400MPa)		
			Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
12	10.5	0.2	0.4	0.5	0.45	0.6	0.7	0.65	0.8	1.0	0.90	1.1	1.3	1.20
16	14.2	0.2	0.5	0.6	0.55	0.7	0.9	0.80	1.0	1.2	1.10	1.3	1.5	1.40
20	18	0.2	0.7	0.8	0.75	0.9	1.1	1.00	1.2	1.4	1.30	1.5	1.7	1.60

Available Range	12mm To 20mm
Dripper Spacing	300mm To 600mm
Class	I, II, III & IV
Pressure Range	1 To 4 Kgf / cm ²



IRRIGATION LATERAL

IS-12786:1989

AMBIKA Irrigation Lateral as Per IS-12786:1989 are used a Lateral in Micro irrigation (Drip & Mini Sprinkler) System. Irrigation Lateral are small Diameter flexible pipes or Tubing made of low density Polyethylene (LDPE) or Liner low density polyethylene (LLDPE) under strict quality control system.

TECHNICAL PARAMETER

Outside Diameter (MM)	Tolerance On Outside Diameter (MM)	Wall Thickness (MM)								
		Class - I (0.25 MPa)			Class - II (0.40MPa)			Class - III (0.6MPa)		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
12	0.3	1.0	1.2	1.1	1.1	1.3	1.2	1.4	1.6	1.5
16	0.3	1.2	1.4	1.3	1.4	1.6	1.5	1.8	2.0	1.9
20	0.3	1.3	1.5	1.4	1.5	1.7	1.6	2.3	2.5	2.4
25	0.3	1.4	1.8	1.6	1.9	2.3	2.1	2.8	3.3	3.05
32	0.3	1.6	2.1	1.85	2.4	2.9	2.65	3.6	4.2	3.9



Available Range	12mm To 32mm
Class	I, II, III

EMITTERS / DRIPPER

Emitters / Drippers are used for online Drip irrigation System in orchard crop. Drippers are made by a good quality material, which suits the difficult Soil conditions and fulfil the crop requirement.

Application : - Online Drippers are used in orchard and wide spacing crops.

Range	2, 4 & 8 LPH
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FILTRATION SYSTEM

It is heart of drip irrigation. A filter unit cleans the suspended impurities in the irrigation water so as to prevent blockage of holes and passage of drip nozzles. The type of filtration needed depends on water quality and emitter type.

A. Media Filter (Gravel / Sand Media Filter) IS-14606:1998 - These filters are effective against inorganic suspended solids, biological substances and other organic materials. This type of filter is essential for open reservoir, when algae growth take place. The dirt is stopped and accumulated inside the media in the filter. Gravel filter consist of small basalt gravel or sand (Usually 1-2mm Dia) Placed in cylindrical tank, made of metal. Water enters from the top and flows through the gravel while leaving the dirt in the filter. The clean water is discharge at the bottom.

The flow rate of the filters may be 10 m³ / hr - 50 m³ / hr and the tank diameter may range from 10-50cm depending on the capacity of the System.

B- Hydro Cyclone filter IS-14743:1999 - Hydro Cyclone filters are mainly used for the removal of suspended solid elements in the irrigation water. They are an ideal solution when sand is present in the water.

Available flow rate of the filters may be 10 m³ / hr - 50 m³ / hr with 1" to 3"

C. Strainer Type Filter IS-12785:1994 (Disc / Screen Filter) The filtration elements are grooved plastic disc, which are piled together around a telescopic core, according to the desired degree of filtration. The water passes through the filter from the outside to the inside. The grooves inside the disc allow the adhesion of fine particles, mainly organic matter.

Screen Filter - The screens are usually cylindrical shape and are made of Non-Corrosive metal or plastic material.

Available flow rate of the filters may be 10 m³ / hr - 50 m³ / hr with 1" 3" connection



MEDIA FILTER



HYDRO CYCLONE FILTER



DISC FILTER SCREEN FILTER



FERTILIZER & CHEMICAL INJECTION SYSTEM

IS: 14483 PART-1 :1997 - Venturi Injector - Venturi tubes are commonly employed for Fertigation purposes in Micro irrigation system. Venturi used as injectors rely on the Venturi pressure drop principle to draw chemicals from a stock tank into the irrigation pipeline. Proper Fertigation may also save fertilizers and reduce water usage by directly delivering water and nutrient near to crop roots, which boost economic and energy profitability to farmers.



AVAILABLE SIZE ¾" TO 2"

VENTURY INJECTOR

Fertilizer Tank - Fertilizer and Chemical injection through drip and sprinkler irrigation systems. Turbulent inlet ensures thorough mixing of chemicals and / or fertilizers. Separate Valves are provided on the inlet & outlet to control the injection rate. Maximum working pressure 10 kg / cm²



AVAILABLE SIZES :- 30 LTR. TO 90 LTR.

FERTILIZER TANK

Valves : - These are used to control the flow through particular pipes. Generally, they are installed on filtration system, Header Assembly mainline and on all Sub-Main lines like Air Release Valve, Non Return Valve, Vacuum Breaker, Control Valve & Flush Valve etc.



VALVES

Accessories : - Different type's Fittings are used to connect the main line to sub main line & Lateral line.

Poly Fittings : - Grommate, Take off, End Cap, Joiner, Tee, Elbow.



AVAILABLE SIZE : - 12MM TO 20MM.

ACCESSORIES

Push / Compression Fittings : - Elbow, Tee, MTA/FTA, Joiner, End Cap etc.



AVAILABLE SIZE : - 25MM & 32MM

PUSH / COMPRESSION FITTINGS

