

**Edoburg**<sup>®</sup>



# HDPE Piping System

ENGINEERED FOR DURABILITY

PRODUCT CATALOGUE



**Edoburg**<sup>®</sup>  
PIPING SYSTEMS



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# About Edoburg

**Edoburg**, an ISO 9001 certified company, specialises in supplying high-quality piping systems that consistently meet stringent international standards, ensuring unparalleled performance of the piping systems. Our experienced team, equipped with extensive technical knowledge, coupled with our efficient operations and fast turnaround time, enables us to provide top-tier supply of piping products tailored to your needs.

## Our Mission

Edoburg's mission is to supply high-quality piping systems worldwide, offering a complete solution that meets international standards to ensure superior performance in every project.

## Product Range

Our stellar lineup of pipes, ready for every project:

- PEX Pipe: PEX-A, PEX-B, PEX-A EVOH, PEX-B EVOH
- PPR Pipe
- PERT Pipe
- HDPE Pipe
- MDPE Pipe
- PVC-C Pipe: Portable water, Reclaim water, Industrial
- PVC-U Pipe: Drainage, Portable water, Reclaim water, Industrial
- PVC-O
- Composite Pipe: PEX-AL-PEX, HDPE-AL-HDPE
- PVC Electrical Conduit
- PVC Hose

## Complete Solution Concept

Our wide range of products represent our complete solution concept.

With our products intended for diverse sectors, we offer individual and comprehensive system solutions. Focusing on the needs of projects and entire system.

We provide high standards of products in the market at all times. We always stand by our piping systems and reliable service network.

As a global pipe supplying company that stands out with successful operations ever since our incorporation, we act as a solution point to meet all your needs based on our technical knowledge, specialization and reliability.

## Quality Assurance

We are committed to excellence in every aspect of our operations. The products we supply comply with the international standards and certifications, ensuring reliability, durability, and safety in every application. With Edoburg, you can trust that you're receiving top-notch piping solutions that meet your specifications and exceed your expectations.

## Our Presence in the World

Our warehousing are strategically located in various places in **India**, **Vietnam** and **China**, to ensure efficient distribution of the products. We ensure fast deliveries with our modern logistics partners deployed at our local distribution hubs which are strategically located near the ports to ease the export of products. Edoburg Piping Systems exports its products all over the world.

## Our Market Segments

Based on our experience and high-quality standard of products in the sector, Edoburg Piping Systems supports its clients with a complete piping solutions for every project requirement.

- Chemical and Petrochemical
- Water and Wastewater
- Mining and Mineral Processing
- Power Generation
- Marine and Offshore
- Building and Construction
- Manufacturing Industries
- Agriculture
- Pharmaceuticals
- Infrastructure



# About Plastics

Plastics are polymers created by the chemical conversion of natural products or synthesized from organic materials. The primary components that make up the building blocks of plastics are long chains of carbon (C) and hydrogen (H) known as monomers.

The raw materials used for the production of plastics are natural compounds such as cellulose, coal, oil and natural gas. In the plastics industry, around 6 % of the petroleum products that come out from refineries is used.

Plastics fall into three main categories on the basis of their internal structure and the resulting mechanical characteristics: thermoplastics, thermosetting plastics and elastomers.

## Advantages of Plastics

Thermoplastics obviously demonstrate different characteristics than those of the metals traditionally used for piping.

Metal	Plastic
<b>High density</b> <ul style="list-style-type: none"> <li>Crane is needed for transport.</li> <li>Requires wide spacing for fixings.</li> <li>High anchoring forces, fixing required.</li> </ul>	<b>Low density</b> <ul style="list-style-type: none"> <li>Can be carried by hand up to d110.</li> <li>Requires minimal spacing for fixings.</li> <li>Simple and economical.</li> </ul>
<b>Thermal conductivity</b> <ul style="list-style-type: none"> <li>Insulation is needed to limit heat loss.</li> <li>Formation may result in corrosion.</li> </ul>	<b>Low thermal conductivity</b> <ul style="list-style-type: none"> <li>Limited heat loss.</li> <li>Low levels of condensation and resistance to corrosion.</li> </ul>
<b>Corrosion Behaviors</b> <ul style="list-style-type: none"> <li>Galvanic corrosion can occur.</li> <li>Corrosion reduces internal diameter.</li> <li>Reduced diameter causes pressure losses.</li> </ul>	<b>High Corrosion Resistance</b> <ul style="list-style-type: none"> <li>Galvanic Corrosion Free.</li> <li>Prevents corrosion and diameter reduction.</li> <li>No pressure losses.</li> </ul>
<b>Chemical resistance</b> <ul style="list-style-type: none"> <li>Low Resistance to Acids.</li> <li>Damage from Incrustation.</li> </ul>	<b>High chemical resistance</b> <ul style="list-style-type: none"> <li>A minimum of 25-years of life with correct jointing methods.</li> <li>Incrustation free.</li> </ul>

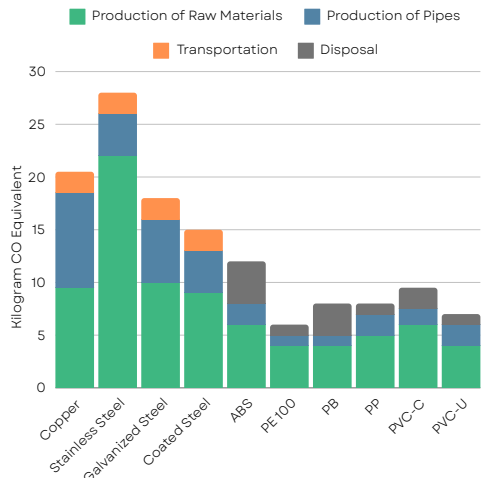
Thermoplastics in turn can be split into two main categories as partially-regulated (semi-crystalline) and irregular (amorphous) molecular structures.

- Semicrystalline thermoplastics, which have a partially ordered molecular structure: this category includes the polyolefins (polypropylene, polyethylene, polybutylene) and fluoropolymers (PP, PE, etc.)
- Amorphous thermoplastics, which have no crystalline regions and no packed molecular structure: this category includes the vinyl chlorides (PVC-U, PVC-C, etc.) and styrenes (ABS, polystyrene, etc.)

Semicrystalline materials are more suitable for hot welding, while amorphous thermoplastics are ideal for cementing or cold welding (solvent cementing).

## Carbon Footprint of Plastics Vs Metal

It is the total of all greenhouse gases emitted to the atmosphere during the entire lifetime including the processes for extracting a product having carbon footprint from under the ground, refining, producing, using and disposing of that product.





# HDPE Piping System

High-Density Polyethylene (HDPE) is a versatile and widely used plastic piping system material, ideal for applications in water supply, gas distribution, sewage and drainage systems, and industrial processes.

HDPE pipes are known for their remarkable durability and resistance to a variety of environmental conditions and chemicals, making them a preferred choice in many industries. Their high impact strength and flexibility allow them to withstand harsh conditions, including pressure fluctuations and extreme temperatures.

- Tough, durable, and highly resistant to impact and pressure.
- Free from weaknesses caused by rust, corrosion, weathering, and chemical exposure.
- High resistance to a wide range of chemicals, including acids, bases, and salts.
- Lightweight and flexible, making it easy to handle and install.
- Non-toxic and suitable for potable water applications, ensuring safe drinking water.
- Smooth inner surface ensures high flow rates and minimal frictional losses.
- Heat fusion joining creates a leak-proof and reliable piping system.
- Excellent resistance to abrasives, making it ideal for transporting various fluids and slurries.

## Fields of Application

- Water Supply Systems
- Sewage and Drainage
- Irrigation
- Industrial Applications
- Mining
- Marine
- Firefighting Systems
- Telecommunication and Electrical
- Renewable Energy
- Infrastructure

## Technical data

### Working Temperature

- -40°C - 50°C (-40°F - 122°F)

### Pipe Standard

- ASTM D 3035
- DIN 8074-99
- IS 4984
- BS EN 13244

# HDPE Pipe Range

Pipe as per DIN 8074

HSN Code: 39172110

OD		PN 25		PN 20		PN 16		PN 12.5		PN 10.5		PN 10		PN 8.3	
Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
32	32.3	-	-	-	-	-	-	-	-	-	-	-	-	1.8	2.2
40	40.4	-	-	-	-	-	-	1.8	2.2	1.9	2.3	1.9	2.3	2.3	2.8
50	50.5	-	-	-	-	1.8	2.2	2.0	2.4	2.3	2.8	2.4	2.9	2.9	3.4
63	63.6	-	-	1.8	2.2	2.0	2.4	2.5	3.0	2.9	3.4	3.0	3.5	3.6	4.1
75	75.7	1.8	2.2	1.9	2.3	2.3	2.8	2.9	3.4	3.5	4.1	3.6	4.2	4.3	5.0
90	90.9	1.8	2.2	2.2	2.7	2.8	3.3	3.5	4.1	4.1	4.8	4.3	5.0	5.1	5.9
110	111.0	2.2	2.7	2.7	3.2	3.4	4.0	4.2	4.9	5.0	5.7	5.3	6.1	6.3	7.2
125	126.2	2.5	3.0	3.1	3.7	3.9	4.5	4.8	5.5	5.7	6.5	6.0	6.8	7.1	8.1
140	141.3	2.8	3.3	3.5	4.1	4.3	5.0	5.4	6.2	6.4	7.3	6.7	7.6	8.0	9.0
160	161.5	3.2	3.8	4.0	4.6	4.9	5.6	6.2	7.1	7.3	8.3	7.7	8.7	9.1	10.3
180	181.7	3.6	4.2	4.4	5.1	5.5	6.3	6.9	7.8	8.2	9.3	8.6	9.7	10.2	11.5
200	201.8	3.9	4.5	4.9	5.6	6.2	7.1	7.7	8.7	9.1	10.3	9.6	10.8	11.4	12.8
225	227.1	4.4	5.1	5.5	6.3	6.9	7.8	8.6	9.7	10.3	11.6	10.8	12.1	12.8	14.3
250	252.3	4.9	5.6	6.2	7.1	7.7	8.7	9.6	10.8	11.4	12.8	11.9	13.3	14.2	15.9
280	282.6	5.5	6.3	6.9	7.8	8.6	9.7	10.7	12.0	12.8	14.3	13.4	15.0	15.9	17.7
315	317.9	6.2	7.1	7.7	8.7	9.7	10.9	12.1	13.6	14.4	16.1	15.0	16.7	17.9	19.9
355	358.2	7.0	7.9	8.7	9.8	10.9	12.2	13.6	15.2	16.2	18.1	16.9	18.8	20.1	22.4
400	403.6	7.9	8.9	9.8	11.0	12.3	13.8	15.3	17.1	18.2	20.3	19.1	21.3	22.7	25.2
450	453.8	8.8	9.9	11.0	12.3	13.8	15.4	17.2	19.2	20.5	22.8	21.5	23.9	25.5	28.3
500	504.0	9.8	11.0	12.3	13.8	15.3	17.1	19.1	21.3	22.8	25.3	23.9	26.5	28.4	31.5
560	564.3	11.0	12.3	13.7	15.3	17.2	19.2	21.4	23.8	25.5	28.3	26.7	29.6	31.7	35.1
630	634.6	12.3	13.7	15.4	17.2	19.3	21.5	24.1	26.8	28.7	31.8	30.0	33.2	35.7	39.5
710	714.9	13.9	15.5	17.4	19.4	21.8	24.2	27.2	30.2	32.3	35.8	33.9	37.5	40.2	44.5
800	805.0	15.7	17.5	19.6	21.8	24.5	27.2	30.6	33.9	36.4	40.3	38.1	42.2	45.3	50.1
900	905.0	17.6	19.6	22.0	24.4	27.6	30.6	34.4	38.1	41.0	45.3	42.9	47.4	51.0	56.3
1000	1005.0	19.6	21.8	24.5	27.2	30.6	33.9	38.2	42.3	45.5	50.3	47.7	52.7	56.7	62.6
1200	1208.5	23.5	26.1	29.4	32.6	36.7	40.6	45.9	50.7	54.6	60.3	57.2	63.2	68.0	75.0
1400	1408.5	27.4	30.4	34.4	38.1	42.9	47.4	53.5	59.1	63.7	70.3	66.7	73.6	-	-
1600	1608.5	31.3	34.7	39.2	43.4	49.0	48.0	61.2	67.6	-	-	-	-	-	-

All dimensions are in mm.

OD		PN 8		PN 6.3		PN 5		PN 4		PN 3.2		PN 2.5		PN 2	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
10	10.3	-	-	-	-	-	-	-	-	-	-	1.8	2.2	2.0	2.4
12	12.3	-	-	-	-	-	-	-	-	1.8	2.2	2.0	2.4	2.4	2.9
16	16.3	-	-	-	-	-	-	1.8	2.2	2.2	2.7	2.7	3.2	3.3	3.9
20	20.3	-	-	1.8	2.2	1.9	2.3	2.3	2.8	2.8	3.3	3.4	4.0	4.1	4.8
25	25.3	1.8	2.2	1.9	2.3	2.3	2.8	2.8	3.3	3.5	4.1	4.2	4.9	5.1	5.9
32	32.3	1.9	2.3	2.4	2.9	2.9	3.4	3.6	4.2	4.4	5.1	5.4	6.2	6.5	7.4
40	40.4	2.4	2.9	3.0	3.5	3.7	4.3	4.5	5.2	5.5	6.3	6.7	7.6	8.1	9.2
50	50.5	3.0	3.0	3.7	4.3	4.6	5.3	5.6	6.4	6.9	7.8	8.3	9.4	10.1	11.4
63	63.6	3.8	4.4	4.7	5.4	5.8	6.6	7.1	8.1	8.6	9.7	10.5	11.8	12.7	14.2
75	75.7	4.5	5.2	5.6	6.4	6.8	7.7	8.4	9.5	10.3	11.6	12.5	14.0	15.1	16.9
90	90.9	5.4	6.2	6.7	7.6	8.2	9.3	10.1	11.4	12.3	13.8	15.0	16.7	18.1	20.2
110	111.0	6.6	7.5	8.1	9.2	10.0	11.2	12.3	13.8	15.1	16.9	18.3	20.4	22.1	24.6
125	126.2	7.4	8.4	9.2	10.4	11.4	12.8	14.0	15.6	17.1	19.1	20.8	23.1	25.1	27.9
140	141.3	8.3	9.4	10.3	11.6	12.7	14.2	15.7	17.5	19.2	21.4	23.3	25.9	28.1	31.2
160	161.5	9.5	10.7	11.8	13.2	14.6	16.3	17.9	19.9	21.9	24.3	26.6	29.5	32.1	35.6
180	181.7	10.7	12.0	13.3	14.9	16.4	18.3	20.1	22.4	24.6	27.3	29.9	33.1	36.1	40.0
200	201.8	11.9	13.3	14.7	16.4	18.2	20.3	22.4	24.9	27.4	30.4	33.2	36.8	40.1	44.4
225	227.1	13.4	15.0	16.6	18.5	20.5	22.8	25.2	28.0	30.8	34.1	37.4	41.4	45.1	49.9
250	252.3	14.8	16.5	18.4	20.5	22.7	25.2	27.9	30.9	34.2	37.9	41.6	46.0	50.1	55.4
280	282.6	16.6	18.5	20.6	22.9	25.4	28.2	31.3	34.7	38.3	42.4	46.5	51.4	56.2	62.1
315	317.9	18.7	20.8	23.2	25.8	28.6	31.7	35.2	39.1	43.1	47.7	52.3	57.8	63.2	69.8
355	358.2	21.1	23.5	26.1	29.0	32.2	35.7	39.7	43.9	48.5	53.6	59.0	65.1	-	-
400	403.6	23.7	26.3	29.4	32.6	36.3	40.2	44.7	49.4	54.7	60.4	66.5	73.4	-	-
450	453.8	26.7	29.6	33.1	36.7	40.9	45.2	50.3	55.6	61.5	67.9	-	-	-	-
500	504.0	29.7	32.9	36.8	40.7	45.4	50.2	55.8	61.6	68.3	75.4	-	-	-	-
560	564.3	33.2	36.8	41.2	45.6	50.8	56.1	62.5	69.0	-	-	-	-	-	-
630	634.6	37.4	41.4	46.3	51.2	57.2	63.2	-	-	-	-	-	-	-	-
710	714.9	42.1	46.6	52.2	57.7	64.5	71.2	-	-	-	-	-	-	-	-
800	805.0	47.4	52.4	58.8	64.9	-	-	-	-	-	-	-	-	-	-
900	905.0	53.3	58.9	66.1	73.0	-	-	-	-	-	-	-	-	-	-
1000	1005.0	59.3	65.5	-	-	-	-	-	-	-	-	-	-	-	-

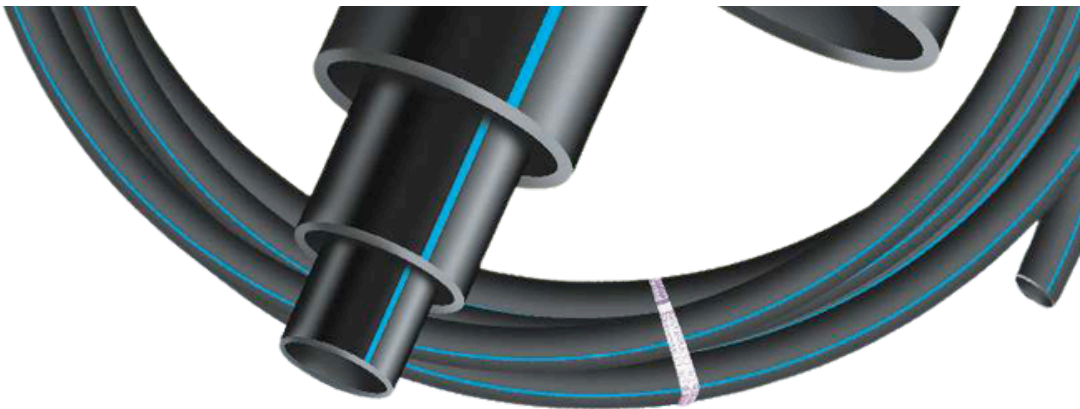
All dimensions are in mm.



Nominal Diameter		Outside Diameter mm	Minimum Wall Thickness (mm)									
inch	mm		DR32.5	DR26	DR21	DR17	DR15.5	DR13.5	DR11	DR9.3	DR9	DR7
½"	21	21.34	1.57	1.57	1.57	1.57	1.57	1.57	1.93	2.29	2.36	3.05
¾"	27	26.70	1.57	1.57	1.57	1.57	1.73	1.98	2.41	2.87	2.97	3.81
1"	33	33.40	1.57	1.57	1.60	1.96	2.13	2.46	3.05	3.58	3.71	4.78
1¼"	42	42.20	1.57	1.63	2.01	2.49	2.72	3.12	3.84	4.52	4.67	6.02
1½"	48	48.30	1.57	1.85	2.29	2.84	3.12	3.58	4.39	5.18	5.36	6.88
2"	60	60.30	1.85	2.31	2.87	3.56	3.89	4.47	5.49	6.48	6.71	8.61
3"	89	88.90	2.74	3.43	4.24	5.23	5.74	6.58	8.08	9.55	9.88	12.70
4"	114	114.30	3.51	4.39	5.44	6.73	7.37	8.46	10.39	12.29	12.70	16.33
5"	141	141.30	4.34	5.44	6.73	8.31	9.12	10.46	12.85	15.19	15.70	20.19
6"	168	168.28	5.18	6.48	8.00	9.91	10.85	12.47	15.29	18.08	18.69	24.03
8"	219	219.08	6.73	8.43	10.44	12.88	14.12	16.23	19.91	23.55	24.33	31.29
10"	273	273.05	8.41	10.49	13.00	16.05	17.63	20.22	24.82	29.36	30.33	39.01
12"	324	323.85	9.96	12.45	15.42	19.05	20.90	23.98	29.44	34.82	35.99	46.25
14"	357	355.60	10.95	13.67	16.94	20.93	22.94	26.34	32.33	38.23	39.52	50.80
16"	408	406.40	12.50	15.62	19.35	23.90	26.21	30.10	36.96	43.69	45.16	58.06
18"	459	457.20	14.07	17.58	21.77	26.90	29.49	33.86	41.55	49.15	50.80	65.30
20"	510	508.00	15.62	19.53	24.18	29.87	32.77	37.62	46.18	54.64	56.44	72.57
22"	561	558.80	16.94	21.49	26.62	32.87	36.04	41.40	50.80	60.10	62.08	79.83
24"	612	609.60	18.75	23.44	29.03	35.86	39.32	45.16	55.42	65.56	67.74	87.10

**Designation of Material**

Designation of Material	Minimum Required Strength at 50 years and 20 °C MPa	Maximum allowable hydrostatic design stress. (MPa)
PE100	10	8.0
PE80	8	6.3



**Material Grade PE 63 HDPE Pipes**

OD		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.	Min.	Max.
20.0	20.3	-	-	-	-	-	-	-	-	2.3	2.8	2.8	3.3	3.4	4.0
25.0	25.3	-	-	-	-	-	-	2.3	2.8	2.8	3.3	3.4	4.0	4.2	4.9
32.0	32.3	-	-	-	-	2.3	2.8	3.0	3.5	3.6	4.2	4.4	5.1	5.4	6.2
40.0	40.4	-	-	2.0	2.4	2.8	3.3	3.7	4.3	4.5	5.2	5.5	6.3	6.7	7.6
50.0	50.5	-	-	2.4	2.9	3.5	4.1	4.6	5.3	5.6	6.4	6.8	7.7	8.4	9.5
63.0	63.6	2.0	2.4	3.0	3.5	4.4	5.1	5.8	6.6	7.0	7.9	8.6	9.7	10.5	11.8
75.0	75.7	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
90.0	90.9	2.8	3.3	4.3	5.0	6.3	7.2	8.2	9.3	10.0	11.2	12.2	13.7	15.0	16.7
110.0	111.0	3.4	4.0	5.3	6.1	7.7	8.7	10.0	11.2	12.3	13.8	14.9	16.6	18.4	20.5
125.0	126.2	3.8	4.4	6.0	6.8	8.8	9.9	11.4	12.8	13.9	15.5	16.9	18.8	20.9	23.2
140.0	141.3	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
160.0	161.5	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
180.0	181.7	5.5	6.3	8.6	9.7	12.6	14.1	16.4	18.3	20.0	22.2	24.4	27.1	30.0	33.2
200.0	201.8	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
225.0	227.1	6.9	7.8	10.8	12.1	15.7	17.5	20.5	22.8	25.0	27.7	30.5	33.8	37.5	41.5
250.0	252.3	7.6	8.6	12.0	13.4	17.5	19.5	22.8	25.3	27.8	30.8	33.8	37.4	41.7	46.1
280.0	282.6	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
315.0	317.9	9.6	10.8	15.0	16.7	22.0	24.4	28.7	31.8	35.0	38.7	42.6	47.1	52.5	58.0
355.0	358.2	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
400.0	403.6	12.2	14.3	19.1	22.2	28.0	32.4	36.4	42.1	44.5	51.4	54.1	62.5	-	-
450.0	454.1	13.7	16.0	21.5	25.0	31.4	36.4	41.1	47.4	50.0	57.7	-	-	-	-
500.0	504.5	15.2	17.7	23.9	27.7	34.9	40.4	45.5	52.6	55.6	64.2	-	-	-	-
560.0	565.0	17.0	19.8	26.7	31.0	39.1	45.2	51.0	58.9	-	-	-	-	-	-
630.0	635.7	19.1	22.2	30.0	34.7	44.0	50.8	57.3	66.1	-	-	-	-	-	-
710.0	716.4	21.6	25.1	33.9	39.2	49.6	57.3	-	-	-	-	-	-	-	-
800.0	807.2	24.3	28.2	38.1	44.1	55.9	64.5	-	-	-	-	-	-	-	-
900.0	908.1	27.3	31.6	42.9	49.6	-	-	-	-	-	-	-	-	-	-
1000.0	1009.0	30.4	35.2	47.7	55.1	-	-	-	-	-	-	-	-	-	-

All dimensions are in mm.



**Material Grade PE 80 HDPE Pipes**

OD		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.	Min.	Max.
20.0	20.3	-	-	-	-	-	-	-	-	-	-	2.3	2.8	2.8	3.3
25.0	25.3	-	-	-	-	-	-	-	-	2.3	2.8	2.8	3.3	3.5	4.1
32.0	32.3	-	-	-	-	-	-	2.4	2.9	3.0	3.5	3.6	4.2	4.5	5.2
40.0	40.4	-	-	-	-	2.3	2.8	3.0	3.5	3.7	4.3	4.5	5.2	5.6	6.4
50.0	50.5	-	-	2.3	2.8	2.9	3.4	3.8	4.4	4.6	5.3	5.6	6.4	6.9	7.8
63.0	63.6	-	-	2.5	3.0	3.6	4.2	4.7	5.4	5.8	6.6	7.0	7.9	8.7	9.8
75.0	75.7	-	-	2.9	3.4	4.3	5.0	5.6	6.4	6.9	7.8	8.4	9.5	10.4	11.7
90.0	90.9	2.3	2.8	3.5	4.1	5.1	5.9	6.7	7.6	8.2	9.3	10.0	11.2	12.5	14.0
110.0	111.0	2.7	3.2	4.3	5.0	6.3	7.2	8.2	9.3	10.0	11.2	12.3	13.8	15.2	17.0
125.0	126.2	3.1	3.7	4.9	5.6	7.1	8.1	9.3	10.5	11.4	12.8	13.9	15.5	17.3	19.3
140.0	141.3	3.5	4.1	5.4	6.2	8.0	9.0	10.4	11.7	12.8	14.3	15.6	17.4	19.4	21.6
160.0	161.5	4.0	4.6	6.2	7.1	9.1	10.3	11.9	13.3	14.6	16.3	17.8	19.8	22.1	24.6
180.0	181.7	4.4	5.1	7.0	7.9	10.2	11.5	13.4	15.0	16.4	18.3	20.0	22.2	24.9	27.6
200.0	201.8	4.9	5.6	7.7	8.7	11.4	12.8	14.9	16.6	18.2	20.3	22.3	24.8	27.6	30.6
225.0	227.1	5.5	6.3	8.7	9.8	12.8	14.3	16.7	18.6	20.5	22.8	25.0	27.7	31.1	34.5
250.0	252.3	6.1	7.0	9.7	10.9	14.2	15.9	18.6	20.7	22.8	25.3	27.8	30.8	34.5	38.2
280.0	282.6	6.9	7.8	10.8	12.1	15.9	17.7	20.8	23.1	25.5	28.3	31.2	34.6	38.7	42.8
315.0	317.9	7.7	8.7	12.2	13.7	17.9	19.9	23.4	26.0	28.7	31.8	35.0	38.7	43.5	48.1
355.0	358.2	8.7	9.8	13.7	15.3	20.1	22.4	26.3	29.2	32.3	35.8	39.5	43.7	49.0	54.1
400.0	403.6	9.8	11.5	15.4	18.0	22.7	26.4	29.7	34.4	36.4	42.1	44.5	51.4	55.2	63.7
450.0	454.1	11.0	12.9	17.4	20.3	25.5	29.6	33.4	38.7	41.0	47.7	50.0	57.7	-	-
500.0	504.5	12.2	14.3	19.3	22.4	28.4	32.9	37.1	42.9	45.5	52.6	55.6	64.2	-	-
560.0	565.0	13.7	16.0	21.6	25.1	31.7	36.7	41.5	48.0	51.0	58.9	-	-	-	-
630.0	635.7	15.4	18.0	24.3	28.2	35.7	41.3	46.7	54.0	57.3	66.1	-	-	-	-
710.0	716.4	17.4	20.3	27.4	31.8	40.2	46.5	52.6	60.7	-	-	-	-	-	-
800.0	807.2	19.6	22.8	30.8	35.7	45.3	52.3	-	-	-	-	-	-	-	-
900.0	908.1	22.0	25.5	34.7	40.2	51.0	58.9	-	-	-	-	-	-	-	-
1000.0	1009.0	24.4	28.3	38.5	44.5	56.7	65.5	-	-	-	-	-	-	-	-

All dimensions are in mm.



Material Grade PE 100 HDPE Pipes

OD		PN 6		PN 8		PN 10		PN 12.5		PN 16	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
20.0	20.3	-	-	-	-	-	-	-	-	2.3	2.8
25.0	25.3	-	-	-	-	-	-	2.3	2.8	2.9	3.4
32.0	32.3	-	-	-	-	2.4	2.9	2.9	3.4	3.7	4.3
40.0	40.4	-	-	2.4	2.9	3.0	3.5	3.7	4.3	4.6	5.3
50.0	50.5	2.3	2.8	3.0	3.5	3.7	4.3	4.6	5.3	5.7	6.5
63.0	63.6	2.9	3.4	3.8	4.4	4.7	5.4	5.7	6.5	7.1	8.1
75.0	75.7	3.5	4.1	4.5	5.2	5.6	6.4	6.8	7.7	8.5	9.6
90.0	90.9	4.1	4.8	5.4	6.2	6.7	7.6	8.2	9.3	10.2	11.5
110.0	111.0	5.0	5.7	6.6	7.5	8.1	9.2	10.0	11.2	12.4	13.9
125.0	126.2	5.7	6.5	7.5	8.5	9.2	10.4	11.3	12.7	14.1	15.8
140.0	141.3	6.4	7.3	8.4	9.5	10.3	11.6	12.7	14.2	15.8	17.6
160.0	161.5	7.3	8.3	9.6	10.8	11.8	13.2	14.5	16.2	18.1	20.2
180.0	181.7	8.2	9.3	10.8	12.1	13.3	14.9	16.3	18.2	20.3	22.6
200.0	201.8	9.1	10.3	12.0	13.4	14.8	16.5	18.1	20.2	22.6	25.1
225.0	227.1	10.3	11.6	13.5	15.1	16.6	18.5	20.4	22.7	25.4	28.2
250.0	252.3	11.4	12.8	15.0	16.7	18.4	20.5	22.6	25.1	28.2	31.3
280.0	282.6	12.8	14.3	16.8	18.7	20.6	22.9	25.3	28.1	31.6	35.0
315.0	317.9	14.4	16.1	18.9	21.0	23.2	25.8	28.5	31.6	35.5	39.3
355.0	358.2	16.2	18.1	21.2	23.6	26.2	29.1	32.1	35.6	40.0	44.2
400.0	403.6	18.2	21.2	23.9	27.7	29.5	34.2	36.2	41.9	45.1	52.1
450.0	454.1	20.5	23.8	26.9	31.2	33.1	38.3	40.7	47.7	50.8	58.7
500.0	504.5	22.8	26.5	29.9	34.6	36.8	42.6	45.2	52.2	56.4	65.1
560.0	565.0	25.5	29.6	33.5	38.8	41.2	47.6	50.6	58.4	-	-
630.0	635.7	28.7	33.3	37.7	43.6	46.4	53.6	56.9	65.7	-	-
710.0	716.4	32.3	37.4	42.4	49.0	52.3	60.4	-	-	-	-
800.0	807.2	36.4	42.1	47.8	55.2	58.9	68.0	-	-	-	-
900.0	908.1	41.0	47.4	53.8	62.1	-	-	-	-	-	-
1000.0	1009.0	45.5	52.6	-	-	-	-	-	-	-	-

All dimensions are in mm.







# HDPE Fittings Range

## Fittings

HSN Code: 39172110



Moulded Tee



Moulded Elbow



Moulded Elbow



Elbow



Fabricated Bend



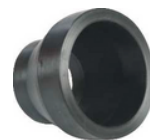
Coupler



Short Neck Pipe End



Flange Slippon



Long Neck Pipe End



Elbow



# Technical Properties

## Material Grade

As per conveyed fluid temperature two material grades are available:

- PE (PolyEthylene) Grade
- PERT (PolyEthylene of Raised Temperature resistance) Grade

Basically PE Material is suitable for conveying fluids at ambient temperature and the Indian Standard is based on design temperature of 30°C (Indian ambient temperature). However, PE grades 63, 80 and 100 can be used up to 50°C with suitably degrading pressure class as per chart and graph given in the standards.

For conveying fluids of elevated temperature (say 70°C), PERT materials grade is recommended for pipes and fittings.

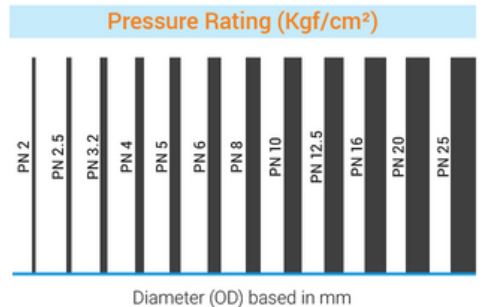
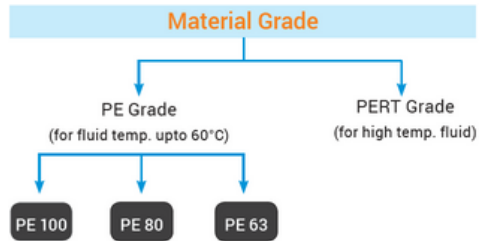
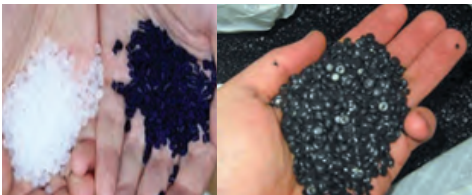
Material properties for PE.

## PE Grade

The standards give the PE pipe raw material grades as PE63, PE80 and PE100. The PE raw material is manufactured in the form of granules and the first generation grades of PE63 & PE80 raw materials were manufactured by UNIMODEL method. Subsequently PE100 grade was introduced with BIMODEL method of manufacturing, the PE80 grade also was included in the BIMODEL method. This BIMODEL method of manufacturing the PE granules both in PE 80 and PE 100 grades, improved not only the Minimum Required Strength but also the pipe performance by increasing the Notch Resistance as well as Resistance to Crack propagation. The increase in MRS also reduced the wall thickness for a given pressure class thereby increasing the internal diameter resulting in better fluid flow with reduced cost of pipe.

The PE Raw Material Resin granules is available in two types:

1. Natural grade which is translucent and for the UV protection Carbon black master batch is added to the granules during extrusion.
2. Pre-compounded resin granules are also available which is specified in all the International Standards which gives a uniform dispersion of carbon black in the end products thereby the products have better UV resistance for long storage under sunlight or for above ground installations.



**Pipe Size:** 20, 25, 32, 40, 50, 63, 75, 90, 110, 125, 140, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600

**Edoburg supply pipes are manufactured conforming to the International & Indian standards below:**

- Indian Standards  
- IS-4984
- German Standard  
- DIN 8074  
- BS EN 13244
- American Standard  
- ASTM D 3035
- British Standard  
- BS EN 13244

## Mechanical and Physical Properties of Raw Material

Property	Value	Unit
Density (Base Material)	940 – 965	Kg/M <sup>3</sup>
Melt flow index (190°C /5.0 Kg)	0.2 – 1.1	g/10 Minutes
VST	120 - 130	°C
Crystalline melting Range	130 - 133	°C
Viscosity Number	390	Cm <sup>3</sup> /g
Hardness	56 - 65	Shore * D*
Tensile Strength at Yield	20 - 26	MPa
Ultimate tensile Strength	30	MPa
Elongation At Break	>600	%
Elastic Modulus	800 - 1200	MPa
Flexural Stress (3.5% Deflection)	13.8 – 20.3	MPa
Charpy Notched Impact at 0°C	16	KJ/M <sup>2</sup>
Thermal Stability at 210°C	≥15	Minutes
Carbon Black Content	2 - 3	%

### PE Pipe Wall Thickness for Raised Temperature

The wall thickness of pipes are based on the maximum allowable hydrostatic design stress at 30°C water temperature for 50 years of life. In case of variation in water temperature, the working pressure needs to be modified as per given chart. However, occasional rise in temperature as in summer season with concurrent corresponding reduction in temperature during night has no deleterious effects on the life and working pressure of PE pipes.

### PE Pipe Wall Thickness for Raised Temperature

Property	Value	Unit
Base density	930 to 960	Kg / m <sup>3</sup>
MFR @ 190 Deg.C and 5 kg load	0.2 to 1.1	g / 10 min
Longitudinal Reversion Test	≤ 3	%
Carbon Black content	2.0 to 3.0	%
Carbon Black dispersion	Satisfactory dispersion	-
Anti-oxidant content in PE resin	Max 0.3	%
OIT of PE resin and Pipe @ 200 Deg.C	> 20	Minutes
Volatile content of PE resin	≤ 350	mg / kg
Water content of PE resin	≤ 300	mg / kg
Dimensional characteristics	As per IS 4984-2016	-
Hydraulic characteristics	PE63 PE80 PE100	-
27 Deg.C & 100 hrs Duration	6.9 8.6 10.7	MPa for
80 Deg.C & 48 hrs Duration	3.8 4.9 5.7	Induced
80 Deg.C & 165 hrs Duration	3.5 4.5 5.4	stress
80 Deg.C & 1000 hrs Duration	3.2 4.0 5.0	selected
Tensile strength of Butt fusion joint	Ductile failure	-
Elongation at break	≥ 350	%
Slow crack growth at 80+1 Deg.C, notched test specimen at below internal test pressure (Bar)	≥ 500	Hrs.
PE63 PE80 PE100	6.4 8.0 9.2	

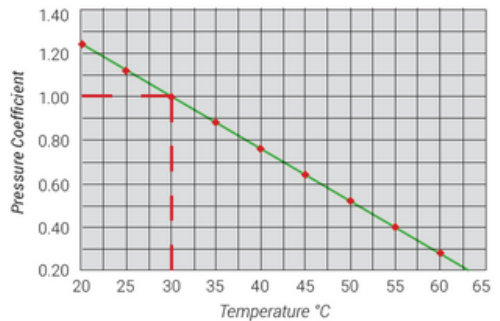
a) For other temperatures between each step, interpolation is permitted.

b) For higher temperatures, consult the compound/pipe manufacturer.

## Temperature vs Pressure Co-efficient Chart

Temperature De-rating of PE Pipes (as per IS: 4984-2016 specifications)

Service Temperature	Multiplication factor for Pressure rating
20°C	1.24
25°C	1.12
30°C	1.00
35°C	0.88
40°C	0.76
45°C	0.64
50°C	0.52
55°C	0.40
60°C	0.28
63°C	0.18



### Chemical Resistance Chart

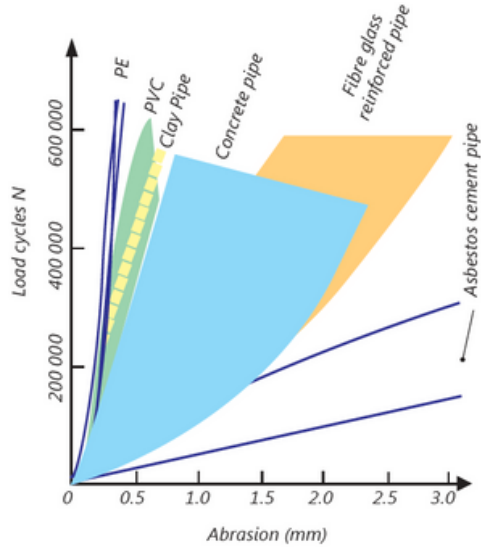
PE pipes have excellent resistance to a wide range of chemicals. They are ideally suited for conveying highly corrosive fluids and chemicals. Generally dilute chemical solutions at lower temperatures and stress have very little potential to affect PE pipes. However, at higher temperature with applied stress, the effect of resistance to the chemical will be reduced. Combinations of one or more chemicals also may affect the pipes and under these conditions pre-testing of the pipe for the actual working condition.

Medium	23°C	60°C
Acetaldehyde, gaseous	E	G
Acetic acid (10%)	E	E
Acetic acid (100%) (Glacial acetic acid)	E	GC
Acetic anhydride	E	GC
Acetone	E	E
Acetylene tetrabromide	**GtoN	N
Acids, aromatic	E	E
Acrylonitrile	E	E
Adipicacid	E	E
Allyl alcohol	E	E
Aluminum chloride, anhydrous	E	E
Aluminum sulphate	*E	E
Alums	E	E
Ammonia, liquid (100%)	E	E
Ammonium chloride	*E	E
Ammonium fluoride, aqueous (up to 20%)	E	E
Ammonium nitrate	*E	E
Ammonium sulphate	*E	E
Ammonium sulfide	*E	E
Amyl acetate	E	E
Aniline, pure	E	E
Anisole	G	E
Antimony trichloride	E	N

# Why to choose High- Density Polyethylene (HDPE) pipes?

Polyethylene piping system offers significant advantages over conventional piping systems like Ductile Iron, Mild Steel, Cast Steel and Cement pipe systems. Some of its advantages are as listed below:

- 1. Longevity:** PE pipes have the Long track record of excellent performance, approaching 100 years worldwide.
- 2. Corrosion Resistance:** PE is basically chemically inert. This pipe system does not rust and corrode. This system resists chemical attack from aggressive soils. There is no need for protective layer or finishing process. PE pipe has very good abrasion resistance also.
- 3. Leak Tight:** Butt fused joints create a homogenous water-tight jointing for the pipe system. Unlike ring type joints or other mechanical jointing systems existing in conventional systems, there is no risk of leakages resulting from joint distortion due to soil settlement or corrosion effect of conveyed water or the soil in which it is buried.
- 4. Optimum Flow Rate:** Smooth inside pipe surface allows for a high Friction Co-efficient "C" factor and it remains constant throughout the lifetime of the PE Piping system due to innate resistance to scaling and biological buildup. Polyethylene is also biologically inert.
- 5. Excellent Water Hammer Characteristics to Withstand Surges:** The inherent properties of polyethylene allow the system to significantly lower the effect of surges due to water hammer when compared with any other Rigid Pipe material of construction.
- 6. Flexibility:** Small diameter PE pipes can be coiled and supplied in length up to 2000m. This feature is one of the many contributions to cost & time saving during the installation process.
- 7. Resistance to Geological Conditions:** PE piping systems have inherent resistance to ground temperature fluctuations and earth instability because of high impact and breakage resistance.
- 8. Seismic Resistance:** The toughness, ductility and flexibility of PE pipe combined with its other special properties, such as its leak-free fully restrained heat fused joints, make it well suited for installation in dynamic soil environments and in areas prone to earthquakes.
- 9. Abrasion Resistance:** PE pipe is a frequent choice for the transport of granular or slurry solutions, such as sand, fly ash and coal. The advantage of polyethylene in these applications is its wear resistance, which for example when conveying fine grain slurries has been shown in laboratory tests to be three to five times greater than for steel pipe. PE pipe has elastic properties that under proper flow conditions allow particles to bounce off its surface. This feature combined with PE's toughness results in a service life that exceeds that of many metal piping materials. There are several factors that affect the wear resistance of a pipeline. The concentration, size and shape of the solid materials, along with the pipe diameter and flow velocity, are the major parameters that will affect the life of the pipeline.



- 10. High strain-ability** under stress virtually eliminates failure due to freezing of conveyed water during extremely cold weather conditions.
- 11. Reduced installation costs.**
- 12. PE pipe can Achieve Maximum Cold Bending Radius**

Pipe SDR	Allowable Cold Bending Radius (R)
≤ 13	R = 20D
> 13 < 21	R = 25D
> 21	R = 30D

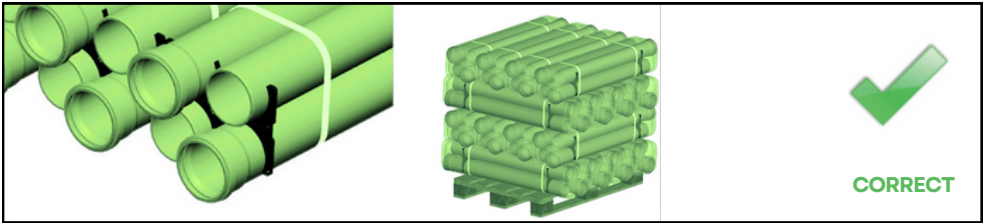
'D' is the pipe diameter



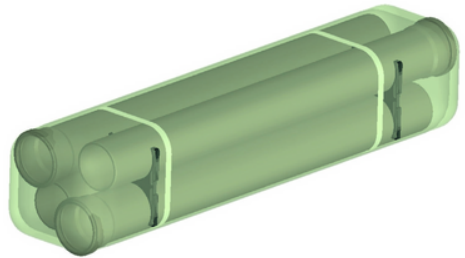
# Packaging, Storage and Transportation

## Packaging

Our pipes and fittings are packed as ready for transport in a customer-friendly way. Packing ensures safety, efficient storage and easy transport.

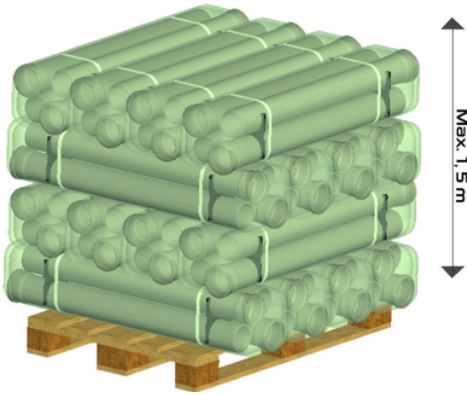


Short parts with the length of 150, 250 and 500 mm are packed in carton boxes like connection parts.



Pipes are packed by plastic clamps to hold them together. Stretch film is applied to protect pipes from pipes dust and stains.

## Storage

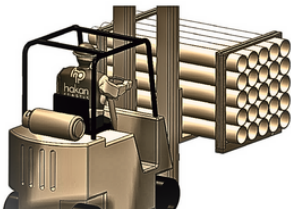
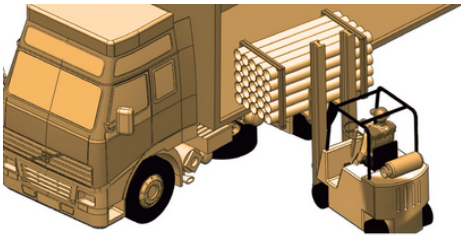


Method of storage should not cause any outflow and should not damage the pipes. As long as they are stored properly, no permanent deformations or damages will occur on the pipes and fittings. Pipes should not be stacked above 1,5 m. Pipes should be safe against sliding.



Pipes and fittings packed in carton boxes should be protected against moisture. Carton boxes should be sealed and stored in a dry area.

## Transportation



Pipes should be carefully transported to prevent any damages. Avoid sudden and hard pressures on pipes and fittings that might cause freezing in cold weather conditions. Ensure that pipes are not slid and dropped on the floor. Loading and unloading and packing of pipes in a block should be carried out by means of forklifts having flat threads and extensions.



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