FinOlex PIPES

PLUMBING
PIPES & FITTINGS

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ASTM PLUMBING PIPES & FITTINGS:

Finolex ASTM (PVC-U) Plumbing pipes & fittings are used for plumbing & potable water applications. Manufactured with added strength & crafting precision, Finolex PVC-U pipes have a prolonged advantage over conventional pipes, lasting for over 50 years surpassing traditional metal & other PVC pipes.

These pipes are manufactured according to ASTM D 1785 standards, available in Schedule 40 & 80 series with a standard length of 3 and 6 meters & even come with an option of plain or threaded ends.

The maximum service temperature is 60° C. The product's abrasion resistance, lightweight, mechanical strength, toughness and durability are the key reasons why Finolex Pipes is the category leader of housing & potable water application plumbing pipes.

PIPE DERATING FACTOR

PVC-U ASTM Plumbing pipes are ideally suited for a water temperature of 23° C. As the water temperature increases, the working pressure reduces (e.g. if the working pressure is 100% at 23° C temperature, it will be 50% at 45° C temperature and only 22% at 60° C temperature).

Service Temp (°C)	23	30	35	40	45	50	55	60
% of working pressure	100	90	75	62	50	40	30	22

DIMENSIONS OF ASTM PLUMBING PIPES

As per ASTM D 1785

Nominal Size in inches	Outside Diameter in mm	SCHEDULE 40		SCHEDULE 80	
		Wall Thickness (t) in mm	Working Pressure kgf/cm²	Wall Thickness (t) in mm	Working Pressure kgf/cm²
½"	21.34 (± 0.10)	2.77 (+0.51)	41.40	3.73 (+0.51)	58.60
¾"	26.67 (± 0.10)	2.87 (+0.51)	33.10	3.91 (+0.51)	47.60
1"	33.40 (± 0.13)	3.38 (+0.51)	31.00	4.55 (+0.53)	43.40
1¼"	42.16 (± 0.13)	3.56 (+0.51)	25.50	4.85 (+0.58)	35.90
1½"	48.26 (± 0.15)	3.68 (+0.51)	22.80	5.08 (+0.61)	32.40
2"	60.32 (± 0.15)	3.91 (+0.51)	19.30	5.54 (+0.66)	27.60
2½"	73.02 (± 0.18)	5.16 (+0.61)	20.70	7.01 (+0.84)	29.00
3"	88.90 (± 0.20)	5.49 (+0.66)	17.90	7.62 (+0.91)	25.50
4"	114.30 (± 0.23)	6.02 (+0.71)	15.20	8.56 (+1.02)	22.10
6"	168.28 (± 0.28)	7.11 (+0.86)	12.40	10.97 (+1.32)	19.30
8"	219.08 (± 0.38)	8.18 (+0.99)	11.00	12.70 (+1.52)	17.20

ASTM FITTINGS

As per ASTM D 2467 in Schedule 80 series

Fittings for ASTM Plain ended pipes are available in Schedule 80 series. The joint formed is a permanent and homogeneous joint using solvent cement.

REDUCING BUSH:

To reduce the internal diameter of the fittings.

mm	26.67 x 21.34	33.40 x 21.34	33.40 x 26.67
Inch	¾" x ½"	1" x ½"	1" x ¾"

mm	42.16 x 33.40	48.26 x 21.34	48.26 x 42.16	60.32 x 48.26
Inch	1¼" x 1"	1½" x ½"	1½" x 1¼"	2" x 1½"

mm	73.02 x 60.32	88.90 x 73.02	114.30 x 88.90	-
Inch	2½" x 2"	3" x 2½"	4" x 3"	-

COMPACT BALL VALVE:

To allow a quick and convenient disconnection of water supply.

mm	21.34	26.67	33.4	42.16	48.26	60.32
Inch	½"	¾"	1"	1¼"	1½"	2"

COUPLER:

To join two lengths of pipes.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

ELBOW: (Plain/Threaded*):

To give a 90° turn to a pipe line.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

*Threaded Elbow available in sizes 21.34 mm (½") to 60.32 mm (2") with IS 554, BSPT threads at one end.

ELBOW (45°):

To give a 45° turn to a pipe line.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

FEMALE THREADED ELBOW 90° (Brass Insert):

To connect male threaded CP/metal fittings like taps, showers, etc. to a pipeline.

mm	21.34	26.67	33.4	26.67 x 21.34	33.40 x 21.34
Inch	½"	¾"	1"	¾" x ½"	1" x ½"

REDUCING ELBOW:

To give a 90° turn to a reduced pipeline.

mm	33.40x26.67	26.67x21.34	33.40x21.34
Inch	1" x ¾"	¾" x ½"	1" x ½"

END CAP:

To plug the end of a pipeline for testing and for protection during construction.

mm	21.34	26.67	33.4	42.16	48.26	60.32
Inch	½"	¾"	1"	1¼"	1½"	2"

FAUCET:

To allow a quick and convenient disconnection of water supply.

Inch	1/2"	-

FAUCET II:

To allow a quick and convenient disconnection of water supply.

Inch	1/2"	-

FTA (Female Threaded Adaptor):

To connect male threaded fittings to a pipeline.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

FTA - Female Threaded Adaptor (Brass Insert):

To connect male threaded CP/Metal fittings like taps, showers, etc. to a pipeline.

mm	21.34	26.67	33.4	42.16	48.26
Inch	½"	¾"	1"	1¼"	1½"

REDUCING FTA (Brass Insert):

To connect male threaded CP/Metal fittings like taps, showers etc. to a bigger pipeline.

mm	21.34 x 26.67	21.34 x 33.40
Inch	½" x ¾"	½" x 1"

MTA (Male Threaded Adaptor):

To connect female threaded fittings to a pipeline.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

MTA - Male Threaded Adaptor (Brass Insert):

To connect female threaded CP/Metal fittings like taps, showers, etc. to a pipeline.

mm	21.34	26.67	33.4	42.16	48.26
Inch	½"	¾"	1"	1¼"	1½"

REDUCING MTA (Brass Insert):

To connect female threaded CP/metal fittings like taps, showers etc. to a bigger pipeline.

mm	21.34 x 26.67	21.34 x 33.40
Inch	½" x ¾"	½" x 1"

PIPE CLIP:

To fix and secure the pipeline to a wall or a flat surface.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

REDUCER:

To reduce the main line.

mm	26.67 x 21.34	33.40 x 26.67	33.40 x 21.34
Inch	¾" x ½"	1" x ¾"	1" x ½"

mm	42.26 x 21.34	42.16 x 26.67	42.16 x 33.40	48.26 x 21.34
Inch	1¼" x ½"	1¼" x ¾"	1¼" x 1"	1½" x ½"

mm	48.26 x 26.67	48.26 x 33.40	48.26 x 42.16	60.32 x 21.34
Inch	1½" x ¾"	1½" x 1"	1½" x 1¼"	2" x ½"

mm	60.32 x 26.67	60.32 x 33.40	60.32 x 42.16	60.32 x 48.26
Inch	2" x ¾"	2" x 1"	2" x 1¼"	2" x 1½"

mm	73.02 x 21.34	73.02 x 26.67	73.02 x 33.40	73.02 x 42.16
Inch	2½" x ½"	2½" x ¾"	2½" x 1"	2½" x 1¼"

mm	73.02 x 48.26	73.02 x 60.32	88.90 x 21.34	88.90 x 26.67
Inch	2½" x 1½"	2½" x 2"	3" x ½"	3" x ¾"

mm	88.90 x 33.40	88.90 x 42.16	88.90 x 48.26	88.90 x 60.32
Inch	3" x 1"	3" x 1¼"	3" x 1½"	3" x 2"

mm	88.90 x 73.02	114.30 x 21.34	114.30 x 26.67	114.30 x 33.40
Inch	3" x 2½"	4" x ½"	4" x ¾"	4" x 1"

mm	114.30 x 42.16	114.30 x 48.26	114.30 x 60.32	114.30 x 73.02
Inch	4" x 1¼"	4" x 1½"	4" x 2"	4" x 2½"

mm	114.30 x 88.90	-	-	-
Inch	4" x 3"	-	-	-

STEP OVER BEND:

To cross over an existing pipe line.

mm	21.34	26.67	33.4
Inch	½"	¾"	1"

TANK NIPPLE:

To connect the pipeline to a tank.

mm	21.34	26.67	33.4	42.16	48.26	60.32
Inch	½"	¾"	1"	1¼"	1½"	2"

TEE (Plain/Threaded*):

To take a bypass or a service line from the main line.

mm	21.34	26.67	33.4	42.16
Inch	½"	¾"	1"	1¼"

mm	48.26	60.32	73.02	88.9	114.3	-
Inch	1½"	2"	2½"	3"	4"	-

*Threaded Tee available in sizes 21.34 mm (½") to 60.32 mm (2") with IS 554, BSPT threads.

FEMALE THREADED TEE (Brass Insert):

To connect male threaded CP/Metal fittings like taps, showers etc. to a pipeline.

mm	21.34	26.67	33.4	26.67 x 21.34	33.40 x 21.34
Inch	½"	¾"	1"	¾" x ½"	1" x ½"

REDUCING TEE:

To take a reducing bypass or service line from a main line.

mm	26.67 x 21.34	33.40 x 26.67	33.40 x 21.34
Inch	¾" x ½"	1" x ¾"	1" x ½"

mm	42.26 x 21.34	42.16 x 26.67	42.16 x 33.40	48.26 x 21.34
Inch	1¼" x ½"	1¼" x ¾"	1¼" x 1"	1½" x ½"

mm	48.26 x 26.67	48.26 x 33.40	48.26 x 42.16	60.32 x 21.34
Inch	1½" x ¾"	1½" x 1"	1½" x 1¼"	2" x ½"

mm	60.32 x 26.67	60.32 x 33.40	60.32 x 42.16	60.32 x 48.26
Inch	2" x ¾"	2" x 1"	2" x 1¼"	2" x 1½"

mm	73.02 x 21.34	73.02 x 26.67	73.02 x 33.40	73.02 x 42.16
Inch	2½" x ½"	2½" x ¾"	2½" x 1"	2½" x 1¼"

mm	73.02 x 48.26	73.02 x 60.32	88.90 x 21.34	88.90 x 26.67
Inch	2½" x 1½"	2½" x 2"	3" x ½"	3" x ¾"

mm	88.90 x 33.40	88.90 x 42.16	88.90 x 48.26	88.90 x 60.32
Inch	3" x 1"	3" x 1¼"	3" x 1½"	3" x 2"

mm	88.90 x 73.02	114.30 x 21.34	114.30 x 26.67	114.30 x 33.40
Inch	3" x 2½"	4" x ½"	4" x ¾"	4" x 1"

mm	114.30 x 42.16	114.30 x 48.26	114.30 x 60.32	114.30 x 73.02
Inch	4" x 1¼"	4" x 1½"	4" x 2"	4" x 2½"

mm	114.30 x 88.90	-	-	-
Inch	4" x 3"	-	-	-

CROSS TEE:

To take a double bypass or service lines from a main line.

mm	21.34	26.67	33.4
Inch	½"	¾"	1"

UNION:

To allow quick and convenient disconnection of pipes for maintenance or fixture replacement.

mm	21.34	26.67	33.4	42.16	48.26	60.32
Inch	½"	¾"	1"	1¼"	1½"	2"

THREADED END PLUG:

Fitted to female threaded adaptors during the testing of a pipeline.

mm	21.34	26.67
Inch	½"	¾"

FEATURES & BENEFITS

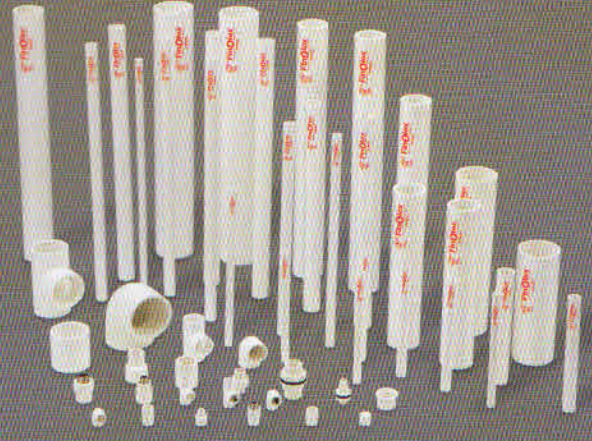
- Lightweight therefore ease in handling and transportation.
- Low installation and maintenance costs.
- Added mechanical strength makes the system ideal for all applications and conditions.
- Smooth inner surface allows greater flow of water.
- Suitable for potable water transportation.
- Lead free.
- Self-extinguishing and do not support combustion.
- Jointing can be done without the laborious threading operation.
- UV stabilized ensuring protection from direct sunlight.
- High tensile strength can withstand internal operating pressures within an acceptable range of temperatures.
- Meets global standards for housing & industry application.
- Heavy pressure rating.
- Tough, durable and immune to termites, fungus, bacteria, algae formation, galvanic and electrolytic action.
- Corrosion free & chemical resistant (Immune to acids, alkalis, organic chemicals, oils, etc.)
- Low thermal conductivity, preventing external 'sweating'.
- Finolex medium and heavy duty solvent cements create 100% leak proof jointing.

APPLICATION

Finolex ASTM plumbing pipes are designed for potable water distribution as well as plumbing. They can be successfully used for

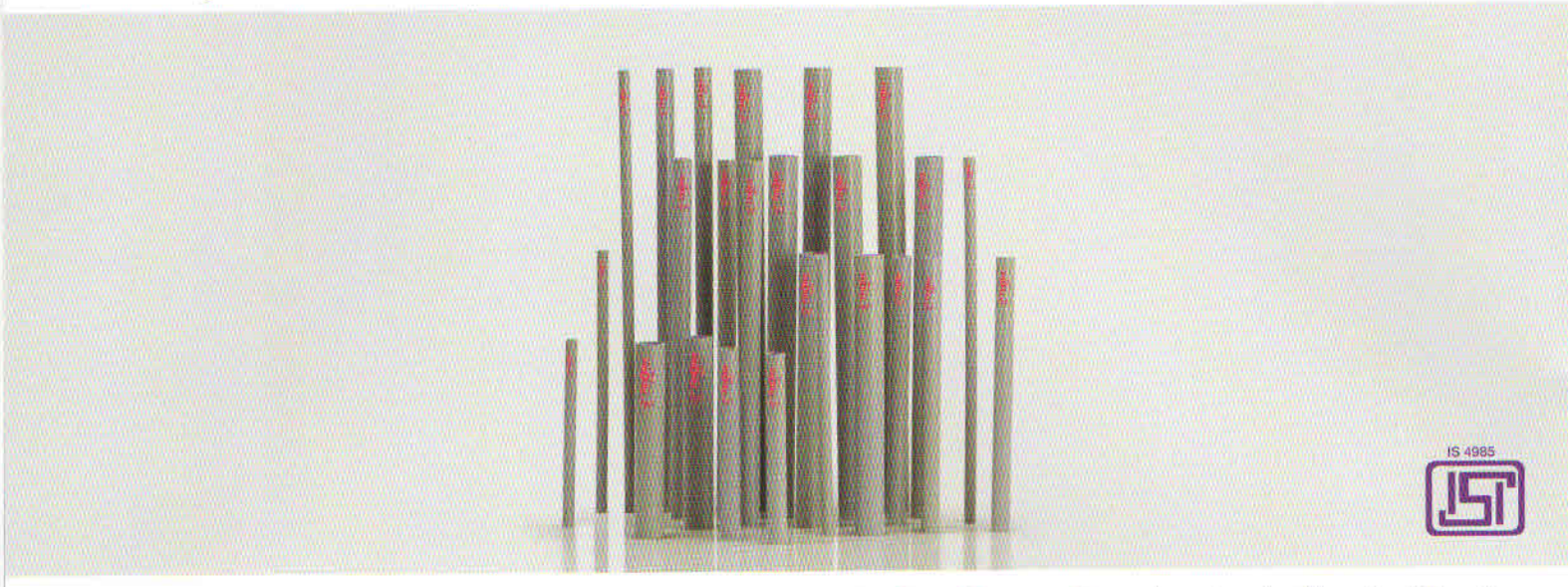
- Cold water plumbing applications in buildings.
- Piping systems for swimming pools.
- Pipes for hand pumps.
- Salt water lines.
- Water distributions mains.
- Ring lines/down take lines.
- Aggressive corrosive fluid transportation.
- Industrial process lines. (Based on chemical resistance chart).
- Sugar, paper and distillery lines.

Note: Not suitable for compressed air and gases.



HEAVY PRESSURE PLUMBING PIPES

Conforming to IS: 4985



Heavy Pressure Plumbing pipes are available in metric sizes ranging from 20mm to 50mm in a standard length of 6 meters, plain at both ends. These pipes are jointed by the use of solvent cement. The pipes are in grey colour and the fittings are dark grey in colour.

DIMENSIONS OF HEAVY PRESSURE PLUMBING PIPES:

Nominal Size in mm	Wall Thickness in mm (Min)	Wall Thickness in mm (Max)
20	2.80	3.30
25	2.90	3.40
32	3.40	3.90
40	3.60	4.20
50	3.70	4.30

SOLVENT CEMENTS & PRIMER

SOLVENT CEMENT

Medium Duty PVC- U Solvent Cement for plumbing applications upto 50mm (2")
(Meets ASTM D 2564 standard)

Size	ml	118	237	473
	Container	Tin	Tin	Tin

SOLVENT CEMENT

Heavy Duty PVC- U Solvent Cement for plumbing applications above 50mm (2")
(Meets ASTM D 2564 standard)

Size	ml	118	237	473
	Container	Tin	Tin	Tin

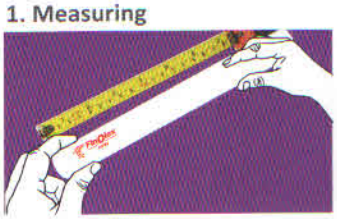
PRIMER

Primer for PVC-U and CPVC plumbing applications
(Meets ASTM F 656 and ASTM F 493 standard)

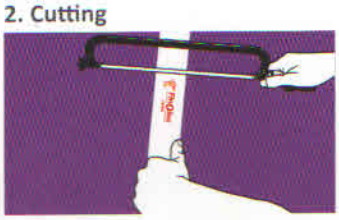
Size	ml	473
	Container	Tin

JOINTING OF FINOLEX ASTM & PLUMBING PIPES & FITTINGS:

1. Measuring



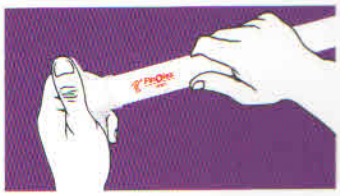
2. Cutting



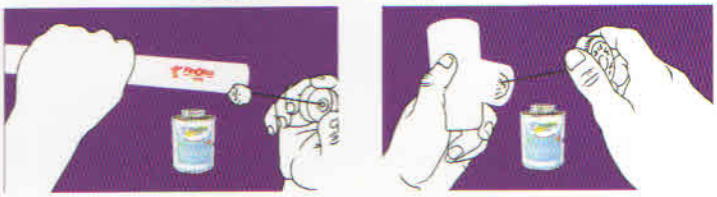
3. Deburring & Chamfering

4. Cleaning

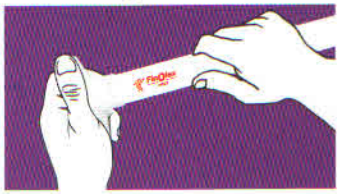
5. Check dry-fit



6. Solvent Cement application



7. Assembly



SET & CURE SCHEDULE GUIDELINES

AVERAGE INITIAL SET SCHEDULE

Set Schedule is the necessary time to be allowed before the joint can be carefully handled. (In damp or humid weather allow 50% more set time.)

Temperature Range	Pipe Sizes	Pipe Sizes	Pipe Sizes
Temperature range during assembly and setting period	½" to 1¼"	1½" to 2"	2½" to 8"
16°C to 38°C	2 minutes	5 minutes	30 minutes
5°C to 16°C	5 minutes	10 minutes	2 hours
-18°C to 5°C	10 minutes	15 minutes	12 hours

AVERAGE JOINT CURE SCHEDULE

Joint Cure Schedule is the necessary time to be allowed before pressurizing the system. (In damp or humid weather allow 50% more cure time)

Temperature Range	Pipe Size		Pipe Size		Pipe Size	
	½" to 1¼"		1½" to 2"		2½" to 8"	
Temperature range during assembly and cure period	Up to 11 Kg/cm²	11 to 22 Kg/cm²	Up to 11 Kg/cm²	11 to 22 Kg/cm²	Up to 11 Kg/cm²	11 to 22 Kg/cm²
16°C to 38°C	15 minutes	6 hours	30 minutes	12 hours	1½ hours	24 hours
5°C to 16°C	20 minutes	12 hours	45 minutes	24 hours	4 hours	48 hours
-18°C to 5°C	30 minutes	48 hours	1 hours	96 hours	72 hours	8 days

DO'S & DON'TS

DO'S

- Use pipes, fittings and solvent cements manufactured by Finolex Industries for best results.
- Installation should be completed as per instructions and recommended safe practices must be followed.
- Clean the pipe and fittings with a clean dry cloth to remove any dirt.
- Keep pipe and fittings in the original packaging until needed.
- Cut off a minimum of 25mm beyond the edge of the crack in case any crack is discovered in the pipe.
- Cut the pipe as square or perpendicular as possible before making a joint.
- Ensure no sharp edges are in contact with the fittings surface while inserting the pipe.
- Ensure proper alignment of pipe and fittings to avoid stress on the joints.
- Ensure installation is done in such a way that there are no chances of air entrapment.
- Use only teflon tape as a thread sealant.
- Always conduct hydraulic pressure testing after installation to detect any leaks and faults.
- Wait for the appropriate cure time before pressure testing. Fill lines slowly and allow air to bleed from the system prior to pressure testing.
- Paint pipes exposed to sunlight with a water-based paint.
- Provide additional support to the brass side of ASTM/brass transition or other metallic components to support the weight of the metal system.

DON'TS

- Do not use metal hooks or nails to support/hold or put pressure on the pipes.
- Do not use strap and hangers with rough or sharp edges. Do not tighten the straps over the pipes.
- Never expose the pipe to open flame while trying to bend it.
- Do not drop pipes on edges from heights. Do not drop heavy objects on pipes or walk on pipes.
- Do not use air or gases for pressure testing.
- Do not use any other petroleum or solvent-based sealant, adhesive, lubricant or fire-stop material on ASTM pipes & fittings.
- Do not use ASTM pipes and fittings for pneumatic applications.
- Do not use the ASTM piping system to support any metallic components.
- Do not use ASTM solvent cement that exceeds its shelf life, has become discoloured or has gelled.

CERTIFICATIONS & APPROVALS

- ASTM Pipes and Fittings are manufactured as per ASTM D 1785 and ASTM D 2467.
- Heavy Pressure Plumbing Pipes are manufactured conforming to IS: 4985 (Bureau of Indian Standards)
- Certified by Central Institute of Plastics Engineering & Technology (CIPET).
- Certified by SGS laboratory.
- Approved by Municipal Corporation of Greater Mumbai (MCGM.)
- Recommended by plumbing consultants around the country.

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IS/ISO 9001:2008 CERTIFIED Pipes Division, Ratnagiri

ISO 14001 CERTIFIED PVC, CPP & Pipes Plant, Ratnagiri