KQL KQL
ISO 9001 ISO 14001

KUPP PLASTIC PIPE

PE WATER SUPPLY PIPE

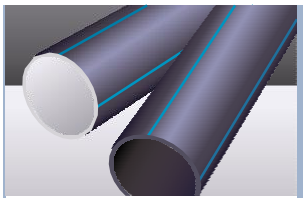
Leading an age of Power from
KUPP PLASTIC PIPE

KUPP
케이유피피㈜

KUPP PLASTIC PIPE SYSTEM – HDPE WATERWORKS PIPE

PE WATER SERVICE PIPES

World top-class water pipes with reinforced working and allowable pressure using high grade HDPE raw material.



PE water pipes are the product of high quality material, up-to-the-date facilities, and top-class technical power. Using HDPE which has excellent physical and chemical properties, PE water pipes are free from chemical and electrolytic corrosion. Weather ability is greatly improved by adding carbon black.

Applications

- Basic use : water lines, drain lines, water service lines
- The applications include potable (drinking) water, reclaimed water, intake water, raw water, wastewater, sewer Force mains, sanitary and storm sewer systems, storm drainage.

Advantages

There are three main reasons for using polyethylene as a water main pipe material:

1) It will reduce water loss and contamination,

2) It is a practical and cost effective replacement for a deteriorating waterworks and sewage system, and

3) It is capable of handling a variety of environmental conditions from extreme cold, earthquakes and corrosive materials

Physical characteristics

- **Long life**
  KUPP pipe's service life in continuous pressure is estimated to conservatively be in excess of 50 years at ambient te mperature.
- **High chemical resistance**
  KUPP pipe is inert to attack by strong acids, alkalizes, salt solutions, and many other chemicals. It also doesn't co rrode, degrade or support biological growth.
- **Freedom from toxicity, odors, tastes**
  KUPP pipe is non-toxic, odorless, and tasteless. It creates no corrosive by-products, and therefore, no contaminati on of piped fluid keeping the taste of water unchanged. This pipe will be an ideal for potable water supply.

PE WATER SERVICE PIPES

- **Light weight/flexibility**
  KUPP pipe is light in weight, which makes it easy to handle, assemble, and install. Its high flexibility eli minates the need for elbows at slight bends. Also its flexibility at a low temperature enables it easy to be in stalled in any applications.

- **Heat fusion welding**
  KUPP pipe adapts the heat fusion welding, a proven welding technique that provides a speedy and leak- free j oint that is as strong or stronger than the pipe itself and will last the life of the pipe. And its flexibility for any s hifting in the ground caused by swelling and shrinking soil or earthquakes will not damage the pipes or cause joints to leak.

- **Immunity to galvanic or electrolytic attack**
  Because KUPP pipe is immune to galvanic or electrolytic attack, it can be used underground, underwater, Wetlands and in the presence of metals.

- **Strength/durability**
  KUPP pipe is highly resilient, tough and durable with high tensile and high impact strength. Its freeze resi stance allows it to maintain flexibility and integrity to lower than -80. Its impact resistance, slow crack gro wth resistance and long service life prove it suitable for various tough applications.

- **Abrasion resistance**
  KUPP pipe is extremely abrasion resistant. With its features such as light weight, flexible, durable, leak tight, corrosive resistant to chemical, acid, salt and etc, it is ideal for conveying the aggressive materials that are a ssociated with the mining and dredging industries such as slurry transfer and dredging applications.

- **Reliability**
  Whether for gas distribution, water distribution or sewers, KUPP pipe is highly recognized thanks to its m aximum reliability and years of efficient service life.

- **Ease of installation**
  KUPP pipe is light in weight reducing transportation, handling, and installation costs. Its advantage is that lig hter equipment, smaller crew, ordinary "bedding" requirements, standard valves and flanges are needed. T hese benefits result in a reduced number of fittings with no restrained joints as well as easy installation.

- **Low maintenance / cost effective**
  Once KUPP piping system is properly selected, designed, and installed, it is virtually maintenance free.
  It will not rust, pit, scale, corrode, or promote build-up on the interior. Accordingly years of trouble-free can be expected, which will keep the maintenance and labor cost very low.

- **Fatigue endurance**
  KUPP piping systems provide exceptional endurance with the ability to sustain hydraulic transients and wa ter hammer pressure surges.

- **Low friction loss**
  The smooth interior surface of KUPP pipe assures low friction loss and high flow rate. Since KUPP pipe does not rust, pit, scale, or corrode, the high flow rate continues for the life of the piping system.

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Typical properties

Properties		Method	Units	Typical value
Density		ASTM D1505	g/cm³	0.954
Melt Index	2.16 kg load	ASTM D1238	g/10 min	0.1
	5 kg load		g/10 min	0.56
Carbon black content		ASTM D1603	%	2 ~2.5
Tensile Properties	Tensile strength at yield(min)	ASTM D 638	kg/cm²	230
	Tensile strength at break(min)		kg/cm²	300
	Elongation at break(min)		%	500
Flexural modulus		ASTM D790	kg/cm²	8800
Environmental Stress Crack Resistance		ASTM D1693	hr	1000
Condition B, F50(min)				
Hardness(min)		ASTM D2240	shore"D"	63
Impact strength(Izod,Method A,min)		ASTM D256	kg·cm/cm	30
Oxidative Induction Time at 200°c		ISO/TR 10837	min	60
Coef.of linear theral expansion		ASTM D696	1/°c	0.00013

Notes) These are typical values for compression moulded specimens;the properties of these materials in extruded pipe form, or as moulded fittings will vary slightly in each individual case owing to morphological differences arising from the different processing methods.

Pipe dimensions

PE pressure pipes are manufactured according to the following standards: ASTM D3035

ASTM D 3035		DR 11		DR 13.5		DR 17		DR 21	
PIPE SIZE	AvG. O.D.	MIN. T.	AvG. I.D.	MIN. T.	AvG. I.D.	MIN. T.	AvG. I.D.	MIN. T.	AvG. I.D.
1/2	0.840	0.076	0.679	—	—	—	—	—	—
3/4	1.050	0.095	0.849	0.078	0.885	—	—	—	—
1	1.315	0.120	1.061	0.097	1.109	—	—	—	—
1-1/4	1.660	0.151	1.340	0.123	1.399	—	—	—	—
1-1/2	1.900	0.173	1.533	0.141	1.601	—	—	—	—
2	2.375	0.216	1.917	0.176	2.002	0.140	2.078	—	—
3	3.500	0.318	2.826	0.259	2.951	0.206	3.063	0.167	3.146
4	4.500	0.409	3.633	0.333	3.794	0.265	3.938	0.214	4.046
5-3/8	5.375	0.489	4.338	0.398	4.531	0.316	4.705	0.256	4.832
5	5.563	0.506	4.490	0.412	4.690	0.327	4.870	0.265	5.001
6	6.625	0.602	5.349	0.491	5.584	0.390	5.798	0.315	5.957
7	7.125	0.648	5.751	0.528	6.006	0.419	6.237	0.339	6.406
8	8.625	0.784	6.963	0.639	7.270	0.507	7.550	0.411	7.754
10	10.750	0.977	8.679	0.796	9.062	0.632	9.410	0.512	9.665
12	12.750	1.159	10.293	0.944	10.749	0.750	11.160	0.607	11.463
14	14.000	1.273	11.301	1.037	11.802	0.824	12.253	0.667	12.586
16	16.000	1.455	12.915	1.185	13.488	0.941	14.005	0.762	14.385
18	18.000	1.636	14.532	1.333	15.174	1.059	15.755	0.857	16.183
20	20.000	1.818	16.146	1.481	16.860	1.176	17.507	0.952	17.982
22	22.000	2.000	17.76	1.630	18.544	1.294	19.257	1.048	19.778
24	24.000	2.182	19.374	1.778	20.231	1.412	21.007	1.143	21.577
26	26.000	—	—	1.926	21.917	1.529	22.759	1.238	23.375
28	28.000	—	—	2.074	23.603	1.647	24.508	1.333	25.174
30	30.000	—	—	2.222	25.289	1.765	26.258	1.429	26.971

KUPP PIPE FITTINGS

The main requirements to be fulfilled are hydraulic tightness as well as structural stability of the system.
For the satisfactory performance of KUPP HDPE pipe system, design and installation methods mainly rely on the ap propriate choice and properly made connections. An adequate and properly made pipe joint will lead to faster and non- ha zardous systemoperation.
With a view to fulfill the above important aspects of pipeline system as well as to provide the user industry a choice based on application and economy, KUPP have developed several types of jointing systems like Butt Fusion and Compression joints, etc . The choice of joint required for installing KUPP HDPE piping system depends upon requirements based on internal or exter nal pressure, leak tightness, restraint against longitudinal or side movement, construction and installation requirements as w ell as application.

Electro-fusion type fittings

KUPP , the official partner of Plasson - No.1 global E/F fitting company, distribute Easy & Convenient fitting system to Korean mar ket for better working environment.

Those are suitable for PE pipes ranging fr om ASTM ½" to 30" covered under relevant standards.

Socket

Large Socket

Bend 90°

Bend 45°

Reducer

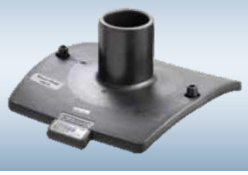
Equal Tee

Reducing Tee

End Plug

Branch Saddle

Multi Saddle



Butt-weld type fittings

KUPP have a range of butt-weld fittings which could adapt to plain ends of PE pipes. KUPP's manufacture butt-welding fittings suitable for PE pipes ranging from ASTM ½" to 30" OD covered under relevant standards.


PE Socket


PE Reducer


PE Flange


PE Bend 90°


PE Bend 45°


PE End Cap

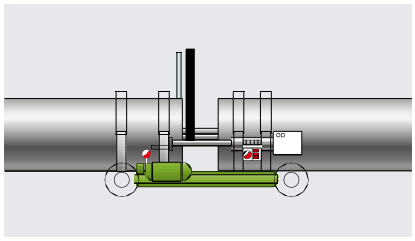

PE Equal Tee

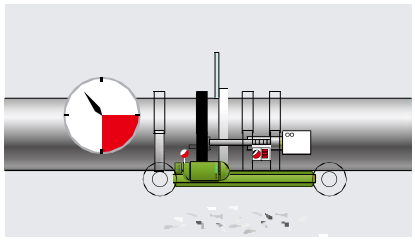

PE Reducing Tee

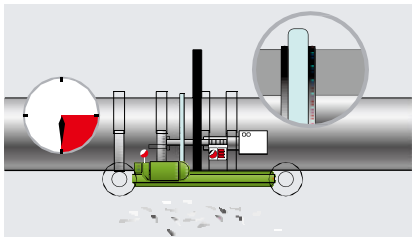
Butt fusion type

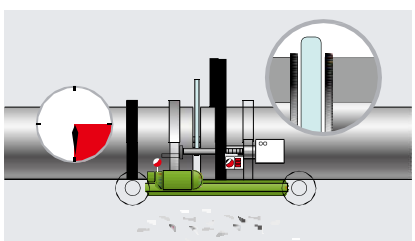
Butt Fusion jointing is a method of jointing PE pipes using thermal fusion. This technique permits the quick assembly of long continuous joints in a faster and economical way without the use of modified pipe end or couplers. The fused joints are reliable and as strong as the pipe itself thus providing total leak proof system. We also provide experienced and skilled staff to conduct and supervise the jointing operations

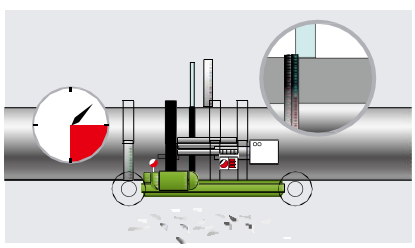
Jointing method

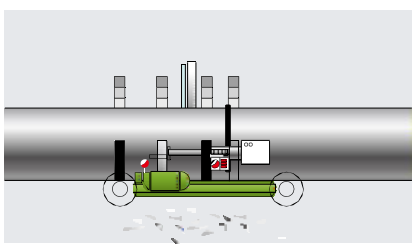

1. Clamping & Aligning


2. Facing


3. Heating


4. Remove the Heater


5. Fusing


6. Cooling and complete

World Technology, Global Leader

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