JINDAL
O.P. JINDAL GROUP

PRODUCT CATALOGUE



JINDAL PE-X TUBES PVT. LTD.

D.P. Jindal Group is India's largest Steel Pipe conglomerate with a strong work force of 2500 personnel & the pioneer in India for the manufacturing of Seamless and ERW pipes. The well- diversified D.P. Jindal Group has a major presence in other sectors such as Oil Well Drilling, Power Generation, and Finance & Leasing. Jindal pipes are being exported to many countries across the globe such as USA, Africa, Middle East, Bangladesh & Myanmar. Jindal now introduces Multi Layer Composite (MLC) pipes being produced at its state of the art manufacturing unit at Dehradun, Uttarakhand, India.

Jindal MLC Pipes combine the advantages of metal and plastic pipes and eliminate the disadvantages of both materials at the same time. The aluminum core is absolutely diffusion tight and reliably prevents oxygen or gases from permeating into the pipe. It compensates and reduces snap-back forces and heat expansion with changes in temperature.

Jindal MLC Pipes consist of an overlapped aluminum core with an inner and outer layer of polyethylene - PE. All the layers are permanently bonded together by intermediate adhesive layers. The aluminum thickness of Jindal MLC pipes has been selected to meet compressive and flexural strength requirements.

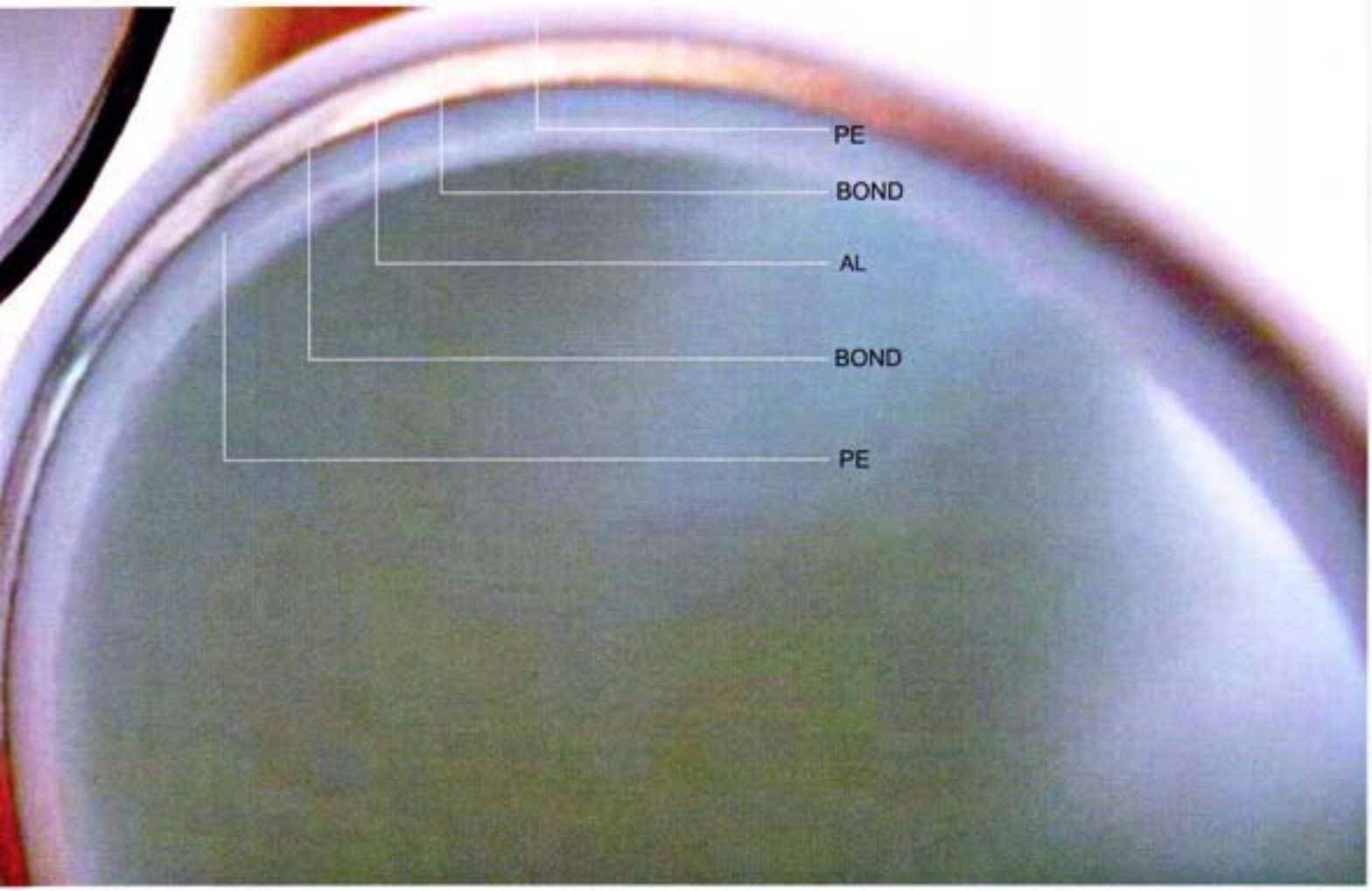
One - Stop Solution

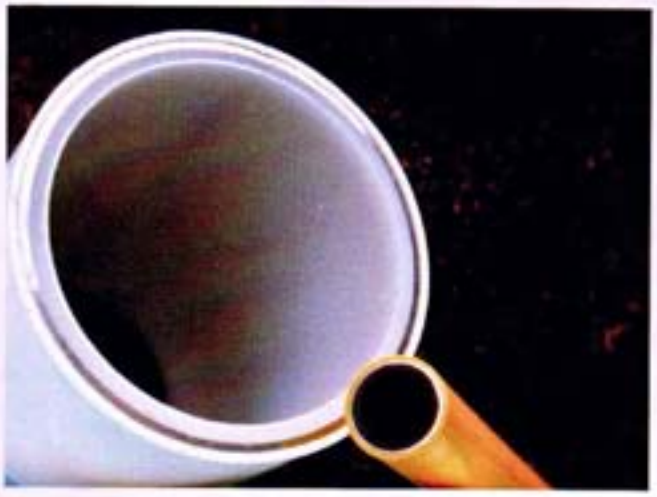
Our company has established itself as a complete service provider. We offer a high-quality range of pipes, fittings, valves, tools & accessories tailored to the requirements of piping system construction. Furthermore, our high quality product range has a number of outstanding features:

* 50 years of long working life
* Hygienic, toxic-free, rust-free
* No growth of micro-organisms
* 30% more flow of fluid than in metal pipes

Research and Development

We regularly subject our products to inspection and long-term testing. Our in-house laboratory keeps material specifications and long-term properties under constant scrutiny. This provides the necessary foundation for product enhancements performed within our Research and Development department. As a result, you will always be supplied with innovative products of the highest possible quality and latest technology in the plumbing and piping system.





Size Range	Inner Dia.	Outer Dia.
1014	10mm	14mm
1216	12mm	16mm
1418	14mm	18mm
1620	16mm	20mm
2025	20mm	25mm
2632	26mm	32mm
3240	32mm	40mm
4150	41mm	50mm

Sizes 1014 to 4150

Pipe A/UV HDPE, for Cold Water distribution, temp. -40°C to 80°C, White color/Black

Pipe B MDPE / PE-RT, for Hot Water distribution, temp. -40°C to 95°C, Orange

Pipe C HDPE, for oxygen and gas supply, temp. -20°C to 50°C, Yellow color

Jindal MLC Pipes are manufactured as per IS 15450:2004, ASTM F1282 & ASTM F1281

Even in conditions where the water is subject to freezing, Jindal MLC pipes for cold water can withstand water at temperature up to -40°C due to their Frost Resistance characteristics.

Jindal MLC pipes for hot water are suitable for long term extrusion of hot water upto 95°C due to their Low Thermal Conductivity. The low thermal conductivity due to the MDPE/PE-RT coating reduces the heat loss when compared to other pipes like G.I., Copper, Aluminum & HDPE.

The middle layer of aluminum enables Jindal MLC gas pipes to withstand high working pressure and ensures no gas or oxygen permeability.

Cold and Hot water distribution

The smooth inner layer of Jindal MLC pipes prevent deposit, accumulation and corrosion leading up to 30% more flow of fluid than in metal pipes. They are easy to bend & install directly on girder or inside wall and cement concrete. They can be easily found with a simple metal detector. The combination of plastic and metal makes Jindal MLC pipes a permanently reliable system for its use in all common hot and cold water installations.

Solar System, Air Conditioning and Refrigeration System

Frost resistant; High thermal preservation lowers the cost of temperature keeping and improves the efficiency of these systems.

Underfloor Heating System

Stable form in bends and over a distance; Jindal MLC pipes can be directly installed up to 200 meters without any fittings. It works well in a wide range of temperature from -40°C to 95°C.

Medical, Foodstuff and Chemical Industry's Pipe System

The inner and outer layers of Jindal MLC pipes are made of special PE with strong chemical, corrosion and contamination resistance. The aluminum core makes the pipe 100% gas and oxygen tight. Therefore, as medical and oxygen supply pipe, Jindal MLC pipe is hygienic and leak-proof and ensures the purity of its carrying media. As a supply pipe for food industry, it can eliminate contamination during manufacturing. Furthermore, the static-free PE layers can also withstand all kinds of acid and alkali solution (in density) below 60°C, which enables the pipe to be used in the chemical industry with no extra protection.

Gas and Air Distribution

The aluminum layer allows Jindal MLC pipes to withstand high working pressure and prevent oxygen and gases from permeating into the pipe. They are easily bent, which makes the use of numerous fittings unnecessary. Jindal MLC pipes are safe and reliable choice for compressed air, gas and oxygen supply.

Screw and Press Fittings

Compression or Screw Fittings

Compression Fittings combine the positive feature of high reliability with a simple installation technique. The fittings do not require any special tools. The permanent pipe joint is achieved by compression i.e. by tightening the nut against the coned-shaped olive. The profiles of the two pieces are designed to cause a progressive shrinkage of the coned-shaped olive and to distribute the compression forces across the contact surface. A seal housing has been designed with a special slip-proof profile called O-rings that come into direct contact with the pipe.

The simplicity and economic aspect of this system is based on the use of spanners, standardized threads (GAS ISO), which make it possible to connect with any system.

Advantages of Screw Fittings

* Developed with advance forging technique.
* Easy and convenient installation.
* Optimized structure design.

Crimp or Press Fittings

Crimp Fittings have been designed to further simplify the installation operations by significantly reducing the time required for assembly. This technique also causes the pipe to deform permanently by compression, which is achieved by the action of a pressing machine fitted with suitable jaws. The machine operates by permanently deforming a ferrule, suitably sized to ensure that the pressure is exerted even when the temperature changes occur, and a permanent leak-proof seal is achieved by the special slip proof profile of the tail and two O-rings that are in direct contact with the pipe.

Advantages of Press Fittings

* Made from high quality Brass rod; cold cut and hot forge processed to make compact structure.
* Fast connection through specially devised tool.
* Perfect sealing ensures long service life.
* Brand-new design makes a solid appearance.

Jointing Procedure for Screw Fittings

1a. Cut off Jindal MLC Pipe vertically with the Pipe Cutter.

2a. Round and bevel the end holes and make inclines of atleast 2 mm.

3a. Choose the right size of fitting; put the nut over the pipe and slide the compression ring over the pipe. Make sure that the mouth of the mut and the pipe faces the same direction.

4a. Push the inserts into the pipe up to the shoulder. Take care not to damage the O-ring.

5a. Use a spanner to tighten it up completely.

1a & 1b

2a

3a & 4a

5a

The pipe is bended using internal bending spring. The Aluminum makes the pipe form-stable (i.e. non spring-back after bending) & impermeable to oxygen diffusion. Once bent, the pipe maintains its shape.

Jointing Procedure for Press Fittings

1b. Cut off Jindal MLC Pipe vertically with the Pipe Cutter.

2a. Round and bevel the end holes and make a pouring angle.

2b. Insert the Fitting into the pipe till the pipe end tightly reaches the shoulder of the fitting.

3b. Install the fitting pressing clamp according to the instruction manual. Put the sleeved fitting into the clamp jaw and press the clamp until the jaws are completely closed. Now the pressing is finished.

For manual pressing clamp, close the jaw manually until the automatic ratchet releases.

2b

3b

Thermal Properties

Thermal and Pressure Resistance

1Mpa = 145 psi = 10 bar

Specification (mm)	Minimum burst pressure (MPa)	Mini pipe ring strength (N)	Long-term hydrostatic strength (MPa)	Working Temperature (°C)			Working pressure (MPa)	
				Pipe A/UV	Pipe B	Pipe C	Pipe/UV	Pipe C
1014	7.0	2300	2.7	-40°~80°	-40°~95°	-20°~50°	1.0	0.4
1216	6.0	2300	2.7					
1418	6.0	2300	2.7					
1620	5.0	2500	2.7					
2025	4.0	2500	2.3					
2632	4.0	2500	2.1					
3240	4.0	2800	2.1					
4150	3.5	3200	2.0					

Thermal Conductivity

0.45W/m.k. - about 1/100 of steel pipe but not only several times higher than that of insulating materials. No need of insulation with Jindal Hot Water MLC pipes.

Thermal Expansion

Jindal MLC Pipes have an extremely low co-efficient of linear expansion 25 x 10^{-6} m/m.k., Only 1/8th of all polyethylene pipes, almost same as that of aluminum pipes.

Expansion of different types of pipe	
Type of pipe	Expansion expressed in mm for a pipe length of 50m with 50° C
PEX	500 mm
PP	450 mm
PB	375 mm
PVC	200 mm
Jindal MLC Pipe	59.50 mm
Copper	41.25 mm
Galvanized Steel	28.50 mm
Stainless Steel	27.50 mm

Thermal Strength (Pressure Rating)

PIPE A, B & UV

Table 2

Temperature (°C)	Mpa	psi
23	1.4	200
60	1.1	160
95	1.0	145

PIPE C

Temperature (°C)	Mpa	psi
40	0.4	200

Low Temperature Resistance

Jindal MLC Pipes can work at low temperature of -40°C without bursting (-20°C in case of Gas Pipes).

The use of Multilayer Pipework
can reduce installation time by up to 45% in
comparison to Steel, Galvanized Iron, Copper or PP-R pipes.

Physical Properties

Burning Resistance

The PE-AL composite structure provides Jindal MLC pipes with a much better burning resistance as compared to all other polyethylene pipes. It may reach up to Grade B1 of GB8624 - stipulations for wire & cable conduit plastic material.

Malleable

Uniquely, Jindal MLC pipes are completely malleable & can be easily curved by hands. They can bend down to a radius equivalent to 5 times the diameter of the pipe.

Permeability

The Aluminum core of Jindal MLC pipes guarantees static resistance & light & oxygen tightness. It acts as a barrier against the entry of any contaminant.

UV Resistance

Jindal MLC pipes are UV stabilized / UV resistant.

Clarity, Colour, Taste,

	1-3 Days	4-6 Days	7-9 Days	Standard Value for 3 Extn.
Clarity, Color, Taste, Odour, Foaming	NSA	NSA	NSA	Not Significantly affected
C migration (mg c/m^{2}d)	0.3	0.3	0.3	≤ 2.5
Cl^2 consumption (Cl/m^{2}d)	0.6	0.6	0.6	≤ 2.0

Additional Requirements

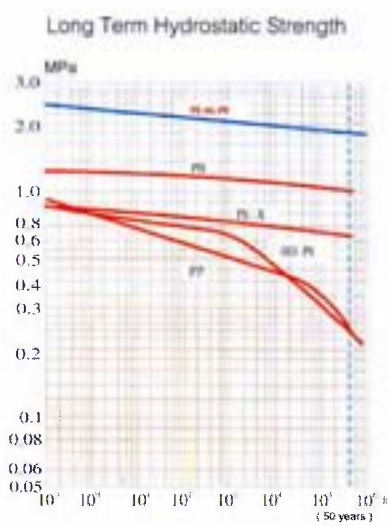
Warm Water 60°C	1-2 Hours	3-4 Hours	5-6 Hours	Standard Value for 3 Extn.
Clarity, Color, Taste, Odour, Foaming	NSA	NSA	NSA	Not Significantly affected
C migration (mg c/m^{2}d)	1.4	0.6	0.5	≤ 2.5

Data came from TZW (Germany)

Chemical Properties

Chemical Resistance of Jindal MLC pipes

Base Material / Resin		PE-AL-PE
Used for		Plumbing
Chemicals		Chemical Resistant
Acids	Weak	E
	Strong	E
Alkalis	Weak	E
	Strong	E
Organic Solvents		G
Alcohols		E
Hydrocarbons		E
Fuels / Oils		E



Jindal MLC Pipes inherit all the properties of HDPE for Chemical Resistance. In additional to this, they also resist the swelling leading to very good chemical resistance for liquid hydrocarbons such as Diesel, Petrol, Kerosene & Fuel Oils due to the presence of Aluminum layer.

Jindal MLC pipes' inner & outer layers of PE do not react chemically & guarantee safety & purity on its carrying media. Their corrosion resistant nature ensures that the foodstuff is not contaminated. Jindal MLC pipes are resistant to all alkalis, acids & salts upto 80°C.

DIMENSIONS & THICKNESS

Pipe Size	Outside Diameter (mm)		Wall Thickness (mm)		All Thickness (mm) Min.	Inner Layer Thickness (mm) Min.	Outer Layer Thickness (mm) Min.
	Nominal	Tolerance	Nominal	Tolerance			
1014	14	+0.3	1.90	+0.45	0.18	0.8	0.4
1216	16					0.9	
1620	20					1.0	
2025	25		2.40	+0.60	0.23	1.1	
2632	32		2.90		0.28	1.2	
3240	40	+0.1	4.00		0.35	1.8	0.7
4150	50	+0.5	4.50	+0.70	0.45	3.0	1.0

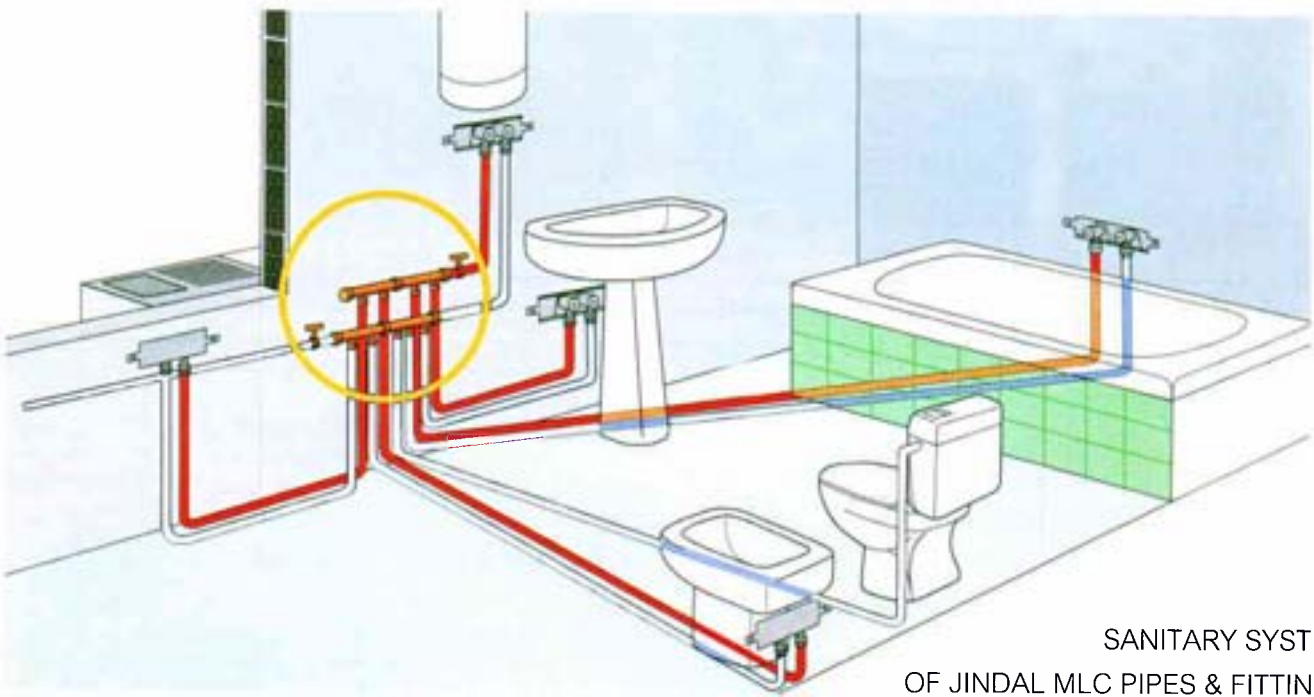
COMPARISON BETWEEN JINDAL MLC PIPES & OTHER PIPES

Characteristics	JINDAL MLC Pipes	All Plastic Pipes	Galvanized Pipes
Material	PE-AL-PE	PP-R, PVC, PE or PB	Steel
Working Life	Longest	Longer or Long	Short
Hygiene	Best	Good	Bad
Installation	Easy	Easy	Difficult
Self Weight	Light	Light	Heavy
Packing	Coil	Coil or Straight	Straight
Cutting	Easiest	Easy	Difficult
Bending	Easy & no spring back	Easy but springs back	No Bending
Permeability	None	Oxygen Diffusion	None
Burning Resistance	Strong	Normal	Strong
Corrosion Resistance	High	High	Bad
Pressure Resistance	Good	Bad	Best
Shock Resistance	High	Normal	Bad

WEIGHT & MEASUREMENTS

Pipe Size	Meters Per Carton	Net Weight (Kgs)
1014	200	18.6+/-2
1216	200	22.0+/-2
1620	200	29.2+/-2
2025	100	21.5+/-2
2632	50	16.8+/-2

Pipe Size	Meters Per Carton	Net Weight (Kgs)
3240	6	3.3+/-1
4150	6	5.0+/-1



SANITARY SYSTEM
OF JINDAL MLC PIPES & FITTINGS

DIMENSIONS & THICKNESS

Pipe Size	Outside Diameter (mm)		Wall Thickness (mm)		All Thickness (mm) Min	Inner Layer Thickness (mm) Min	Outer Layer Thickness (mm) Min.
	Nominal	Tolerance	Nominal	Tolerance			
1014	14	+0.3	1.90	+0.45	0.18	0.8	0.4
1216	16					0.9	
1620	20					1.0	
2025	25		2.40	+0.60	0.23	1.1	
2632	32		2.90		0.28	1.2	
3240	40	+0.1	4.00		0.35	1.8	0.7
4150	50	+0.5	4.50	+0.70	0.45	3.0	1.0

COMPARISON BETWEEN JINDAL MLC PIPES & OTHER PIPES

Characteristics	JINDAL MLC Pipes	All Plastic Pipes	Galvanized Pipes
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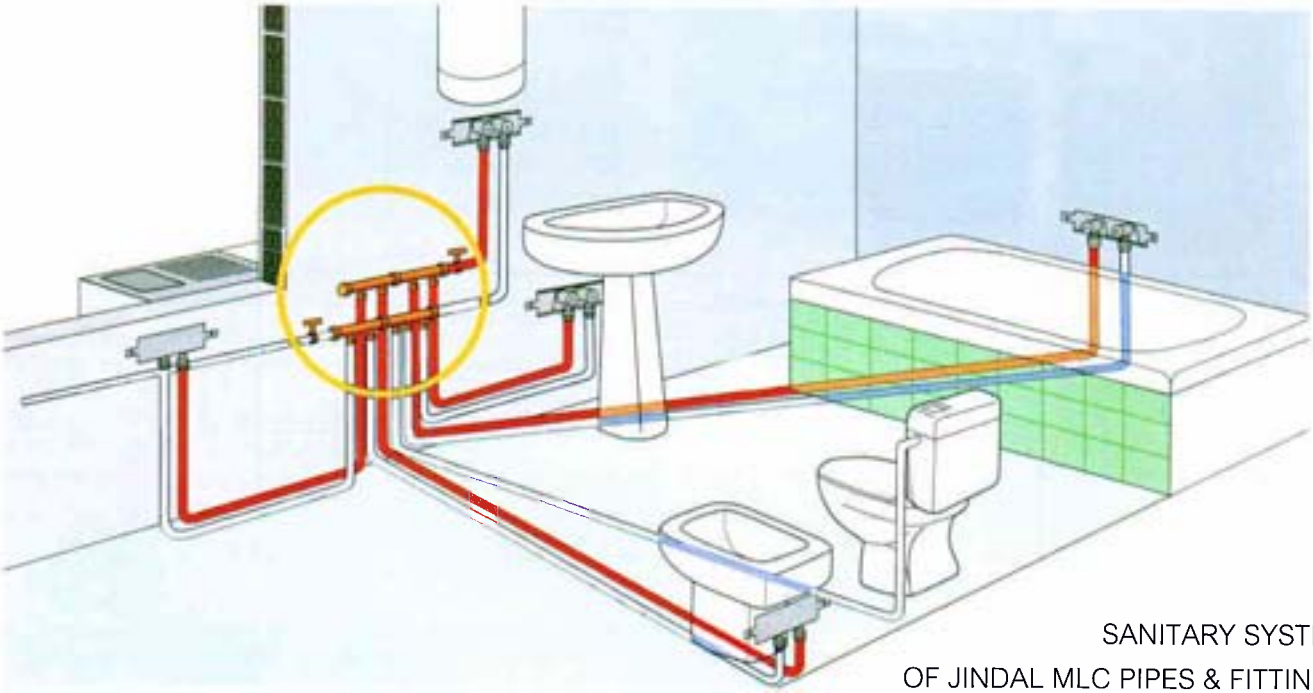
Packing	Coil	Coil or Straight	Straight
Cutting	Easiest	Easy	Difficult
Bending	Easy & no spring back	Easy but springs back	No Bending
Permeability	None	Oxygen Diffusion	None
Burning Resistance	Strong	Normal	Strong
Corrosion Resistance	High	High	Bad
Pressure Resistance	Good	Bad	Best
Shock Resistance	High	Normal	Bad

WEIGHT & MEASUREMENTS

Pipe Size	Meters Per Carton	Net Weight (Kgs)
1014	200	18.6+/-2
1216	200	22.0+/-2
1620	200	29.2+/-2
2025	100	21.5+/-2
2632	50	16.8+/-2

Pipe Size	Meters Per Carton	Net Weight (Kgs)
3240	6	3.3+/-1
4150	6	5.0+/-1



SANITARY SYSTEM
OF JINDAL MLC PIPES & FITTINGS

Brass Fittings (Screw & Press)

Equal Union

Both ends connected to pipes of same size, e.g. S 1620 x 1620 means both ends connected to pipes 1620

Specification
S 1014 x 1014
S 1216 x 1216
S 1418 x 1418
S 1620 x 1620
S 2025 x 2025
S 2632 x 2632
S 3240 x 3240
S 4150 x 4150

Unequal Union

Both ends connected to pipes of different sizes, e.g. S 1620 x 1216 means one end connected to pipe 1620, the other to pipe 1216.

Specification
S 1216 x 1014
S 1418 x 1620
S 1620 x 1216
S 2025 x 1216
S 2025 x 1418
S 2025 x 1620
S 2632 x 1620
S 2632 X 2025
S 4150 x 3240

Male Union

One end connected to pipe, the other to female thread, e.g. S 1620 x ½ means one end connected to pipe 1620, the other to ½ female thread.

Specification
S 1014 x 1/2 M
S 1216 x 1/2 M
S 1418 x 1/2 M
S 1620 x 1/2 M
S 1620 x 3/4 M
S 2025 x 3/4 M
S 2025 x 1 M
S 2632 x 1 M
S 2632 x 1-1/4 M
S 2632 x 1-1/2 M
S 3240 x 1-1/2 M
S 4150 x 1-1/2 M
S 4150 x 2 M

Female Union

One end connected to pipe, the other to male thread, e.g. S 1620 x ½ means one end connected to pipe 1620, the other to ½ male thread

Specification
S 1014 x 1/2 F
S 1216 x 1/2 F
S 1418 x 1/2 F
S 1620 x 1/2 F
S 1620 x 3/4 F
S 2025 x 1/2 F
S 2025 x 3/4 F
S 2025 x 1 F
S 2632 x 3/4 F
S 2632 x 1-1/4 F
S 3240 x 1 F
S 4150 x 1 F

Equal Elbow

Both ends connected to pipes of same sizes, e.g. L 1620 x 1620 means both ends connected to Pipes 1620

Specification
L 1014 x 1014
L 1216 x 1216
L 1418 x 1418
L 1620 x 1620
L 2025 x 2025
L 2632 x 2632
L 3240 x 3240
L 4150 x 4150

Male Elbow

One end connected to pipe, the other to female thread, e.g. L 1620 x ½ means one end connected to pipe 1620, the other to ½ female thread

Specification
L 1014 x 1/2 M

Female Elbow

One end connected to pipe, the other to male thread e.g. L 1620 x ½ means one end connected to pipe 1620, the other to ½ male thread

Specification
L 1014 x 1/2 F
L 1216 x 1/2 F
L 1418 x 1/2 F
L 1620 x 1/2 F
L 1620 x 3/4 F
L 2025 x 1/2 F
L 2632 x 1-1/4 F

Wall Plated Female Elbow

One end connected to pipe, the other to 1/2 male thread

Specification
L 1014 x 1/2 F (Z)
L 1216 x 1/2 F (Z)
L1620 x 1/2 F (Z)

Female Tee

Middle end connected to male thread, the other two to pipes, e.g. T 1620 x 1/2 F x 1620

Specification
T 1014 x 1/2 F x 1014
T 1216 x 1/2 F x 1216
T 1418 x 1/2 F x 1418
T 1620 x 1/2 F x 1620
T 2025 x 1/2 F x 2025
T 3240 x 1 F x 3240


Equal Tee

Three ends connected to pipes of same sizes, e.g. T 1620 x 1620 x 1620 means three ends connected to Pipes 1620.

Specification

L 1014 x 1014 x 1014
L 1216 x 1216 x 1216
L 1418 x 1418 x 1418
L 1620 x 1620 x 1620
L 2025 x 2025 x 2025
L 2632 x 2632 x 2632
L 3240 x 3240 x 3240
L 4150 x 4150 x 4150


Unequal Tee

Three ends connected to pipes, with one or two ends different in size from the other end(s), e.g. T 2025 x 1620 x 1620

Specification

T 1620 x 1216 x 1620
T 1620 x 1418 x 1620
T 1620 x 2025 x 1620
T 2025 x 1216 x 2025
T 2025 x 1418 x 2025
T 2025 x 1620 x 1620
T 2025 x 1620 x 2025
T 2632 x 1216 x 2632
T 2632 x 1620 x 2632
T 2632 x 2025 x 2632
T 4150 x 3240 x 4150

Tools & Accessories


Gas Nipple Gas Valve

Specification

S 1014 (Nipple)
S 1216 (Nipple)
S 1216 x ½ M (Valve)
S 1216 x ½ F (Valve)


Pipe Cutting Tools

Specification

GJ
QGQ


Plastic & Metal Reamers

Specification

ZYS 14 - 32 (Plastic)
ZYJ 14 - 32 (Metal)


T- Reamer Bending Tool

Specification

JD 3240 (T-Reamer)
JD 4150 (T-Reamer)
WGQ - 6 in 1 (Bending Tool)

Pressing Clamp

Specification

SYQ 14 - 32

Bending Spring

Specification

WH 1014
WH 1216
WH 1418
WH 1620
WH 2025
WH 2632

JINDAL

UNITECH BUSINESS Inc

 # 55, 4th Main, Near TVS Show Room, Sunkadakatte,
Magadi Main Road, Bangalore - 91.
Phone : 64512111, 23482159,
Tele Fax : 23482160
E-mail : sales@unitechbusiness.com
unitechjindal@hotmail.com
www : unitechbusiness.com

Works : D-10, Sara Industrial Estate,
Vill. Rampur, Chakrata Road,
Dehradun, Uttarakhand (INDIA)
Tel.: +91-135-2698881/82