



# ALPHA

## HDPE PIPE & FITTINGS

**ALPHA PIPE INDUSTRIES PVT LTD**  
MANUFACTURER & SUPPLIER OF uPVC-HDPE, MDPE,  
PPRC PIPES & FITTINGS



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# HDPE PIPES & FITTINGS

## INTRODUCTION

ALPHA High Density Polyethylene Pipes (HDPE) are manufactured using 100% virgin grade HDPE compounds. ALPHA HDPE Pipes have an average life of more than 50 Years under normal working conditions. Our range impart extra toughness and excellent anti-corrosive properties. As a mark of appreciation of quality manufacturing practices, we are approved by leading specifying agencies in Pakistan like PSQCA, HUD, PHED, C&W & MES.

## ALPHA PRESSURE RATING

ALPHA Pipes operating pressure range between PN-04, PN-06.3, PN-08 PN-10, PN-12.5, PN-16 & PN-20 with SDR 9, 11, 13.6, 17, 21, 26 and 41.

## HDPE PIPES FOR WATER SUPPLY

ALPHA PIPES is fast replacing conventional piping systems for water supply and distribution. ALPHA PIPES Systems are extensively used for new as well as replacement piping works throughout the country. ALPHA PIPES for water are black in colour with a smooth internal surface.

## SIZE RANGE:

20mm to 50mm in 500 feet coils (1000 ft Coils on demand)

63mm to 90mm in 100 meters coils

110mm to 1200mm in 4, 6 & 12 meters length



## PROPERTIES

ALPHA HDPE Pipes conforms to ISO-4427: 1996, DIN 8074/8075 & PS-3580: 1997 specifications, manufactured in state-of-the-art plant with latest manufacturing technology under strict quality control. ALPHA HDPE Pipes are best preferred for potable water supply, irrigation schemes, chemicals and edibles transportation, effluent collection and disposal system, submarine and underwater pipe lines, hydro transport system, gas/compressed air system etc.

**ADVANTAGES:**

- High corrosion resistance, resulting into a longer life.
- High impact strength.
- Extremely light weight and hence easy to handle.
- High flexibility.
- High abrasion resistance.
- Excellent water hammer characteristics, helps sustaining surges.
- Excellent flow characteristics leading to significant energy saving.
- No exfiltration and infiltration, helps maintaining the quality of fluid being conveyed.
- No trenches needed, resulting into easy and economical installation.
- High UV resistance.
- High resistance to scaling and biological build up.
- High chemical resistance, absolutely inert to any pH value.
- Virtually maintenance free.



## QUALITY ASSURANCE

We always believe Quality is the key to success for any business. We claim to have the best quality checking and testing laboratory equipped with latest and modern equipments imported from Europe and Japan.

We have following testing facilities.

- Melt flow rate
- Density
- Hydrostatic Pressure test
- Heat reversion test
- Tensile strength checking test
- Charpy impact test



## APPLICATIONS

- For supply of clean drinking water
- In Petrochemical, paper, Dye, Paint, Cement and other Chemical Industries
- For disposal of chemical effluent and waste
- Oil and milk transportation in Industries and Dairies
- Acid and Slurries transportation
- External & Internal Drainage and Sewage
- Water supply for irrigation in fields
- Lift & Siphon Irrigation System
- Insecticide spraying
- Drawing Water from pump set for distribution
- Most suitable for Submersible Pumps and Jet Pumps
- Telecommunication Cable Ducting
- Bio-gas, Coal Gas & Natural Gas Distribution Lines for Domestic and Industrial use
- Air Conditioner Ducting

## INDUSTRIAL USAGE

ALPHA Pipe can also be used in following sectors:

Agriculture / Drip Irrigation / Sprinklers / Breweries Petroleum and Chemicals Food Processing Textile Fire Main Line. Fertilizer, Paper and Pulp Glass Plastic Resin, LNG (liquefied Natural Gas) Mining.

## ADVANTAGES

- High Impact and Breakage resistance
- Very high resistance to ultraviolet light
- Cost effective pipe line
- Easy transportation
- Durable & impact resistance
- Resistance to grow off bacteria, algae & fungi
- Simple and easy jointing system
- Suitable for narrow treachery
- Low coefficient for friction
- Odourless and friction less
- Advantage of being not affected from earth movements like landslides and earth quakes etc.
- Long life (more then 50 years)
- Feasible in hilly region
- Lightweight
- Easy installation/laying



**HDPE STANDARD SPECIFICATION PE-100 MATERIAL  
CONFORMING TO ISO 4427, DIN 8074-75 & PS 3580**

DN	SDR 41	SDR 26	SDR 21	SDR 17	SDR 13.6	SDR 11	SDR 09
	(PN 4)	(PN 6.3)	(PN 8)	(PN 10)	(PN 12.5)	(PN 16)	(PN 20)
0.D/mm	e (mm)	e (mm)	e (mm)	e (mm)	e (mm)	e (mm)	e (mm)
20	-	-	-	-	1.8	1.9	2.3
25	-	-	-	1.8	2	2.3	2.8
32	-	-	-	2	2.4	2.9	3.6
40	-	-	2	2.4	3	3.7	4.5
50	-	-	2.4	3	3.7	4.6	5.6
63	-	-	3	3.8	4.7	5.8	7.1
75	-	-	3.6	4.5	5.6	6.8	8.4
90	-	3.5	4.3	5.4	6.7	8.2	10.1
110	-	4.2	5.3	6.6	8.1	10	12.3
125	-	4.8	6	7.4	9.2	11.4	14
140	-	5.4	6.7	8.3	10.3	12.7	15.7
160	-	6.2	7.7	9.5	11.8	14.6	17.9
180	-	6.9	8.6	10.7	13.3	16.4	20.1
200	-	7.7	9.6	11.9	14.7	18.2	22.4
225	-	8.6	10.8	13.4	16.6	20.5	25.2
250	-	9.6	11.9	14.8	18.4	22.7	27.9
280	-	10.7	13.4	16.6	20.6	25.4	31.3
315	-	12.1	15	18.7	23.2	28.6	35.2
355	-	13.6	16.9	21.1	26.1	32.2	39.7
400	9.8	15.3	19.1	23.7	29.4	36.3	44.7
450	11	17.2	21.5	26.7	33.1	40.9	50.3
500	12.3	19.1	23.9	29.7	36.8	45.4	55.8
560	13.7	21.4	26.7	32.2	41.2	50.8	62.2
630	15.4	24.1	30	37.4	46.3	57.2	-
710	17.4	27.2	33.9	42.1	52.2	64.5	-
800	19.6	30.6	38.1	47.4	58.8	-	-
900	22	34.4	42.9	53.3	66.2	-	-
1000	24.5	38.2	47.7	59.3	73.5	-	-
1200	29.4	45.9	57.2	70.6	-	-	-

### **CABLE DUCT / CONDUIT PIPES**

For installation of fiber optic cables the Ministry of Pak Telecom has specified the use of long-term performance Sub-Duct and Mini Duct made from High Density Polyethylene (HDPE) piping compound.

To fulfill this need ALPHA PIPE has designed and manufactured HDPE Sub-Duct and Mini Duct so that exposure to the environmental conditions during storage, transport, installation and operation shall not degrade the physical or operation and maintenance characteristics of the Sub Duct and Mini Duct, as per ASTM F2160 for telecommunication conduit and power conduits. ALPHA PIPE Sub-Duct and Mini Duct are manufactured from the specifically designed read grenade black piping compound in which the carbon black has been perfectly dispersed to give the maximum possible protection from sunlight.

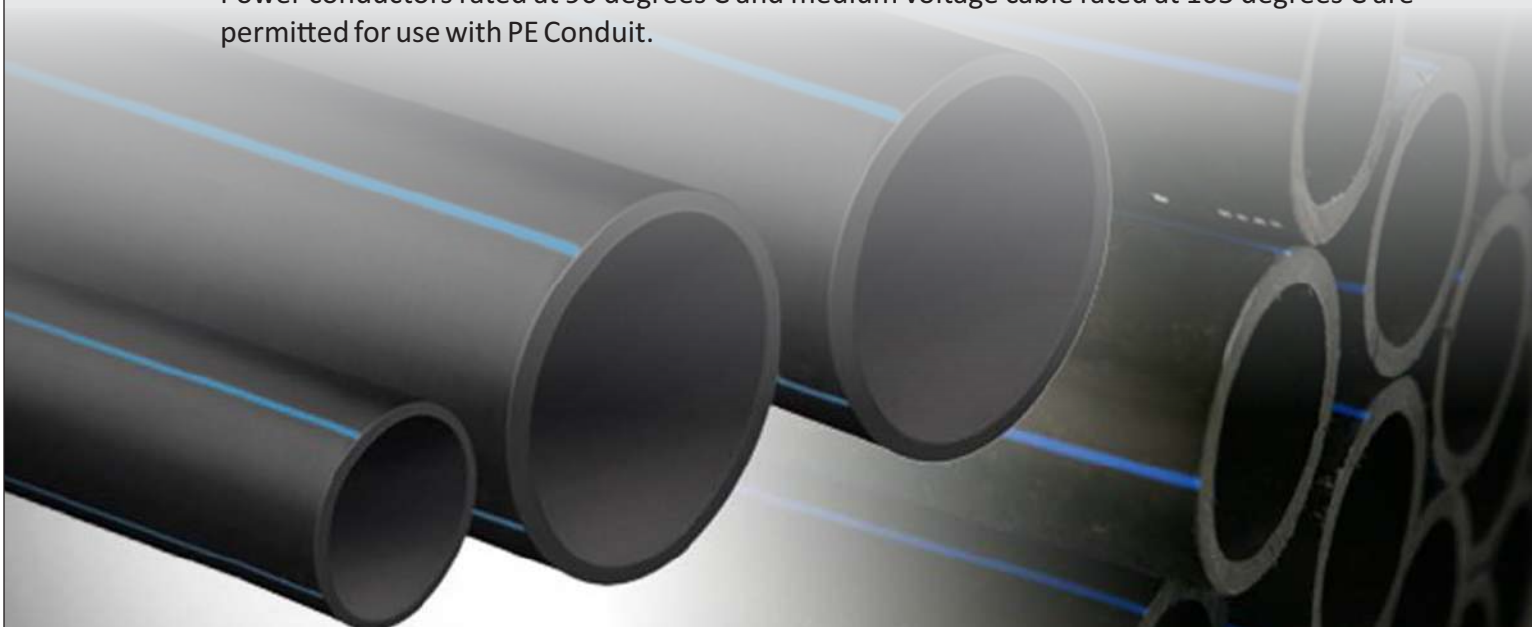
The Company is formally enlisted with Pakistan Telecommunication Company Limited.

The experience of our Technical Department is available for advice and assistance when needed, on the use of pipe products. We are a PTCL registered company.

### **ADVANTAGE OF PE CONDUIT**

High Density Polyethylene (HDPE) is the most commonly used PE material for conduit. HDPE conduit delivers significant physical property advantages over other conduit materials:

- Ductility-tough, HDPE conduit will better resist brittleness with age or cold weather.
- Low temperature impact resistance - PE withstands low temperature impact better than any other material.
- This is illustrated by impact testing on HDPE conduit conditioned at 40°F as compared to other materials conditioned at 73°F.
- Permanent flexibility - HDPE conduit bends and flexes without breakage, even with ground heaves or shifts, over a wide range of temperatures.
- Temperature versatility- HDPE conduit can be installed over an ambient temperature range of 30°F to 180°F.
- Power conductors rated at 90 degrees C and medium voltage cable rated at 105 degrees C are permitted for use with PE Conduit.



## HDPE FITTINGS

ALPHA HDPE Fittings are available in sizes from 1/2" to 18" produced in-house and also arranged through imports are for use with ALPHA PE products in water, oil and gas, and other applications. These fittings are generally for compression type, fabrication and jointing. These fittings are durable and made from 100% virgin material and thoroughly tested for better performance.

ALPHA HDPE Fittings when jointed to the pipe, become homogeneous with the polymer of pipes and develop a strength same as the original pipes, therefore making the joint leak free and fully durable and maintenance free.

ALPHA HDPE Fittings are available in different sizes, these fittings can also be customized to fulfill the needs of our clients.



## JOINTING METHODS FOR HDPE PIPES AND FITTINGS

There are available number of types of jointing HDPE pipes depending on the size and common type of application. The first common type of Jointing HDPE pipe is Mechanical Jointing which compose of Compression type and Flange type, and the other is the Permanent Jointing which composes of Butt Fusion Welding and Electrofusion Welding.



### COMPRESSION TYPE

For small bore pipe connections up to size 110mm, compression type joints are satisfactory. The installation process start with the cutting of pipe ends square or 90° in relation to its axis. Fit the collar and clinching ring into the pipe and place the rubber a-ring at the tip of the pipe. Then push the body of the fitting until the pipe ends reaches its full stop. Slide the clinching ring and Collar (Nut) until it catches the fitting and tight fully using a belt or chain wrench.



### FLANGE TYPE

Flange type is another type of conventional mechanical jointing. A HDPE Flange adapter (Stub end) is butt welded to the pipe with the loose steel backing flange inserted inside. A standard number of bolts will be fitted to tighten the connection. This type of connection is practical for application which requires easy serviceability in the future.



### BUTT FUSION

Butt welding or Butt Fusion is a simplest and space-saving jointing method to connect the pipe and fittings of PE. The process starts by cutting the pipe ends straight and square to the axis and cleaned carefully by an electric planer. The pipes and fittings are held tight and pressed against a coated heating plate. As soon as the heating time and the required bead are reached, the heating plate is quickly withdrawn from the weld faces and the connection are pressed together to form a permanent joint.



### ELECTRO FUSION WELDING

This is an easy system for jointing pipes and fittings of HDPE. Pre-installed resistance wires are embedded in the inside surface of the electro fusion coupling. When the pipes or fittings are inserted in the coupling and the wires are connected to the welding unit, the contact surfaces become warm and consequently melt into each other until it forms a rigid and durable joint. A welding unit is available for this procedure which operates the timing automatically. This makes the whole operation very easy and practical especially in narrow and tight installations.



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