



Multi-Layer Composite Pipes



KiTEC Industries (India) Private Limited

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Rewriting the Standards

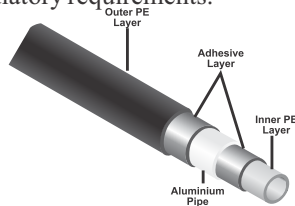
Rewriting the Standards

KiTEC pipes are manufactured by KiTEC Industries (India) Private Limited, an ISO 9001:2015 Company and has established state of art manufacturing and testing facilities at Silvassa in Union Territory of Dadra & Nagar Haveli and Daman & Diu. The company supports training of local technicians through its all India network. The local technicians can pick up the job in just 30 minutes. The company in India has developed various options of fittings for the Indian environment with its in-house research. The pipes are manufactured in accordance with IS 15450:2022, IS 17544: 2022, ASTM F1281:2017 (UPC Listing), IAPMO IGC – India 308/ 309 (UPC-I, UMC-I and USEC-I listing) and also as per EN14125. KiTEC has also entered in the market of UPVC SWR pipes, UPVC SWR Silent pipes as well as HDPE pipes.

KiTEC has also introduced based on in house research, pre-insulated composite pipe with 6 mm, 9 mm and 13 mm insulation thickness for the first time in the world.

QUALITY POLICY

We at KiTEC INDUSTRIES (INDIA) PRIVATE LIMITED manufacture Composite (Polymer-Aluminium-Polymer) /HDPE /UPVC pipes and fittings and Pre-Insulated Composite Pipes (Polymer-Aluminium-Polymer with insulation). We are committed to meet the requirements of customers - Internal and External with respect to Quality of our products and services. We shall concentrate on preventive methods and adopt an innovative approach to make Total Quality a way of life with an objective to “Do It Right, the first time”. We shall focus on continual improvements in all areas of our business. We shall create an environment in the organisation that will encourage the employees and suppliers to eliminate the non- conformances to generate error free output and to improve Quality of our products and services. We are committed to comply with the requirements of ISO 9001:2015 standards, including the statutory and regulatory requirements.



Concept of KiTEC Pipe

KiTEC is an aluminium and polyethylene composite that combines the best features of both materials to form a pipe that is light, strong and does not support corrosion. By combining the two materials along with adhesive layers, **KiTEC pipe avoids the unaccepted thermal expansion and deformation of plastic pipe.** At the same time **it retains the flexibility, frost resistance and ease of use associated with plastic.**

PROPERTIES AND SALIENT FEATURES

PHYSICAL PROPERTIES:

Malleable : The unique feature of KiTEC Pipe is it's malleability. KiTEC Pipe is easily formed into curves, can be set by hand and may require only bending springs when forming tight bends down to radius equivalent to 5 times the diameter of pipe. Unlike plastic plumbing pipes, KiTEC permanently holds whatever shape it is formed into and does not need additional clips or brackets to retain the shape of bends or curves.

Non-corrosive: KiTEC piping systems don't corrode. Will never pit or develop pin holes from aggressive water leading to premature failure.

Smooth surface: That results in avoiding permanent scale build up avoiding reduction in flow. Soluble encrustants, such as calcium carbonate do not readily precipitate onto the smooth walls of KiTEC pipes. In addition there is no reduction in flow coefficients as the pipe ages.

Hygiene: KiTEC is hygienic, non-toxic, rust-free and eliminates growth of microorganisms. This avoids contamination of water. KiTEC pipes have passed all the tests of pipe for potable water in accordance with British Standard BS 6920 by the British Water Quality Center.

Flame/Smoke Rating : KiTEC pipe has a Flame Spread of 5 and a Smoke Development of 5 as per ULC-S102.2. The ratings meet most building code requirements allowing the use of KiTEC in high-rise construction as well as in return air plenums and vertical shafts. Central Power Research Institute, Bangalore, classified the KiTEC Composite Pipes as HB when tested for flammability test as per ASTM D 635-2010.

Permeation : KiTEC's aluminum core acts as a permeation barrier against entry of contaminants and limits oxygen permeation to zero. Permeation is the molecular transport of gaseous chemicals, from the soil surrounding the pipe through the pipe wall and into the fluid being carried. Permeation may have adverse effects on the piping system, the conveyed fluid or both. KiTEC is widely used for the transmission and distribution of potable water providing a second line of defense for the plumbing system.

UV Resistance and Opacity : KiTEC pipes do not have any effect of UV radiation in outdoor installation. There is no light transmission through the pipe wall.

THERMAL PROPERTIES

Thermal Expansion : KiTEC has a low coefficient of linear expansion similar to copper tubing and is far superior to alternate plastic pipe (expansion/contraction rate about 10% of plastic pipe). This eliminates the need of installation "offsets" and the concern about abrading pipe due to constant movement as a result of temperature changes. Straight runs are always attainable with KiTEC pipe. Coefficient of Thermal Expansion is : $25 \times 10^{-6} / ^\circ\text{K}$. Low expansion coefficient is due to tie layer which eliminates the differential expansion of plastic and metal.

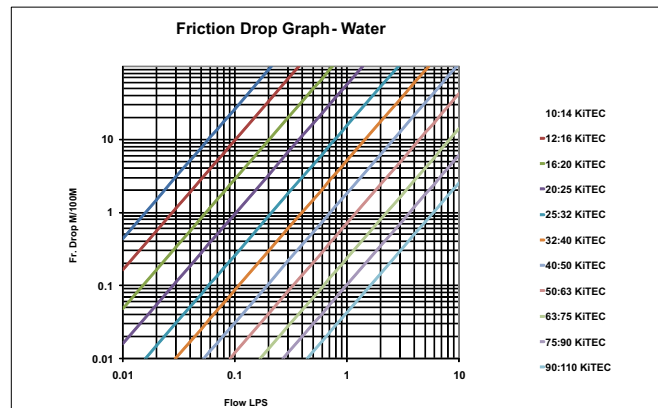
Resistance to freezing: In continuous flowing plumbing and water supply applications, KiTEC can withstand multiple cycles of freezing and thawing while under pressure without bursting up to -40°C temperature. Thawing can be done using a hot air blowgun, hot water injection and electric blanket or heating cable method. An open flame, torch or electric current should not be used to thaw the pipe.

Thermal Insulation: KiTEC is having Thermal Conductivity of 0.43 Watt/[m $^\circ\text{K}$]. KiTEC composite pipes provide an increased resistance to the onset of condensation or pipe sweating in a plumbing application. In case of hot water piping, the insulation requirement is only 50% of the same required for conventional metal pipes.

Rewriting the Standards

FLOW PROPERTIES

KiTEC pipe has smooth inside surface and hence is furr & scale free. It gives higher and consistent flow throughout the service life.



CHEMICAL RESISTANCE

Resists at 20° as well as 60°C.: Acids, Alcohol, Aldehyde, Ethylene Glycol, Bleach, Corrosion inhibitors, Detergents, Foodstuff, Petrol, Diesel, Fuel Oils, Veg/Mineral Oils.

Resists at ambient temperature. Performance yet to be ascertained at elevated temperatures. Beverages, Insecticides, Ketones, Oxidation agents, Paints, Salts, Surfactants/Soaps

Chlorine Resistance: KiTEC pipe has much better resistance to chlorine attack than other non-composite pipes because of the aluminum middle layer. The outer layer is not exposed to chlorine. Therefore, there is no reason for chlorine attack on the outer layer. KiTEC pipe is an excellent choice for continuous re-circulation plumbing applications.



KiTEC PE-AL-PE Pipes (IS 15450: 2022)

Description	Pipe Size								
	14 mm	16 mm	20 mm	25 mm	32 mm	40 mm	50 mm	63 mm	75 mm
Minimum Outside Diameter (mm)	14	16	20	25	32	40	50	63	75
Minimum Wall Thickness (mm)	1.6	1.7	1.9	2.3	2.9	3.9	4.4	5.8	7.3
Standard Coil Length (Meters)	200	200	200	100	100	100	100	50	50
Minimum Aluminium Thickness (mm)	0.18	0.18	0.23	0.23	0.28	0.33	0.47	0.57	0.67
Minimum Outer Layer Thickness (mm)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Maximum Weight (Kgs/ Meter)	0.09	0.11	0.15	0.23	0.36	0.57	0.83	1.32	1.92
Equivalent NB Size GI (Inch)	3/8	1/2	3/4	1	1¼	1½	2	2½	3

KiTEC PE-AL-PE Pipes (IS-15450) are having pressure rating of 13.8 Kg/Cm² at 23°C and 11.0 Kg/Cm² at 60 °C. Short term excursion to 95 °C will not affect the overall performance. Designed life span of KiTEC piping System is in excess of 50 years. The pipe are black in color and are UV resistant. Can be used for outdoor as well as concealed installations.

KiTEC PE-AL-PE (IAPMO IGC-India-308:2014) & PE-AL-PEX Pipes (IAPMO IGC-India-309:2014)



Description	Pipe Size									
	1216	1620	2025	2532	3240	4050	5063	6375	7590	90110
Minimum Outside Diameter (mm)	16	20	25	32	40	50	63	75	90	110
Minimum Wall Thickness (mm)	1.70	1.90	2.30	2.90	3.40	3.90	4.80	5.80	6.80	7.00
Standard Coil/Pipe Length (Meters)	200	200	100	100	100	100	50	50	6	6
Minimum Aluminium Thickness (mm)	0.17	0.17	0.19	0.23	0.23	0.23	0.50	0.60	0.70	0.80
Minimum Outer Layer Thickness (mm)	0.40	0.40	0.40	0.40	0.40	0.40	0.80	0.80	1.00	1.00
Maximum Weight (Kgs/Meter)	0.13	0.17	0.24	0.35	0.52	0.70	1.27	1.70	2.00	2.65
Equivalent NB Size GI (Inch)	½	¾	1	1¼	1½	2	2½	3	3½	4

KiTEC PE-AL-PE Pipes (IGC-308) are having inner layer in natural colour and outer layer in black colour with continuous blue line on outer layer and are UV resistant. These pipes are having pressure rating of 12.0 Kg/Cm² at 23° C and 6.0 Kg/Cm² at 65° C and being used for outdoor as well as concealed installations. These pipes offer the cost benefit of traditional plumbing systems, without compromising the basic features of composite pipes.

KiTEC PE-AL-PEX Pipes (IGC-309) are manufactured having inner layer from PEX a new class of Polyethylene materials designated as PEX (Cross Linked Polyethylene). With the improved property at elevated temperature, these pipes are suitable for applications having continuous operating temperature of 95 °C at 5.0 Kg/Cm². Rated pressure at 80 °C temperature is 8.0 Kg/Cm². Short term excursions to 110 °C will not affect the overall performance of these pipes. The pipes are having inner layer in Orange color and outer layer in black colour with continuous red line. These pipes are also UV resistant., can be used for outdoor as well as concealed installations.

KiTEC PEX-AL-PEX Pipes (ASTM F 1281) are manufactured having inner and outer layer of cross linked polyethylene (PEX). These pipes are having pressure rating of 13.8 Kg/Cm² at 23°C, 11.0 Kg/Cm² at 60°C and 8.6 Kg/Cm² at 83°C. Design life span for these pipes is in excess of 50 years.

Rewriting the Standards

Manufacturing Facility and Quality Control Laboratory



JOINTING METHODS

KiTEC pipes are joined by using compression/crimp fittings with internal sealing arrangement.



Composite Compression
1216 to 4050 Size



Composite / Brass Crimp
1216 to 2025 Size



Brass Compression
1014 to 4050



Push Fit
1216 to 2025 Size



Composite Compression
5063 to 90110 Size



Brass / SS Compression
5063 to 90110 Size



Composite Saddle Connection
4050 to 90110 Size



Brass / SS Saddle Connection
4050 to 90110 Size

APPLICATIONS

- Hot and Cold Water System
- Vacuum Systems
- Radiator Central Heating
- Compressed Air Systems
- Air Conditioning
- Under Floor Heating
- Gas Distribution
- Fuel Oil Lines
- Electrical / Telecommunication Conduits
- Solar Heating
- Insecticides Spraying
- Food/Chemical Processing
- Refrigerant Systems
- Jet Pump Piping

Other Developments



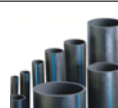
Pre-Insulated Composite Pipe

The Pre-insulated KiTEC Composite Pipes has been developed to meet the demanding standards of commercial hot and cold water reticulating systems. With excellent thermal insulation performance, Pre-insulated KiTEC Composite Pipes provides the energy retention properties required by current specifications.



PVC Silent Pipe

KiTEC-Silent is a system of pipes that is specially designed to reduce the noise that accompanies the evacuation of wastewater and rainwater, and also decrease the sounds that often occur when substances travel through sanitary pipes.



HDPE Pipe

HDPE Pipes from 32mm OD to 160mm OD as per IS 4984 are also produced by KiTEC



uPVC Pipe

KiTEC uPVC SWR Pipes in Jet Black color are in continuation to its philosophy of giving technologically superior products to the customer and value for his money.

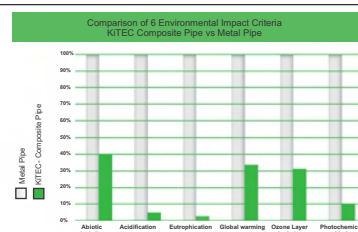


Multi-Floor Trap

KiTEC has developed a Floor Trap (63mm Water Seal) meeting all the requirements of international standards.



KiTEC is a Green Product



KiTEC is registered trademark owned by KiTEC Industries (India) Private Limited

To the best of our belief, the technical data set out in this publication is accurate. However it is purely for guidance purpose.