



FOOD GRADE



IS: 15801: 2008



DIN 8077/8078 Pipes  
DIN 16962 Fittings

CML:6700037714



## PPR & PPR-CT PIPES & FITTINGS

Ø20mm - Ø315mm

**1<sup>st</sup> COMPANY IN INDIA INTRODUCED**

**WELD-IN-SADDLE TECHNOLOGY**  
Ø40mm to Ø315mm

Operating Temperature  
**-5°C to 95°C**

**1<sup>st</sup> COMPANY IN SOUTH ASIA INTRODUCED**

**PP-RCT TECHNOLOGY**



Hot & Chilled Water



Infrastructure



Strong Chemicals



Air



Food



Leather



Pharma



Paper



Textile

## ABOUT US

Euroaqua Plumtek private limited is an ISO 9001: 2015 certified organization, which was started during the year 1997 by Er. P. Mohan MD & CEO. Our headquarters located at Sankari, Salem, Tamil Nadu and have multiple branches across India & Srilanka.

We are specialized in manufacturing PPR, PP-RCT, PE-RT, MDPE pipes & fittings. Under the brand name "PLUMTEK", which includes Taps, Faucets, Valves, Hoses and complete solution for Domestic & Industrial plumbing system. We are one of the leading Manufacturer and exporter of complete range of PPR pipes and fittings in India and first in South Asia, Introduced PP-RCT technology. We are exporting to more than 15 countries across the globe.

We Started First Time in India Manufacturing **PLUMTEK** ~~FASTFIT~~ Universal Push Fittings, made up of PB-1 Raw Materials which are imported from Europe and Japan. These Fittings can be used for PE-RT, PEX, PE/HDPE, PE-AL-PE Composite, PPR etc with similar OD's of Pipes.

We aim to increase our product range to meet the every corner of a growing India with over 25 years of manufacturing experience. Expertise in bringing high quality solution to reduce bottom line Installation costs, extending the life span of piping system.



### VISION

"Our vision is to achieve greater goals beyond boundaries with dedication & professionalism"



### MISSION

"We strive to offer our customers the cost-effective products at the excellent quality with the utmost satisfaction"



## WHAT IS PPR ?

(Polypropylene Random Co-Polymer) PPR is a thermoplastic polyolefin which is processed into pipes & fittings with superior chemical & physical properties. PPR, PPR-C, PP-RC Pipes & PPR Pipe - These are all same materials.



### Why we need PPR ?

They are the best carriers of high pressure potable water ( Hot and Cold) in domestic as well as in industrial applications ( chemicals & compressed air lines ) in terms of excellent quality & price.



### When we need PPR ?

When long term performance under adverse conditions without deviation in the standards are required, high ESCR is needed.



### Where we need PPR ?

Areas of Advanced Piping - Food Grade / hotwater / Water tight systems / corrosion resistance / No encrustation tendency / Noise dampening plastic material / Long term pressure resistance applications / Chemical resistance / no leakage during its lifetime.



- ① Anti-Microbial PPR Layer
- ② Glass Fiber Compound - FRP
- ③ UV Stabilized PP-R+FRP Layer

- ④ Strong UV Stabilized Black PPR Layer
- ⑤ PPR - Layer Pipes

## PRECAUTIONS:



### Transport & Handling

The products should be handled with normal care. Pipes and fittings with imperfections should not be installed.



### Exposure to UV Rays

It is recommended to do some protective outer layer / outer coating and avoid direct sun light exposures.



### Support

The PPR pipes are not self contained so it is necessary to support them at specific distances.



### Low Temperatures

At temperatures below - 5°C, following precautions should be taken Pay attention when cutting the pipe | check the cut made Avoid impact and excessive strains | Not to make elbows with very narrow radius in the presence of cold draughts, welding must be carried out in protected areas, to avoid quick cooling of the surfaces.



### Bending

Large bends can be obtained by cold forming. If the bend radius is 8 times shorter than the dia of the pipe, it is recommended to heat up the part concerned by means of a hot air blower.



### Pipe Cutting

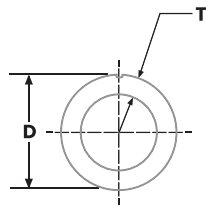
Cutting should be carried out by using tools which ensure a clean cut free from burns and perpendicular to the axis.

**PPR - PIPES**

EUROAQUA & AIRGUARD PPR PIPES are made up of superior raw materials via special techniques. The products belong to green environment - protective construction material, which is popular internationally. Inner and outer product layer is very smooth with small resistance, soft color and beautiful sculpture. As its weight is only 1/8th of the metal pipe, it is convenient to transport and install. The heat guide coefficient is only 1/200th of the metal pipe. It is good for hot water pipeline's temperature holding.

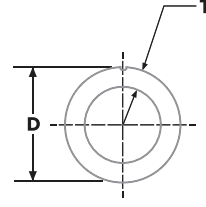


**PN10 / SDR11 / S5**



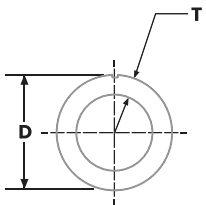
CODE	SIZE (DxT)	LENGTH/BUNDLE
EA001	20x2.0mm	75
EA002	25x2.3mm	50
EA003	32x2.9mm	30
EA004	40x3.7mm	15
EA005	50x4.6mm	10
EA006	63x5.8mm	7
EA007	75x6.8mm	5
EA008	90x8.2mm	5
EA009	110x10.0mm	3
* EA010	125x11.40mm	3
* EA011	160x14.60mm	1
* EA012	200x18.20mm	1
* EA013	250x22.70mm	1
* EA014	315x28.60mm	1

**PN16 / SDR7.4 / S3.2**



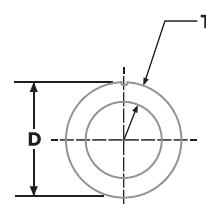
CODE	SIZE (DxT)	LENGTH/BUNDLE
EA201	20x2.8mm	75
EA202	25x3.5mm	50
EA203	32x4.4mm	30
EA204	40x5.5mm	15
EA205	50x6.9mm	10
EA206	63x8.6mm	7
EA207	75x10.3mm	5
EA208	90x12.3mm	5
EA209	110x15.1mm	3
* EA210	125x16.9mm	2
* EA211	160x21.9mm	1

**PN20 / SDR 6 / S2.5**



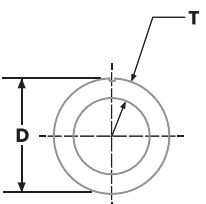
CODE	SIZE (DxT)	LENGTH/BUNDLE
EA301	20x3.4mm	75
EA302	25x4.2mm	50
EA303	32x5.4mm	30
EA304	40x6.7mm	15
EA305	50x8.3mm	10
EA306	63x10.5mm	7
EA307	75x12.5mm	5
EA308	90x15.0mm	5
EA309	110x18.3mm	3
* EA310	125x20.8mm	3
* EA311	160x26.6mm	1

**PN25 / SDR5 / S2 ★**



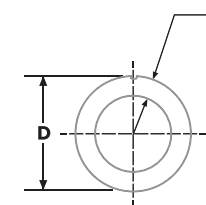
CODE	SIZE (DxT)	LENGTH/BUNDLE
EA401	20x4.0mm	75
EA402	25x5.0mm	50
EA403	32x6.4mm	30
EA404	40x8.0mm	15
EA405	50x10.0mm	10
EA406	63x12.6mm	7

**PN06 / SDR17.5 / S8.25 ★**



CODE	SIZE (DxT)	LENGTH/BUNDLE
EA512	200x11.4mm	1
EA513	250x14.2mm	1
EA514	315x17.90mm	1

**PN04 / SDR26 / S12.5 ★**



CODE	SIZE (DxT)	LENGTH/BUNDLE
EA612	200x7.7mm	1
EA613	250x8.6mm	1
EA614	315x12.1mm	1

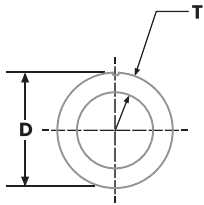
Custom Made

Available Colours: ● GREEN ● BLUE ● BLACK ● WHITE ● RED

★ Subject to Availability & Against Order Only

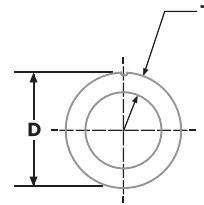
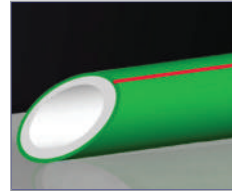
PPR - 3L ADVANCE PRO

PN16 / SDR7.4 / S3.2



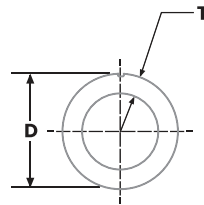
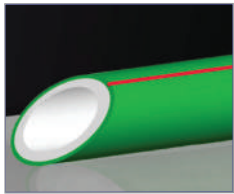
CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA201A	20x2.8mm	75
EA202A	25x3.5mm	50
EA203A	32x4.4mm	30
EA204A	40x5.5mm	15
EA205A	50x6.9mm	10
EA206A	63x8.6mm	7
EA207A	75x10.3mm	5
EA208A	90x12.3mm	5
EA209A	110x15.1mm	3
* EA210A	125x16.9mm	2
* EA211A	160x21.9mm	1

PN20 / SDR6 / S2.5



CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA301A	20x3.4mm	75
EA302A	25x4.2mm	50
EA303A	32x5.4mm	30
EA304A	40x6.7mm	15
EA305A	50x8.3mm	10
EA306A	63x10.5mm	7
EA307A	75x12.5mm	5
EA308A	90x15.0mm	5
EA309A	110x18.3mm	3
* EA310A	125x20.8mm	3
* EA311A	160x26.6mm	1

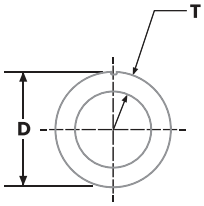
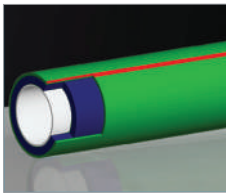
PN25 / SDR5 / S2 ★



CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA401A	20x4.0mm	75
EA402A	25x5.0mm	50
EA403A	32x6.4mm	30
EA404A	40x8.0mm	15
EA405A	50x10.0mm	10
EA406A	63x12.6mm	7

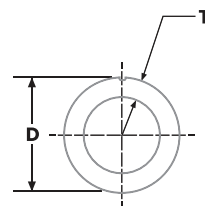
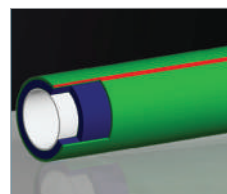
PPR+FRP - THERMOKING

PN12.5 / SDR11 / S5



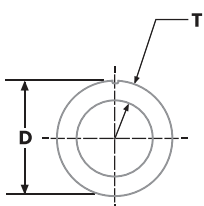
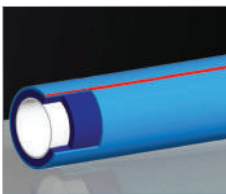
CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA005F	50x4.6mm	15
EA006F	63x5.8mm	7
EA007F	75x6.8mm	5
EA008F	90x8.2mm	5
EA009F	110x10.0mm	3
* EA010F	125x11.40mm	3
* EA011F	160x14.60mm	1
* EA012F	200x18.20mm	1
* EA013F	250x22.70mm	1
* EA014F	315x28.60mm	1

PN16 / SDR9 / S4



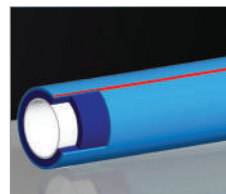
CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA103F	32x3.6mm	30
EA104F	40x4.5mm	15
EA105F	50x5.6mm	10
EA106F	63x7.1mm	7
EA107F	75x8.4mm	5
EA108F	90x10.1mm	5
EA109F	110x12.3mm	3
EA110F	125x14mm	2
EA111F	160x17.9mm	1

PN20 / SDR7.4 / S3.2



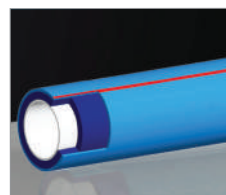
CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA203F	32x4.4mm	30
EA204F	40x5.5mm	15
EA205F	50x6.9mm	10
EA206F	63x8.6mm	7
EA207F	75x10.3mm	5
EA208F	90x12.3mm	5
EA209F	110x15.1mm	3
* EA210F	125x16.90mm	2
* EA211F	160x21.9mm	1

PN08 / SDR14 / S6.5 ★



CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA511F	160x11.5mm	1

PN06 / SDR17.5 / S8.25 ★



CODE	SIZE (DxT)	LENGTH/ BUNDLE
EA612F	200x11.4mm	1
EA613F	250x14.2mm	1
EA614F	315x18mm	1

Custom Made

Available Colours:  GREEN  BLUE  BLACK  WHITE  RED

★ Subject to Availability & Against Order Only

EUROAQUA & AIRGUARD PPR Advanced Piping Technology is a new high technology system of pipes and fittings suitable for water supplies in buildings, chemicals & compressed air supply in Industries.

It has many important features including

## Resistance to Abrasion and Corrosion



- ◆ No corrosion by acid and alkaline fluids with pH values between 1 and 14
- ◆ High chemical resistance
- ◆ Excellent ESCR - Longer life
- ◆ High abrasion resistance - high flow velocities possible

## Very Smooth Surface of Pipes & Fittings



- ◆ No limestone or other deposits ( non polar nature and no bacterial & fungal growth
- ◆ Head loss / pressure drop reduced to a minimum / negligible

## Threaded Insert Fittings



- ◆ All threaded inserts are brass ( min.58% Cu ) with chromium plated
- ◆ Watertight assemblies with other metal elements in the installation

## Low Specific Weight



- ◆ Easy transport and handling
- ◆ Lowest density as compared to conventional metal pipes ( 1/8th times of metal pipe )

## Fitness for use in Seismic Areas



- ◆ Flexibility and toughness of the PPR pipes are best suited to be used in seismic prone areas
- ◆ The pipe is not prone to any damages

## Energy Saving



- ◆ Low heat conductivity of PPR leads to 10-20% energy saving. Heat preservation and energy saving greatly minimizes heat losses during hot water flow. The heat conduction coefficient is 1/200 of metal pipes



## High Internal Pressure Resistance

- ◆ Minimum 50 years lifetime.

## No Negative Influence on Water Quality



- ◆ Compliance with the international standards like FDA on the use of plastic materials for the transportation of drinking water
- ◆ Since UV treated, it prevents UV passage - prevents growth of bacteria & algae

## Welding Capacity



- ◆ 100% homogeneous connections, guaranteeing leak-tight ( minimum 50 years ), long lasting system
- ◆ Fast and easy installation
- ◆ Very good for concealed and above false roof piping applications

## Silence / Sound Absorption



- ◆ Considerable noise reduction in comparison to metal

## Reduced Condensation



- ◆ Low heat conductivity reduces the condensation of water on the outer surface of cold water pipes


## Hygienic and Non Toxic




- ◆ All raw materials used in the production of the EUROAQUA & AIRGUARD PPR Plumbing Technology are non toxic, eco friendly, food grade in accordance with current international standards. [EXOVA - Body cote]




**MALE THREAD UNION**

22	CODE	SIZE	PCS COVERCTN
	EK101	20x1/2"	15/105
	EK102	25x3/4"	15/75
	EK103	32x1"	15/60
	EK104	40x1-1/4"	10/30
	EK105	50x1-1/2"	8/16
	EK106	63x2"	6/12


**FEMALE THREAD UNION**

23	CODE	SIZE	PCS COVERCTN
	EI101	20x1/2"	15/105
	EI102	25x3/4"	15/90
	EI103	32x1"	15/60
	EI104	40x1-1/4"	10/30
	EI105	50x1-1/2"	8/24
	EI106	63x2"	6/18


**METAL UNION**

24	CODE	SIZE	PCS COVERCTN
	EI301	20mm	15/105
	EI302	25mm	15/90
	EI303	32mm	15/60
	EI304	40mm	10/30
	EI305	50mm	8/24
	EI306	63mm	5/15


**MALE THREAD COUPLER**

25	CODE	SIZE	PCS COVERCTN
	EB301	20x1/2"	30/180
	EB302	20x3/4"	20/120
	EB303	25x1/2"	20/140
	EB304	25x3/4"	20/120
	EB305	32x1/2"	15/105
	EB306	32x3/4"	15/105
	EB307	32x1"	10/60
	EB308	40x1-1/4"	10/30
	EB309	50x1-1/2"	10/30
	EB310	63x2"	8/16
	EB311	75x2-1/2"	2/12
	EB312	90x3"	2/4
	EB313	110x4"	1/3


**FEMALE THREAD COUPLER**

26	CODE	SIZE	PCS COVERCTN
	EB201	20x1/2"	30/180
	EB202	20x3/4"	20/140
	EB203	25x1/2"	20/160
	EB204	25x3/4"	20/140
	EB205	32x1/2"	20/120
	EB206	32x3/4"	20/120
	EB207	32x1"	15/75
	EB208	40x1-1/4"	10/40
	EB209	50x1-1/2"	10/30
	EB210	63x2"	8/16
	EB211	75x2-1/2"	2/12
	EB212	90x3"	2/4
	EB213	110x4"	1/3


**MALE THREAD ELBOW**

27	CODE	SIZE	PCS COVERCTN
	EE401	20x1/2"	30/120
	EE402	25x1/2"	20/100
	EE403	25x3/4"	15/75
	EE404	32x1/2"	15/60
	EE405	32x3/4"	15/60
	EE406	32x1"	10/40

**FEMALE THREAD ELBOW**

28	CODE	SIZE	PCS COVERCTN
	EE201	20x1/2"	30/150
	EE202	25x1/2"	20/120
	EE203	25x3/4"	15/75
	EE204	32x1/2"	15/75
	EE205	32x3/4"	15/75
	EE206	32x1"	10/40
	EE207	40x1-1/4"	10/20
	EE208	50x1-1/2"	5/10

**STOP VALVE**

29	CODE	SIZE	PCS COVERCTN
	EH001	20mm	15/60
	EH002	25mm	10/40
	EH003	32mm	10/30
	EH004	40mm	6/24
	EH005	50mm	5/15
	EH006	63mm	2/10

**WALL PLATE MALE THREAD ELBOW**

27-A	CODE	SIZE	PCS COVERCTN
	EW401	20x1/2"	***
	EW402	25x1/2"	***

**NEW ARRIVAL**

**WALL PLATE FEMALE THREAD ELBOW**

28-A	CODE	SIZE	PCS COVERCTN
	EW201	20x1/2"	***
	EW202	25x1/2"	***

**NEW ARRIVAL**

**TEMPLATE - ADJUSTABLE (FOR WALL MIXER ELBOW)**

28-B	CODE	PCS COVERCTN
	ET001	***


**NEW ARRIVAL**

Scan QR Code for Installation

**WELDING SADDLE DIE**


33	CODE	SIZE
	EB901	40x20mm/ 1/2"
	EB902	50x20mm/ 1/2"
	EB903	63x25/32mm/ 1/2"/3/4"
	EB904	75x25/32mm/ 1/2"/3/4"
	EB905	90x25/32mm/ 1/2"/3/4"
	EB906	110x25/32mm/ 1/2"/3/4"
	EB907	125x32mm/1/2"/3/4"
	EB908	125x40mm
	EB909	160x32mm
	EB910	160x40/50mm
	EB911	160x63/75mm
	EB912	200x63/75/90/110mm
	EB913	250x63/75/90/110mm
	EB914	315x63/75/90/110mm
	EB915	200x25/32mm/1/2"/3/4"
	EB916	250x25/32mm/1/2"/3/4"
	EB917	315x25/32mm/1/2"/3/4"

**CONCEALED STOP VALVE**


30	CODE	SIZE	PCS COVERCTN
	EH001A	20mm	30
	EH002A	25mm	30
	EH003A	32mm	30

A B C

**LONG PIPE PLUG**

31	CODE	SIZE	PCS COVERCTN
	ED201	1/2"	25/150
	ED202	3/4"	25/150


**PLUG**

32	CODE	SIZE	PCS COVERCTN
	ED101	1/2"	150/900
	ED102	3/4"	100/600
	ED203	1"	50/300


**CLAMP**

34	CODE	SIZE	PCS COVERCTN
	EG001	20mm	100/600
	EG002	25mm	70/420
	EG003	32mm	50/300
	EG004	40mm	50/300
	EG005	50mm	50/200
	EG006	63mm	25/100


**PIPE CUTTER (Imported)**

35	CODE	SIZE	PCS COVERCTN
	EM006	20-40mm	1/12
	EM007	20-63mm	1/12


**PIPE CUTTER (Indian)**

36	CODE	SIZE	PCS COVERCTN
	EM006I	20-40mm	1/12
	EM007I	20-75mm	***

**WELDING MACHINE (Imported)**

37	CODE	SIZE	PCS COVERCTN
	EL112	20-63	5
	EL113	75-110	4
	EL114	160	1
	WELDING DIE ONLY		
	EL106	125mm	-


**WELDING MACHINE (Indian)**

38	CODE	SIZE	PCS COVERCTN
	EL112I	20-40	5
	EL114I	20-63	*
	EL113I	75-110	4

**REPAIR SET**

39	CODE	SIZE
	EZ001	9mm
	EZ002	11mm

**WELDING DEVICE (Hydraulic Pump)**

40	CODE	SIZE	PCS COVERCTN
	EB30	160mm	-

Small Carton Box  
(20 to 50mm Plain Fittings & Threaded Fittings all Sizes)  
Master Carton Box  
(63mm and above all Plain Fittings)

Custom Made

Available Colours: ● GREEN ● BLUE ● BLACK ● WHITE ● RED



Material ( Normal used for Hot water )	<b>EUROAQUA PP-R PLUMBING TECHNOLOGY</b>	Iron	Steel	Copper	Aluminium
Thermal Conductivity at 20°c in W/mk	0.1 to 0.24	45 to 60	45 to 60	300 to 400	200 to 250

## Types of PPR & PPR-CT Pipes

### 1. PPR Mono Layer

### 2. PPR Double Layer with strong black outer UV Stabilized

### 3. PPR-3L Advance Pro

Outer UV Treated PPR, Middle PPR & Inner Anti Microbial PPR Layer

### 4. Thermoking Pipe series

a) PPR FRP PPR Three layer with glass fiber reinforcement middle layer

b) PPR | FRP | PPR-FR Middle layer with glass fiber reinforcement and outer layer with fire retardant material

### 5. Fire Safe

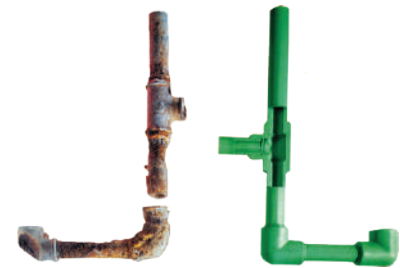
PPR - FR Red in colour can be used for fire safety piping

### 6. PPR - Pipes Colours

All these pipes are available in

**EUROAQUA** - Green colour

**AIRGUARD** - Blue colour and also in all PPR-CT ranges



## Fields of Applications

- ◆ Industrial systems like conveying compressed air pressure, aggressive fluids like acid and alkaline solutions, effluent, sewage disposal and leak proof joints
- ◆ Water purifying / Pharmaceutical plants for clean water
- ◆ Chilled water circuit for refrigeration units and chillers
- ◆ Lines for conveying liquid food products - Food Grade
- ◆ Hot and Cold Water Supplying pipes
- ◆ Portable water pipe networks for cold and hot water installations i.e., in residential buildings, hospitals, hotels, office and school buildings etc
- ◆ Sanitary lines
- ◆ Radiator heating pipes, Room heating system, under floor heating pipes
- ◆ Pipe networks for rainwater utilization systems
- ◆ Pipe for Agriculture use & Horticulture use

**1<sup>st</sup> COMPANY IN INDIA INTRODUCED WELD-IN-SADDLE TECHNOLOGY**  
Ø40mm to Ø315mm

## PPR - Weld-in Saddle

EUROAQUA / AIRGUARD PPR Weld in Saddle is the innovative and easy method for industrial installations. This will decrease our expenses and gives better look to the installation as well. This is to avoid use of many Reducers / Tees and cost saving also give better appearance to the installation. The pipe sizes available with us are between 40mm to 315mm. We are the first company in India, Introduced this technology in year 2011.

Drill with Proper Diameter and Make Correct ID Hole



Fuse weld-in saddle with Pipe permanently



Heat up the Weld-in Saddle and ID of the pipe with proper Dies



Weld-in Saddles available from 40mm to 315mm sizes



### Advantages of Weld - in Saddle

- ◆ Easy & Good Installation
- ◆ Cost & time Savings
- ◆ Good line appearance

### Uses of Weld - in Saddle

- ◆ Substitution for reducing tees
- ◆ Making branches in main line and risers
- ◆ Sensor fixers like temperature and pressure gauge etc

### Insulation for Chilling Water



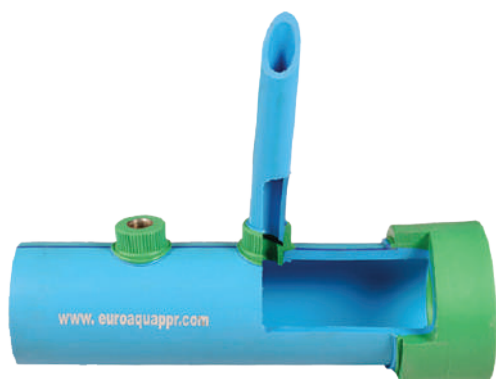
Metal Pipe



PPR-C Pipes  
( Less Insulation Thickness )

### Thermoking PPR-FR Composite Pipes

EUROAQUA / AIRGUARD THERMOKING PPR - FRP Composite Pipes are specially designed for various industrial needs. It is basically with innovative composite technology of plastic with extremely low thermal coefficient fibre reinforcement. It will control the linear thermal expansion to about 70% so that PPR pipe line sagging is controlled.



**1<sup>st</sup> COMPANY IN INDIA INTRODUCED**  
WELD-IN-SADDLE TECHNOLOGY  
Ø40mm to Ø315mm



### Advantages

- ◆ Low thermal conductivity. It requires very thin insulation or no insulation when using chilled water & hot water/chemical applications.
- ◆ High resistance to corrosion, acids & chlorides.
- ◆ Very good chemical resistance
- ◆ High heat stability
- ◆ High impact strength
- ◆ High Environmental Stress Cracking Ratio (ESCR)
- ◆ Very good welding property which ensure leak proof joints, energy savings
- ◆ Smooth inner surface, less friction, no noise
- ◆ Thermal expansion is controlled by 70%, line sagging is controlled
- ◆ Hygienic and Non-Toxic Food Grade

### Applications

- ◆ Compressed air lines for Hot and Cold air
- ◆ Chilled water application & air conditioning
- ◆ Transportation of chemicals & aggressive fluids
- ◆ Effluent treatment plants (ETP)
- ◆ Ship buildings and swimming pools
- ◆ Pharmaceuticals, food grade applications
- ◆ Solar heaters, under floor heating
- ◆ Vacuum Pipelines
- ◆ R.O. Water Pipeline.

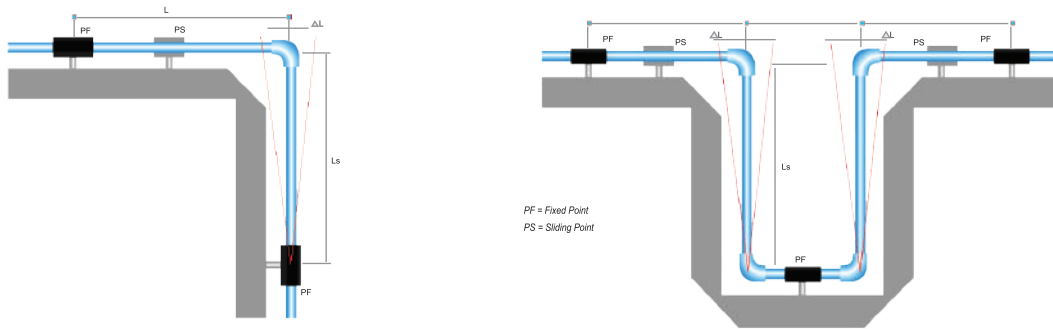


### Support Intervals

Pipe Diameter (m/m)													
	20	25	32	40	50	63	75	90	110	160	200	250	315
Temp°C	Support Intervals (cm)												
0	120	140	160	180	205	230	245	260	290	340	370	400	440
20	90	105	120	135	155	175	185	195	215	270	300	340	375
30	90	105	120	135	155	175	185	195	210	255	285	310	340
40	85	95	110	125	145	165	175	185	200	245	280	300	320
50	85	95	110	125	145	165	175	185	190	205	240	270	300
60	80	90	105	120	135	155	165	175	180	195	220	250	280
70	70	80	95	110	130	145	155	165	170	185	210	240	270

**Linear Expansion**

The following schemes demonstrate some important cases:



Linear expansion depends on the temperature variation the pipes are exposed to. Cold water pipes have low linear expansion and hence can be neglected. But in case of hot water and heating installations, the linear expansion must be considered and the installations must be planned and performed accordingly.

**Calculation of Linear Expansion**

**Calculation Example : Linear Expansion**

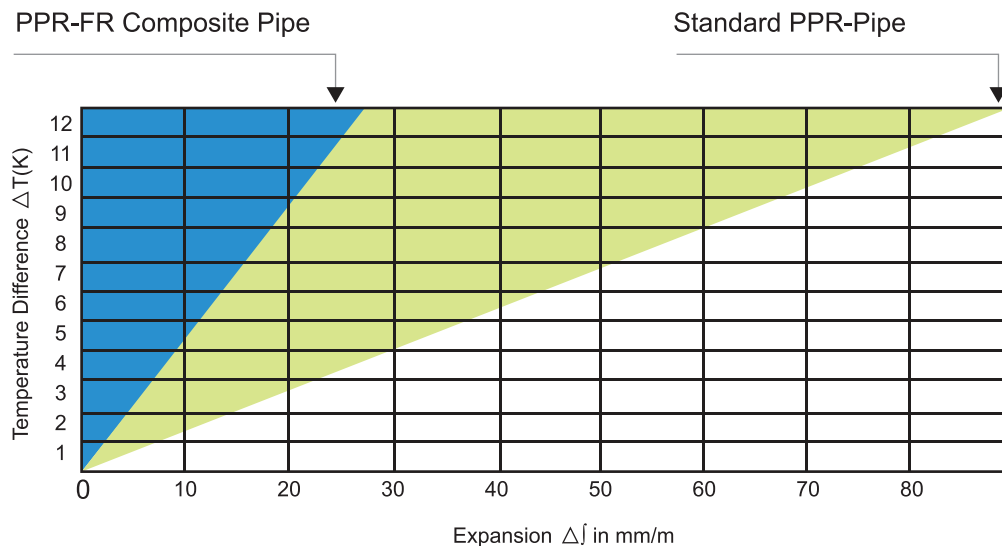
Symbol	Meaning	Value	Measuring unit
$\Delta$	Linear Expansion	?	mm
$\alpha_1$	Coefficient of Linear expansion Euroaqua PPR stable composite pipe	0.03	mm/mk
$\alpha_2$	Coefficient of Linear expansion Euroaquappr Faster composite pipe	0.035	mm/mk
$\alpha_2$	Linear expansion coefficient	0.15	mm/mk
L	Pipe length	25	m
$T_w$	Working temperature	60	°C
$T_M$	Installation temperature	20	°C
$\Delta T$	Temperature Difference between working and installation temperature ( $\Delta T = T_w - T_M$ )	40	K

The Linear expansion  $\Delta l$  is calculated according to the following formula:  $\Delta l = \alpha \times L \times \Delta T$

Material : EUROAQUA<sup>®</sup>-PPR - FRP Composite Pipe (  $\alpha = 0.03\text{mm/mk}$  )

$\Delta l = 0.03 \text{ mm/mk} \times 25.0 \text{ m} \times 40\text{k}$        $\Delta l = 30.0\text{mm}$

**Length expansion comparison : Faster Composite - to Standard PPR-Pipe**



Permissible Working Pressure

Temp °c	Service Life	EUROAQUA & AIRGUARD			EUROAQUA & AIRGUARD		
		PPR	PPR	PPR	THERMOKING		
		SDR 11	SDR 7.4	SDR 6	PPR-FR	PPR-FR	
		PN 10	PN 16	PN 20	SDR-11	SDR-7.4	
0°C	1	35	37.2	47	27.8	43.2	
	5	22.3	35.5	45.5	26.2	40.7	
	10	21.3	34.2	43.6	26.6	39.7	
	25	20.0	33.7	42.5	24.7	38.3	
	50	19.6	32.2	41.8	24.1	37.4	
	100	19.6	31.3	40.4	23.5	36.4	
10°C	1	21.1	33.4	42.0	25.7	39.5	
	5	20.0	31.6	39.8	24.2	37.5	
	10	19.3	30.6	38.5	23.6	36.6	
	25	18.7	29.6	37.3	22.8	35.3	
	50	18.2	28.8	36.3	22.2	34.4	
	100	17.7	28.1	35.4	21.6	33.5	
20°C	1	18.0	28.6	36.0	23.8	36.8	
	5	16.9	26.8	33.8	22.3	34.6	
	10	16.4	26.1	32.8	21.7	33.7	
	25	16.0	25.3	31.8	21	32.5	
	50	15.5	24.5	30.9	20.4	31.7	
	100	15.0	23.8	29.9	19.9	30.9	
30°C	1	15.3	24.3	30.6	20.2	31.3	
	5	14.4	22.8	28.7	18.9	29.4	
	10	13.9	22.0	27.7	18.4	28.6	
	25	13.3	21.3	26.8	17.8	27.5	
	50	13.1	20.7	25.1	17.3	26.8	
	100	12.8	20.2	25.5	16.8	26	
40°C	1	12.9	20.5	25.8	17.1	26.6	
	5	12.1	19.2	24.2	16	24.9	
	10	11.8	18.7	23.6	15.6	24.1	
	25	11.3	18.0	22.6	15	23.2	
	50	11.0	17.5	22.0	14.8	22.6	
	100	10.7	16.2	21.3	14.1	21.9	
50°C	1	11.0	17.5	22.0	14.5	22.5	
	5	10.2	16.2	20.4	13.5	21	
	10	9.9	15.7	19.7	13.1	20.4	
	25	9.6	15.2	19.1	12.6	19.6	
	50	9.3	14.7	18.5	12.2	19	
	100	8.9	14.2	17.8	11.9	18.4	
60°C	1	9.3	14.7	18.5	12.2	a	
	5	8.0	13.7	17.2	11.4	17.7	
	10	8.3	13.2	16.6	11	17.1	
	25	8.0	12.6	15.9	10.6	16.4	
	50	7.7	12.1	15.3	10.3	15.9	
70°C	1	7.8	12.4	15.6	10.3	16	
	5	7.2	11.4	14.3	9.6	14.8	
	10	7.0	11.1	14.0	9.2	14.3	
	25	6.1	9.6	12.1	8	12.5	
	50	5.1	8.1	10.2	9.2	10.5	
80°C	1	6.5	10.4	13.1	8.6	13.4	
	5	5.7	9.1	11.5	7.7	11.9	
	10	4.8	7.6	9.6	6.5	10	
	25	3.8	6.1	7.6	5.2	8	
	90°C	1	5.4	9.3	10.8	7.2	11.2
5		4.9	8.0	10	5.1	7.8	
10		6.5	6.5	8.5	4.3	6.6	
95°C		1	4.0	7.3	9.2	5.2	9.5
		5	3.0	4.8	6.1	4.5	6.6
	10	2.6	4.0	5.1	3.9	5.8	

SDR = Standard Diameter Ratio =  $\frac{\text{Outside Dia (OD)}}{\text{Wall Thickness}}$

PN = Normal Pressure

$S = \frac{SDR - 1}{2}$  ( S = Pipe Index as per ISO:4065)



## Standard for Pipe Fittings

STANDARDS	FIELDS
DIN 1998	Drinking water line installation.
DIN 2999	Whitworth pipe threads for tubes and fittings.
DIN 4109	Sound insulation in building constructions.
DIN 8077	Polypropylene (pp)pipes dimensions.
DIN 8078	Polypropylene (pp)pipes general quality requirements and testing.
DIN 16962	Polypropylene (pp)pipes Fittings.
DIN 16928	Pipe connections and components - pipes of thermoplastic materials, pipe joints,elemnt for pipe,laying, general directions.
DIN 16928 (6-9)	Pipe joints and elements for polypropylene (pp) pressure pipelines, types 1 and 2; injection molded elbows for socket - welding, dimension.
DIN 16925.5	Pipe joints and elements for polypropylene (pp) for pipes under, - part 5; General quality
DIN 2207.11	Welding regulations for plastic pipes.
DIN 2203	Test of thermoplastic pipe fitting for weld.
DIN 2208.1	Machines and devices for welding thermoplastic pipes.
EN ISO 15874 (1-7)	Plastic piping systems for hot and cold water installations polypropylene(pp).
IS 15801 : 2008/BIS	BUREAU OF INDIAN STANDARDS - ISI

## Testing

We have well equipped in house testing facility for the control of quality by

1. Testing of Incoming Raw Materials & additional.
2. Inspection and Testing during production as per standards.
3. Final inspection and dispatch.
4. Periodical calibration of Testing Equipments.



## PPR vs Other Products

PROPERTIES	PP-R	GI	COPPER	PE	CPVC	ALUMINIUM
Service Life ( Years )	50 Years Plus	2-5 Years	10-25 Years	20-30 Years	20-30 Years	20-30 Years
Temperature Resistance	Very Good	Excellenet	Excellenet	Good	Good	Poor
Food Grade	Excellent, Hygienic	Non-Hygienic	Non-Hygienic	Good	Non-Hygienic	Non-Hygienic
Heat Loss	Negligible - Very	Very High	Very High	Moderate	Moderate	High
Chemical Resistance	Excellent	Very Weak	Weak	Good	Good	Weak
Maximum Safe Working Temp°C	100	High	High	80	80	High
Easiness in Repair / Maintenance	Easy/Nil	Huge Cost	Huge Cost	Expensive	Expensive	Very Expensive
Corrosion / Abrasion Resistance	Excellent	Very Low	Very Low	Good	Moderate	Good
Friction Factor	Very Low	High	High	Low	Low	Moderate
Reliability	Very Good	Poor	Ok/Expensive	Average	Average	Moderate
Joint Reliability/Leak Proof (Maximum:100, Minimum: 0)	100	0-50	0-50	0-80	0-80	0-50
Jointing Method	Simple Heat Fusion	Conventional	Conventional	Butt Fusion	Special Solvent Chemical	O-Ring
Jointing Skill	Very Simple & even unskilled labour can do this job easily	Need Skilled Labour	Need Skilled Labour	Need Skilled Labour	Need Special Attention & Skilled Labour	Need Special Attention & Skilled Labour
Jointing Time	Few Seconds	Few Hrs	Few Hrs	Few Minutes	Few Minutes	Few Minutes
Jointing Life Commissioning	Immediate	24 Hours	24 Hours	Few Hours	24 Hours	Immediate
Easiness in Fittings	Very Easy	Difficult	Difficult	Easy	Easy	Ok
Laying (Easiest = 100 & Hardest=0)	100	0-50	0-50	0-80	0-80	0-50
Electrical Conductivity	Nil	More	More	Nil	Nil	More

## Indoor Hot &amp; Cold Water Plumbing Pipe &amp; Fittings Pipe Selection Chart

The Table lists the permissible working pressure for pipes with different pressure class under specific temperature and work life. Under normal work pressure and condition, the life of EUROAQUA PPR - Pipe system can reach 50 years at least.

Temp <sup>o</sup> c	PN10 / SDR 11		PN16 / SDR 7.4		PN20 / SDR 6		PN25 / SDR 5	
	Mpa	Kg/cm <sup>2</sup>	Mpa	Kg/cm <sup>2</sup>	Mpa	Kg/cm <sup>2</sup>	Mpa	Kg/cm <sup>2</sup>
10	1.91	19.10	3.02	30.20	3.80	38.00	4.78	47.80
20	1.63	16.30	2.58	25.80	3.24	32.00	4.09	40.90
30	1.37	13.70	2.17	21.70	2.73	27.30	3.44	34.40
40	1.15	11.50	1.84	18.40	2.30	23.00	2.90	29.00
50	0.98	9.80	1.55	15.50	1.95	19.50	2.46	24.60
60	0.82	8.20	1.28	12.80	1.62	16.20	2.04	20.40
70	0.62	6.20	0.98	9.80	1.23	12.30	1.55	15.50
80	0.39	3.90	0.65	6.50	0.77	7.70	0.98	9.80
95	0.27	2.70	0.41	4.10	0.52	5.20	0.65	6.50

## WATER CONTENT &amp; WEIGHT / MTR DETAIL

PPR	PN10 / SDR 11 / S5		PN16 / SDR 7.4 / S3.2		PN20 / SDR 6 / S2.5	
	Lit/m	Kg/mtr	Lit/m	Kg/mtr	Lit/m	Kg/mtr
20mm	0.21	0.107	0.16	0.148	0.14	0.172
25mm	0.32	0.164	0.25	0.23	0.22	0.266
32mm	0.53	0.261	0.43	0.37	0.35	0.434
40mm	0.83	0.412	0.65	0.575	0.56	0.671
50mm	1.31	0.638	1.03	0.896	0.87	1.04
63mm	2.08	1.01	1.65	1.41	1.38	1.65
75mm	2.96	1.41	2.33	2.01	1.96	2.36
90mm	4.24	2.03	3.35	2.87	2.83	3.36
110mm	6.33	3.01	5.11	4.3	4.23	5.01
125mm	10.1	3.9	9.1	5.53	8.3	6.47
160mm	13.45	6.38	10.61	9	13.3	10.6
200mm	16.3	9.95	14.5	14.1	-	-
250mm	20.3	15.5	18.1	22.1	-	-
315mm	25.7	24.6	-	-	-	-

## FUSION WELDING DATA

Dimension mm	Welding Depth mm	Heating Time Sec	Welding Time Sec	Cooling Time Min
20	14	5	4	3
25	15	7	4	3
32	17	9	6	5
40	18	13	6	5
50	20	19	6	5
63	25	26	9	7
75	27	32	9	8
90	30	42	9	9
110	34	54	10	9
160	42	65	12	140
200			Butt Fusion	
250			Butt Fusion	
315			Butt Fusion	

## THERMAL CONDUCTIVITY

Material	( W/m k )
PPR	14
HDPE	15
Concrete	17
Steel / Gi	18
Copper	20
Aluminum	25

## ENERGY / HEAT LOSS %

Material	( W/m k )
PPR	1
HDPE	1.6
Concrete	3.3
Steel / Gi	200
Copper	1600
Aluminum	25

## Manufacturers Best Report of PPR Raw Material

TYPICAL PROPERTIES	Method	Value	Unit
<b>PHYSICAL</b>			
Melt Flow Rate	ASTM D 1238		
(230°C / 2016 kg)		0.3	g/10 min
(190°C / 5.0 kg)		0.5	g/10 min
(230°C / 5.0 kg)		1.3	g/10 min
Density	ASTM D 1505	0.9	g/cm <sup>3</sup>
<b>MECHANICAL</b>			
Tensile Strength @ Yield	ASTM D 638	270	Kg/cm <sup>2</sup>
Flexural Modulus (23°C)	ASTM D 790	8500	Kg/cm <sup>2</sup>
Tensile Elongation @ Yld	ASTM D 638	10	%
<b>IMPACT</b>			
Notched izod impact(23°C)	ASTM D 256	23	Kg-cm/cm
<b>THERMAL</b>			
Vicat Softening Point	ASTM D1525	123	°C
Thermal Conductivity	ASTM C 177	0.24	
<b>Note: Unit : W/m/K</b>			
Melting Temperature	DSC	141	°C
<b>Note: ISO 11357-3; heating rate : 10 K/min, 2nd heating</b>			
CLTE, Flow (23°C to 80°C)	ISO 11359 - 1,2	0.00015	Cm/Cm/°C
<b>Note: Coefficient of liner thermal expansion</b>			
Heat deflection temperature at 0.46	ASTM D 648	83	°C
<b>ELECTRICAL</b>			
Specific Surface resistivity	ASTM D 257/EC 93	>10 <sup>14</sup>	Ohm

**DETERMINATION OF THE LONG-TERM HYDROSTATIC STRENGTH**

ISC1980:2003-evaluation of Hostalen. WW H5416 K from LyondellBasell Industries

The ISO 9080-evaluation of the pipe grade gives the following strength values at 20, 70 °C and 50 years ;

T	Time	LPL	LTHS
20°C	50 yrs	11.38 Mpa	12.72 Mpa
70°C	50 yrs	3.21 Mpa	3.57 Mpa

By its LPL value of 11.38 Mpa at 20°C and 50 years the PPR pipe grade hostalen PP H5416 K from LyondellBasell Industries. Has a minimum required strength (MRS) of 11.2 Mpa and is thereby designated PPR 112 according to ISO 12162:2009. - **Thanks to LYONDELL BASELL, GERMANY**

**Control Point testing according to DIN 8078 of Topilene R 200P from Hyosung Corporation. (KOREA)**

A summary of the requirements for PPR pipes and the results obtained are given in the table below:

Characteristic	Requirement (DIN from 1996-04)	Result
Creep Strength	20°C 16.0 Mpa 21h	>1 h Pass
	95°C 3.5 Mpa 21000h	>1000h Pass
	110°C 1.9 Mpa 28760h	>8760h Pass

The test data obtained for the Topilene R200P pipes are in conformity with the requirements regarding creep strength according to DIN 8078:1996-04, paragraph 4.4 - **Thanks to HYOSUNG CORPORATION, KOREA**

**Resistance to Internal Pressure****Borouge Pte Ltd. (U.A.E)**

Summary of the resistance to internal pressure according to ISO 15874-2:2013 and DIN 8078:2008 are presented below.

**Resistance to internal pressure of PPR RA 140E**

T	Requirement		Testing Time to Burst	Result
	Hoop Stress	Time to Burst		
20°C	18.0 Mpa	>1 h	505 h	Pass
95°C	4.3 Mpa	>22 h	979 h	Pass
95°C	3.8 Mpa	>165 h	2123 h	Pass
95°C	3.5 Mpa	>1000 h	1953 h	Pass
110°C	1.9 Mpa	> 8760 h	10409 h	Pass

- **Thanks to BOROUGE PTE LTD. (U.A.E)**



## Chemical Resistance

### Rating System

This chart rates the chemical resistance of EUROAQUA & AIRGUARD according to the following code:

Note: The user is advised to make his or her own tests to determine the suitability of polypropylene in the particular environment.

#### A = Negligible effect

Should be suitable for all applications where these environmental conditions exist.

#### B = Limited absorption or attack

Should be suitable for most applications, but the user is advised to make his or her own tests to determine the suitability of Polypropylene in the particular environment.

#### C = Extensive absorption and/ or rapid permeation

Should be suitable for applications where only intermittent service is involved, or where the swelling produced has no detrimental effect on the part. The user should make his or her own tests to determine the suitability of Polypropylene in the particular environment.

#### D = Extensive attack

The specimen dissolves or disintegrates. environment. Polypropylene is not recommended.

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Acetic acid (glacial)	97	A	B	-
			(80°C)	
Acetic acid	50	A	A	-
			(80°C)	
Acetic acid	40	A	-	-
Acetic acid	10	A	A	-
Acetone	100	A	A	-
Acetophenone	100	B	B	-
Acriflavine	2	A	A	-
(2% solution in H <sub>2</sub> O)				(80°C)
Acrylic emulsions		A	A	-
Aluminium chloride		A	A	-
Aluminium fluoride		A	A	-
Aluminium sulfate		A	A	-
Alums (all types)		A	A	-
Ammonia (aqueous)	30	A	-	-
Ammonia gas (dry)		A	A	-
Ammonium carbonate	Satd.	A	A	-
Ammonium chloride	Satd.	A	A	-
Ammonium fluoride	20	A	A	-
Ammonium hydroxide	10	A	A	-
Ammonium metaphosphate	Satd.	A	A	-
Ammonium nitrate	Satd.	A	A	-
Ammonium persulfate	Satd.	A	A	-
Ammonium sulfate	Satd.	A	A	-
Ammonium sulfide	Satd.	A	A	-
Ammonium thiocyanate	Satd.	A	A	-
Amyl acetate	100	B	C	-
Amyl alcohol	100	A	B	-
Amyl chloride	100	C	C	-
Aniline	100	A	A	-
Anisole	100	B	B	-
Antimony chloride		A	A	-
Aviation fuel (115/145 octane)	100	B	C	-
Aviation turbine fuel	100	B	C	-
Barium carbonate	Satd.	A	A	-
Barium chloride	Satd.	A	A	-
Barium hydroxide		A	A	-
Barium sulfate	Satd.	A	A	-
Barium sulfide	Satd.	A	A	-
Beer		A	A	-
Benzene	100	B	C	C
Benzoic acid	A	A	-	-
Benzyl alcohol		A	A	-
			(80°C)	
Bismuth carbonate	Satd.	A	A	-
Borax		A		-
Boric acid		A		-

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Brine	Satd.	A	A	-
Bromine liquid	100	D	-	-
Bromine water	(a)	C	-	-
Butyl acetate	100	C	C	-
Butyl alcohol	100	A	A	-
Calcium carbonate	Satd.	A	A	-
Calcium chlorate	Satd.	A	A	-
Calcium chloride	50	A	A	-
Calcium hydroxide		A	A	-
Calcium hypochlorite bleach	20(a)	A	B	-
Calcium nitrate		A	A	-
Calcium phosphate	50	A	-	-
Calcium sulfate		A	A	-
Calcium sulfite		A	A	-
Carbon dioxide (dry)		A	A	-
Carbon dioxide (wet)		A	A	-
Carbon disulfide	100	B	C	-
Carbon monoxide		A	A	-
Carbon tetrachloride	100	C	C	C
Carbonic acid		A	A	-
Castor oil		A	-	-
Cetyl alcohol	100	A	-	-
Chlorine (gas)	100	D	D	-
Chlorobenzene	100	C	C	-
Chloroform	100	C	D	D
Chlorosulfonic acid	100	D	D	D
Chrome alum		A	A	-
Chromic acid	80(a)	A	-	-
Chromic acid	50(a)	A	A	-
Chromic acid	10(a)	A	A	-
Chromic/sulfuric acid		D	D	-
Cider		A	A	-
Citric acid	10	A	A	-
Cooper chloride	Satd.	A	A	-
Copper cyanide	Satd.	A	A	-
Copper fluoride	Satd.	A	A	-
Copper nitrate	Satd.	A	A	-
Copper sulfate	Satd.	A	A	-
Cottonseed oil		A	A	-
Cuprous chloride.	Satd.	A	A	-
Cyclohexanol	100	A	B	-
Cyclohexanone	100	B	C	-
Decalin	100	C	C	C
Detergents	2	A	A	A
Developers (photographic)		A	A	-
Dibutyl phthalate	100	A	B	D
Dichloroethylene	100	A	-	-
Diethanolamine	100	A	A	-

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Diisooctyl phthalate	100	A	A	-
Emulsifiers		A	A	-
Ethanolamine	100	A	A	-
Ethyl acetate	100	B	B	-
Ethyl alcohol	96	A	A	-
			(80°C)	-
Ethyl chloride	100	B	C	-
Ethylene dichloride	100	B	-	-
Ethylene glycol		A	A	-
Ethylene oxide	100	B	-	-
		(10°C)		-
Ethyl ether	100	B	-	-
Fatty acids (C6)	100	A	A	-
Ferric chloride	Satd.	A	A	-
Ferric nitrate	Satd.	A	A	-
Ferric sulfate	Satd.	A	A	-
Ferrous chloride	Satd.	A	A	-
Ferrous sulfate	Satd.	A	A	-
Fluorosilicic acid		A	A	-
Formaldehyde	40	A	A	-
Formic acid	100	A	-	-
Formic acid	10	A	A	-
Fructose		A	A	-
Fruit juices		A	A	-
Furfural	100	C	C	-
Gas liquor		C	-	-
Gasoline	100	B	C	C
Gearbox oil	100	A	B	-
Gelatin		A	A	-
Glucose	20	A	A	-
Glycerin	100	A	A	A
Glycol		A	A	-
Hexane	100	A	B	-
Hydrobromic acid	50(a)	A	A	-
Hydrochloric acid	30(a)	A	B	D
Hydrochloric acid	20	A	A	-
			(80°C)	
Hydrochloric acid	10	A	A	B
			(80°C)	
Hydrochloric acid	2	A	A	A
50-50 HCL-HNO3	(a)	B	D	-
			(80°C)	
Hydrofluoric acid	40	A	-	-
Hydrofluoric acid	60(a)	A	A	-
			(40°C)	
Hydrogen chloride gas ( dry)	100	A	A	-
Hydrogen peroxide	30	A	-	D
Hydrogen peroxide	10	A	B	-
Hydrogen peroxide	3	A	-	-
Hydrogen sulfied		A	A	-
Hydroquinone		A	A	-
Inks		A	A	-
Iodine tincture		A	-	-
Isoctane	100	C	C	-
Isopropyl alcohol	100	A	A	-
Ketones		A	-	-
Lactic acid	20	A	A	-
Lanolin	100	A	A	-
Lead acetate	Satd.	A	A	-
Linseed oil	100	A	A	-
Lubricating oil	100	A	B	-
Magenta dye (aqueous solution)	2	A	A	-
			Some Staining	
Magnesium carbonate	Satd.	A	A	-
Magnesium chloride	Satd.	A	A	-
Magnesium hydroxide	Satd.	A	A	-
Magnesium nitrate	Satd.	A	A	-
Magnesium sulfate	Satd.	A	A	-
Magnesium sulfite	Satd.	A	A	-

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Meat juices		A	A	-
Mercuric chloride	40	A	A	-
Mercuric cyanide	Satd.	A	A	-
Mercurous nitrate	Satd.	A	A	-
Mercury	100	A	A	-
Methyl alcohol	100	A	A	-
Methylene chloride	100	A	-	-
Methyl ethyl ketone	100	A	B	-
Milk and its products		A	A	A
Mineral oil	100	A	B	-
Molasses		A	A	-
Motor oil	100	A	B	-
Naphthalene	100	A	A	A
Nickel chloride	Satd.	A	A	-
Nickel nitrate	Satd.	A	A	-
Nickel sulfate	Satd.	A	A	-
Nitric acid	fuming	D	D	D
Nitric acid	70(a)	C	D	-
Nitric acid	60	A	D	-
			(80°C)	
Nitric acid	10		A	
50-50 HNO3HCl	(a)	B	D	
			(80°C)	
50-50 HNO3-H2S04	(a)	C	D	
			(80°C)	
Nitrobenzene	100	A	A	
Oleic acid		A	B	
Oleum		-	-	
Olive oil	100	A	A	
Oxalic acid (aqueous)	50	A	B	
Paraffin	100	A	B	
Paraffin wax	100	A	A	
Petrol	100	B	C	
Petroleum ether (boiling point 100 - 140 C)	100	C	C	
Phenol	100	A	A	
Phosphoric acid	95	A	A	
Plating solutions, brass		A	A	
Plating solutions, cadmium		A	A	
Plating solutions, chromium		A	A	
Plating solutions, copper		A	A	
Plating solutions, gold		A	A	
Plating solutions, Indium		A	A	
Plating solutions, lead		A	A	
Plating solutions, nickel		A	A	
Plating solutions, rhodium		A	A	
Plating solutions, silver		A	A	
Plating solutions, tin		A	A	
Plating solutions, zinc		A	A	
Potassium bicarbonate	Satd.	A	A	
Potassium borate	1	A	A	
Potassium bromate	10	A	A	
Potassium bromide	Satd.	A	A	
Potassium carbonate	Satd.	A	A	
Potassium chlorate	Satd.	A	A	
Potassium chloride	Satd.	A	A	
Potassium chromate	40	A	A	
Potassium cyanide	Satd.	A	A	
Potassium dichromate	40	A	A	
Potassium ferri-/ferrocyanide		A	A	
Potassium fluoride		A	A	
Potassium hydroxide	50	A	A	
Potassium hydroxide	10	A	A	
Potassium nitrate	Satd.	A	A	
Potassium perborate	Satd.	A	A	
Potassium perchlorate	10	A	A	
Potassium permanganate	20	A	A	
Potassium sulfate		A	A	
Potassium sulfide		A	A	
Potassium sulfite		A	A	

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Propyl alcohol	100	A	A	-
Pyridine	100	A	-	-
Silicone oil	100	A	A	-
Soap solution (concentrated)		A	A	-
Sodium acetate		A	A	-
Sodium bicarbonate	Satd.	A	A	-
Sodium bisulfate	Satd.	A	A	-
Sodium bisulfite	Satd.	A	A	-
Sodium borate		A	A	-
Sodium bromide oil solution		A	A	-
Sodium carbonate	Satd.	A	A	-
Sodium chlorate	Satd.	A	A	-
Sodium chloride	Satd.	A	A	A
Sodium chlorite	2	A	A(80°C)	-
Sodium chlorite	5	A(80°C)	A	-
Sodium chlorite	10	A(80°C)	A	-
Sodium chlorite	20	A(80°C)	A	-
Sodium cyanide	Satd.	A	A	-
Sodium dichromate	Satd.	A	A	-
Sodium ferricyanide	Satd.	A	A	-
Sodium ferrocyanide	Satd.	A	A	-
Sodium fluoride	Satd.	A	A	-
Sodium hydroxide	50	A	A	-
Sodium hydroxide	10	A	A	A
Sodium hypochlorite	20	A	B	B
Sodium nitrate		A	A	-
Sodium nitrite		A	A	-
Sodium silicate		A	A	-
Sodium sulfate	Satd.	A	A	-
Sodium sulfide	25	A	A	-
Sodium sulfite	Satd.	A	A	-
Stannic chloride	Satd.	A	A	-
Stannous chloride	Satd.	A	A	-
Starch		A	A	-

Environment	Conc. %	TEMP °C		
		20°	60°	100°
Sugars and syrups		A	A	-
Sulfamic acid		A	A(80°C)	-
Sulfates of Calcium & Magnesium		A	A	-
Sulfates of Potassium & Sodium		A	A	-
Sulfur		A	A	-
Sulfuric acid	98(a)	C	-	D
Sulfuric acid	60	A	B(80°C)	-
Sulfuric acid	50	A	B	-
Sulfuric acid	10	A	A	A
50-50 H2SO4/HNO3	(a)	C	D(80°C)	-
Tallow		A	A	-
Tannic acid	10	A	A	-
Tartaric acid		A	A	-
Tetrahydrofuran	100	C	C	C
Tetralin	100	C	C	C
Toluene	100	C	C	-
Transformer oil	100	A	C	-
Trichloroacetic acid	10	A	C	-
Trichloroethylene	100	A	A(80°C)	-
Turpentine	100	C	C	C
Urea		A	A	-
Urine		A	A	-
Water (distilled, soft, hard and vapour)		A	A	A
Wet chlorine gas		-	D(80°C)	-
Whiskey		A	A	A
White Paraffin	100	A	B(80°C)	-
White spirit	100	B	C	-
Wines		A	A	-
Xylene	100	C	C	C
Yeast		A	A	-
Zinc chloride	Satd.	A	A	-
Zinc oxide		A	A	-
Zinc sulfate	Satd.	A	A	-





## EUROAQUA PP-RCT PIPES

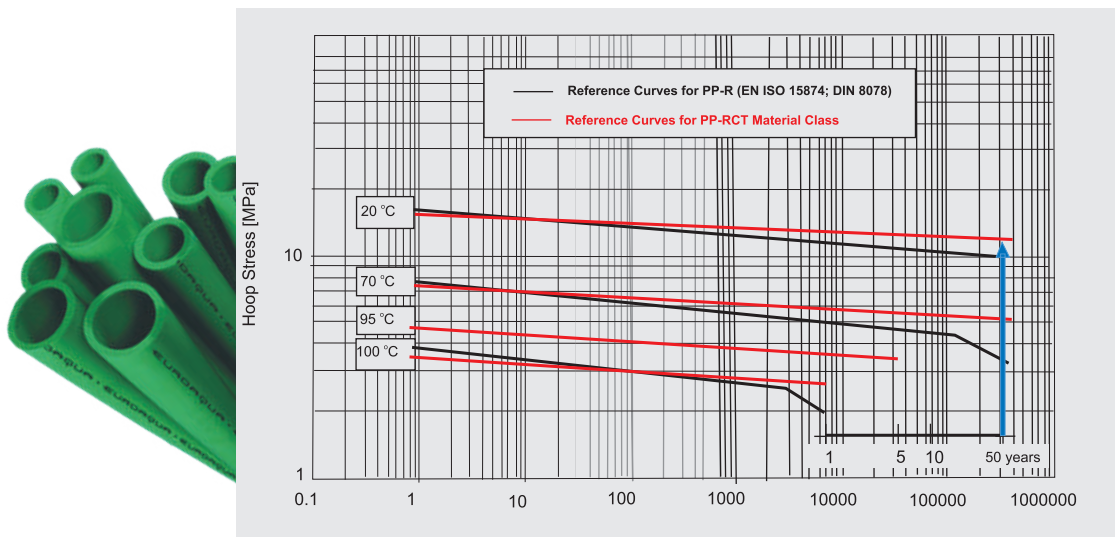
### About PP-RCT

We proudly announce that M/s EUROAQUA PLUMTEK PVT LTD is the Largest Manufacturer of PPR- Pipes & Fittings in the Brand Name of EUROAQUA & AIRGUARD. We have achieved one more milestone that First company in South Asia Launched PP-RCT (Polypropylene Random Crystalline Temperature) with virgin Raw Material from Austria.

When compare with Regular PPR — PIPES & FITTINGS PP-RCT has got unique Advantage of working at Highest working pressure with minimum wall thickness of the Pipe. By giving the biggest advantage of Cost Effectiveness and Pressure with standing capacity.

PP-RCT can be used for Transportation of Water with Highest Pressure and can be used for Construction Industry/ High Rise Buildings/ Industries for Pneumatic Application / Chemical Transportation / Food Industries / Textile Industries / Pharma Industries etc.

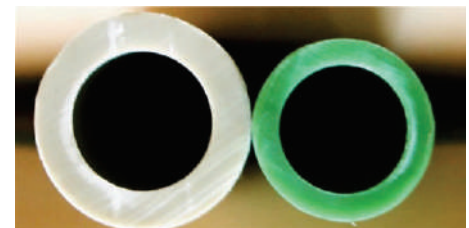
### Comparison of PPR and PP-RCT long term Hydrostatic Pressure Performance Curves



The long term performance of PP-RCT at higher temperature is superior compared to standard PPR material.

Based on Design Stress Values the comparison of PPR and PP-RCT is given below

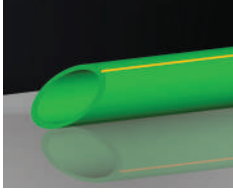
	Operating Pressure 8 bar (116 psi)		Operating Pressure 10 bar (116 psi)	
	PP-R	PP-RCT	PP-R	PP-RCT
Application class 1 60°C hot water supply	S 3.2 SDR 7.4	S 4 SDR 9	S 2.5 SDR 6	S 3.2 SDR 7.4
Application class 2 70°C hot water supply	S 2.5 SDR 6	S 4 SDR 9	S 2 SDR 5	S 3.2 SDR 7.4



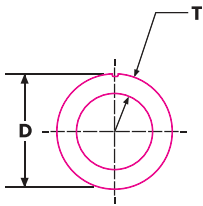
**1<sup>st</sup> COMPANY IN SOUTH ASIA INTRODUCED PP-RCT TECHNOLOGY**

**PP-RCT PIPES**

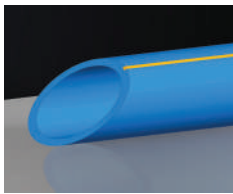
**PN 12.5 / SDR 14 / S 6.5**



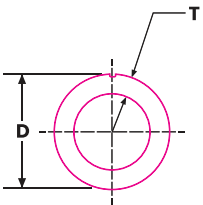
CODE	SIZE (DxT)	LENGTH/ BUNDLE
ECT406	63x4.40mm	*
ECT407	75x5.40mm	*
ECT408	90x6.40mm	*
ECT409	110x7.90mm	*
ECT410	125x8.9mm	*
ECT411	160x11.5mm	*



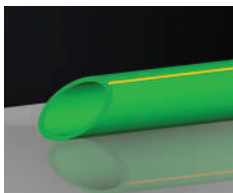
**PN 16 / SDR 11 / S 5**



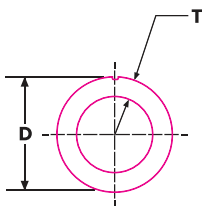
CODE	SIZE (DxT)	LENGTH/ BUNDLE
ERCT501	20x2.0mm	*
ERCT502	25x2.3mm	*
ERCT503	32x2.9mm	*
ERCT504	40x3.7mm	*
ERCT505	50x4.6mm	*
ERCT506	63x5.8mm	*
ERCT507	75x6.8mm	*
ERCT508	90x8.2mm	*
ERCT509	110x10.0mm	*
ERCT510	160x14.6mm	*



**PN 20 / SDR 9 / S 4**

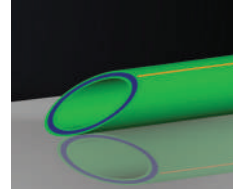


CODE	SIZE (DxT)	LENGTH/ BUNDLE
ERCT601	20x2.20mm	*
ERCT602	25x2.80mm	*
ERCT603	32x3.6mm	*
ERCT604	40x4.4mm	*
ERCT605	50x5.6mm	*
ERCT606	63x7.0mm	*
ERCT607	75x8.4mm	*
ERCT608	90x12.3mm	*
ERCT609	110x15.10mm	*

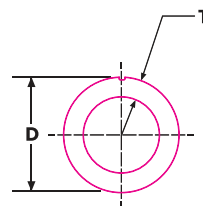


**PP-RCT + FRP THERMOKING**

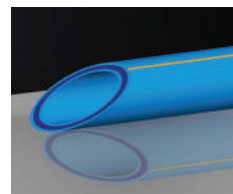
**PN 12.5 / SDR 17.5 / S 8.25**



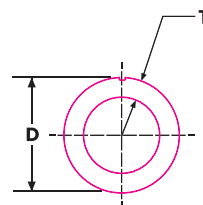
CODE	SIZE (DxT)	LENGTH/ BUNDLE
ECT406F	63x3.7mm	*
ECT407F	75x4.3mm	*
ECT408F	90x5.2mm	*
ECT409F	110x6.3mm	*
ECT410F	160x9.2mm	*
ECT411RF	125x7.2mm	*
ECT412RF	260x11.40mm	*
ECT413RF	250x14.20mm	*
ECT414RF	315x18mm	*



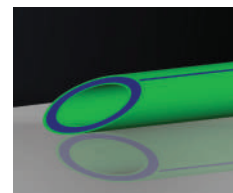
**PN 16 / SDR 9 / S 4**



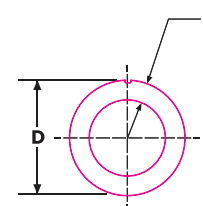
CODE	SIZE (DxT)	LENGTH/ BUNDLE
ECT504F	40x4.4mm	*
ECT505F	50x5.6mm	*
ECT506F	63x7.0mm	*
ECT507F	75x8.3mm	*
ECT508F	90x10mm	*
ECT509F	110x12.20mm	*
ECT510F	125x13.90mm	*
ECT511F	160x17.50mm	*



**PN 20 / SDR 11 / S 5**



CODE	SIZE (DxT)	LENGTH/ BUNDLE
ECT603F	32x2.9mm	*
ECT604F	40x3.7mm	*
ECT605F	50x4.60mm	*
ECT606F	63x5.8mm	*
ECT607F	75x6.8mm	*
ECT608F	90x8.2	*
ECT609F	110x10mm	*



Custom Made

Available Colours: GREEN BLUE BLACK WHITE RED

Another way of looking at the performance of a plastic pipe is to consider the permissible operating pressure for a given dimension at a specified temperature and service life. This is chosen in DIN 8077 which shows tables for the permissible operating pressures for PP pipes. A Comparison of the permissible operating pressures (including a safety factor of 1.5) for pipes of different dimensions made of PPR and PP-RCT is give below.

### Design Principles: Permissible Operation Pressures (Safety Factor = 1.5)

Temp (°C)	Operating Time (Years)	S 2 SDR 5		S 2.5 SDR 6		S 3.2 SDR 7.4		S 4 SDR 9	
		PPR	PPR-CT	PPR	PPR-CT	PPR	PPR-CT	PPR	PPR-CT
20	10	34.5	39.8	27.4	31.6	21.7	25.1	17.2	19.9
	25	33.3	39.1	26.4	31.0	21.0	24.6	16.6	19.6
	50	32.4	38.5	25.7	30.6	20.4	24.3	16.2	19.3
40	10	24.7	29.5	19.6	23.4	15.5	18.6	12.3	14.7
	25	23.7	28.9	18.8	22.9	15.0	18.2	11.9	14.4
	50	23.1	28.4	18.3	22.6	14.5	17.9	11.5	14.2
60	10	17.5	21.2	13.9	16.8	11.0	13.4	8.7	10.6
	25	16.7	20.7	13.3	16.5	10.5	13.1	8.4	10.4
	50	16.2	20.4	12.9	16.2	10.2	12.8	8.1	10.2
70	10	14.6	17.8	11.6	14.1	9.2	11.2	7.3	8.9
	25	12.7	17.4	10.0	13.8	8.0	10.9	6.3	8.7
	50	10.7	17.0	8.5	13.5	6.7	10.7	5.3	8.5
80	10	10.2	14.8	8.1	11.7	6.4	9.3	5.1	7.4
	25	8.1	14.4	6.5	11.4	5.1	9.1	4.1	7.2

This again demonstrates the better performance of the new material class in that pipes made of PP-RCT which can withstand much higher operating pressures than pipes of the same dimension made PPR.

### Advantages and Main Features of EUROAQUA PP-RCT PIPES

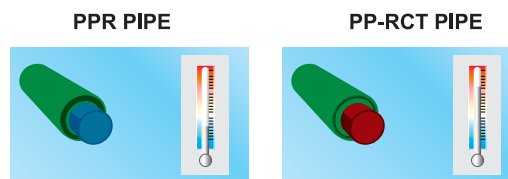
EUROAQUA PP-RCT Advanced Piping Technology is a New High Technology System of PP-RCT Pipes, that is suitable for liquid transportation, Chemical Lines, Compressed Air Lines & Systems using High Pressure.

#### Higher Flow Rate



- Reduced Wall Thickness leads a Higher Flow.
- Rate for Same and Higher Pressure Load.
- 37% Higher flow rate when compared to normal PP-R Pipes.

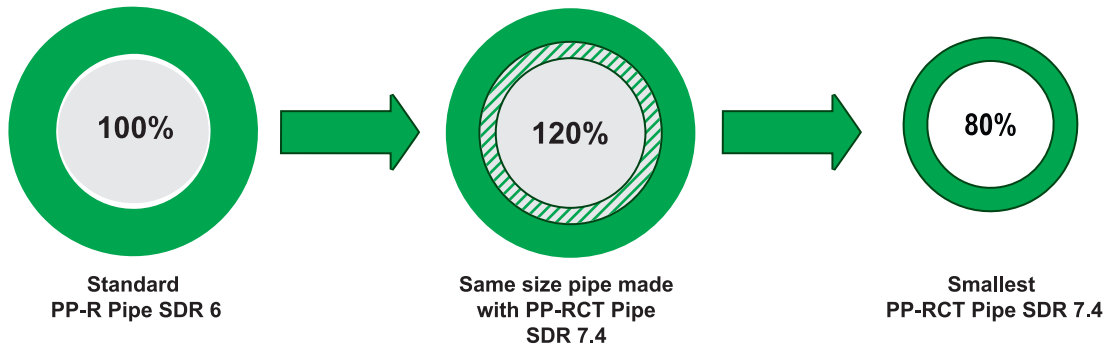
#### Higher Stability



- PP-RCT Pipes are Working in Maximum Temperature at Higher Pressure Resistance up to 95°C.

**Reduced Costs**

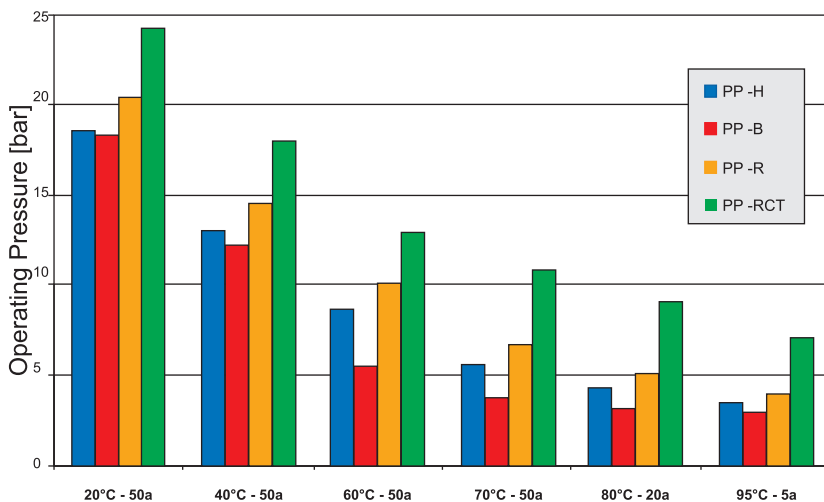
**“Reduced Systems Cost” : Maintain water flow using a higher percentage of smaller sized pipes**



- PP-RCT Pipes have 18% Reduced Wall Thickness when compared to PPR Pipes, this respectively increase the inside area of the pipe.
- So that we can replace a certain percentage of smaller size pipes with equivalent flow rates of larger Size of PP-R pipes.
- This will help us to Reduce Pipe System Costs, Pipe Insulation Costs & Labor Costs.
- Example: 75 mm SDR 6 PP-R Pipes can be Replaced with Ø63mm SDR 7.4 PP-RCT Pipes.

**Benefits of EUROAQUA PPR-CT Pipes**

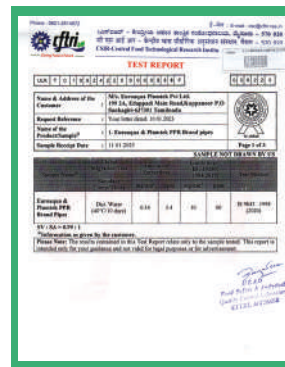
- EUROAQUA PPR-CT Pipe offers higher Hydraulic capacity with lesser outer diameter or the same outer diameter.
- Our EUROAQUA PPR-CT Pipe System requires a higher percentage of smaller pipes in any kind of installation.
- Easy to install with the same welding technology used for PP-R Pipes.
- EUROAQUA PPR-CT Pipes reduce the cost and provide efficient plumbing lines.
- EUROAQUA PPR-CT Pipes are easy to exchange with the existing PP-R Pipe lines.
- EUROAQUA PPR-CT Pipes will perform best with High temperature radiators at high temperatures



Test Report & Certificates



WRAS CERTIFICATE



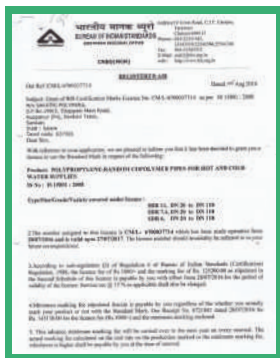
FOOD GRADE CERTIFICATE



PPR CIPET CERTIFICATE



NSF CERTIFICATE



ISI CERTIFICATE



PP-RCT CIPET CERTIFICATE



ROUGHNESS CERTIFICATE





BIB Tap - Vibrant



Right Angle Valve - Vibrant



Pillar Tap - Monolisa



Sink Faucet Mini - Flemingo



Kitchen Mixer Ultra



Wall Mixer



Sink Faucet Wall - M Handle



Eco 5A Mini - M Handle



COLT BIB TAP U-HANDLE



COLT 90° DOUBLE ANGLE VALVE T-HANDLE



COLT GARDEN TAP C-HANDLE



RIGHT ANGLE VALVE L-HANDLE

# TAPS & FAUCETS

EUROAQUA  
**PLUMtek**  
PPR & PPR-CT PLUMBING TECHNOLOGY  
www.plumtek.in



Easy to Install



Long - Lasting



Free Flow



Engineering Polymers



MIRROR CABINET



FLUSH TANK



SEAT COVER



BALL VALVE & STOP VALVE



OVER HEAD SHOWER



HEALTH FAUCET



COLLAPSIBLE WASTE HOSE

SCAN QR CODE FOR ALL RANGES OF OUR PRODUCTS

# HOSES

**BONDING BEYOND BOUNDARIES**

**tension FREE hoses**



Delivery Hoses



Heavy Duty Suction Hoses



Suction & Delivery Hoses



Braided Hoses



Transparent Garden Hoses



Welding Hoses



Pneumatic Hoses



Level Tube



Steel Wire Hose



Yellow Black Hose



Duct Hose



Corrugated Hose



Flower Pot



Ghabela



PERT Pipe



Elbow



Tee



Wall Plate Male Thread Elbow



Male Thread Adaptor



Reducer



Tank Connector



PERT Pipe ( Roll )

PLUMtek FASTFIT

# PERT PIPES & PB1 UNIVERSAL PUSH FITTINGS

NO GLUE NEEDED NO WELDING NEEDED JUST PUSH INSIDE EASY AND FASTFIT



Operating Temperature : -30° c to 95° c

Available Size : Ø 20,25,32 mm | Ø 20 mm - Ø 160 mm  
( FASTFIT ) ( Socket welding )



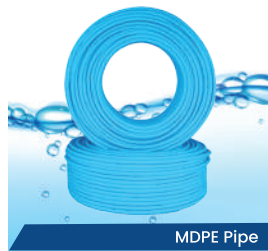
Scan for PE-RT  
Installation Video



Hot & Chilled Water Infrastructure Solar Heating System  
 Strong Chemicals Under Floor Heating Food Pharma

SCAN QR CODE FOR ALL RANGES OF OUR PRODUCTS

## MDPE PIPES & FITTINGS



MDPE Pipe



UPVC Ball Valve



Tee - Triple Compression



Coupler Double Compression



Male Thread Adaptor



Male Thread Elbow



Female Thread Adaptor



Clamp Saddle



Scan for Youtube



Manufactured By  
**EUROAQUA PLUMTEK PVT LTD**

An ISO 9001 : 2015 Certified Company



Scan for All Catalogues

**Major Clients & Customers**



**MARKET**

- India
- Gulf
- Europe
- Maldives
- Srilanka
- Africa
- USA
- Canada etc



**OVERSEAS BUSINESS**

Euroaqua Link Pvt Ltd, Colombo - 10, Sri Lanka.

Activity:

- Import, Stock & Marketing of all our Manufacturing Goods,
- Few PPR Fittings Manufacturing in Srilanka.



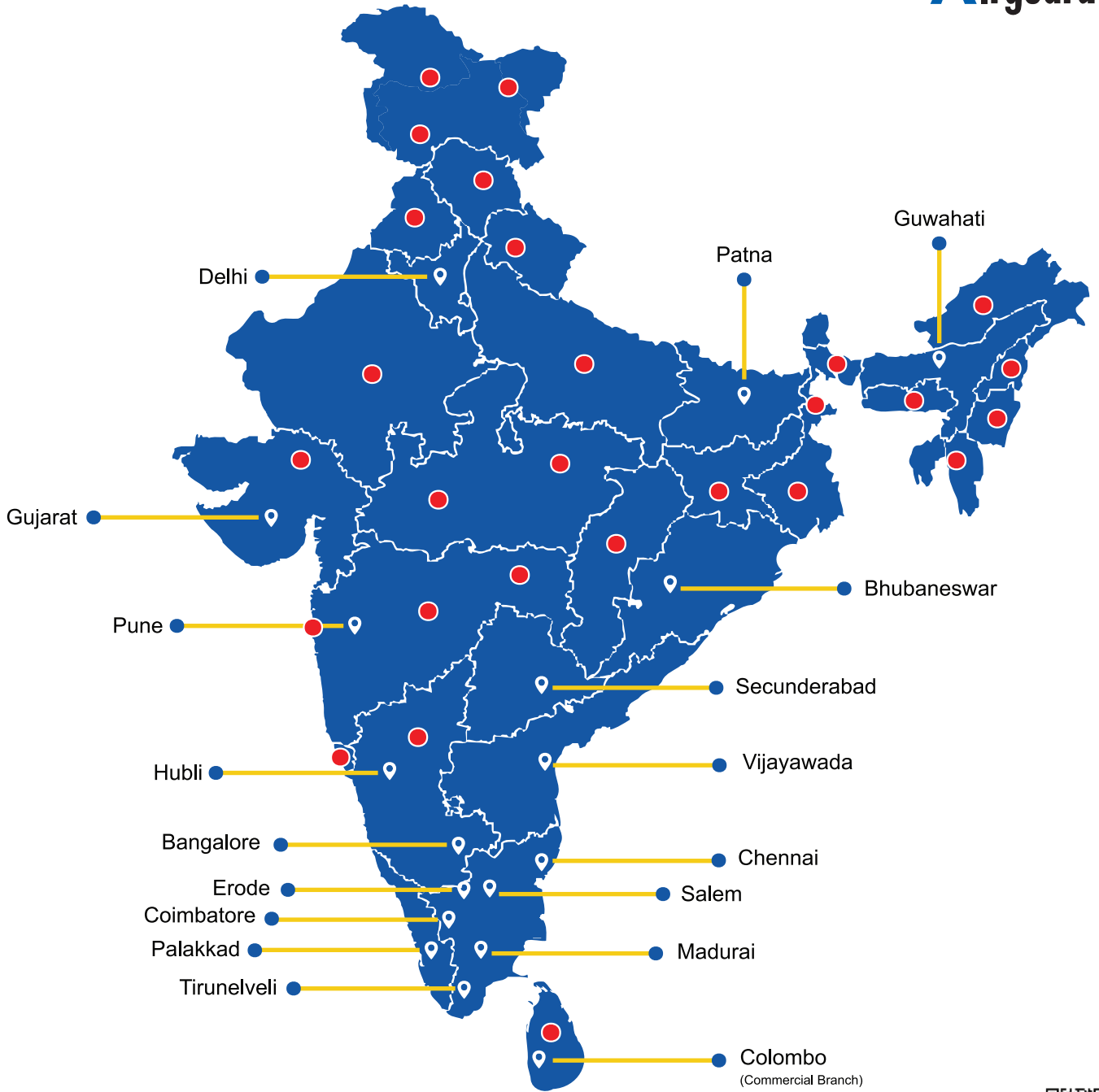

# OUR BRANCHES

EUROAQUA  
**PLUMtek**  
ELEGANT & ECONOMIC  
TAPS | FAUCETS | HOSES | PIPES & FITTINGS

EUROAQUA  
PPR & PPR-CT PLUMBING TECHNOLOGY

PLUMtek **FASTFIT**

EUROAQUA  
**Airguard**



**Our Branches**



**Products Available Areas ( Other than Branches )**



Scan for Plumtek Youtube



TAPS & FAUCETS

PVC HOSES

PPR PIPES & FITTINGS

PE-RT PIPES & FITTINGS

MDPE PIPES & FITTINGS



Scan for Plumtek Website



Manufactured By  
**EUROAQUA PLUMTEK PVT LTD**

An ISO 9001 : 2015 Certified Company

**Head Office:**

Edappadi Main Road, Kuppanoor P.O.,  
Sankagiri - 637 301, Tamilnadu, India.

**Customer Care:** ☎ +91 4283 242936/37 📞 +91 99650 05555, 73730 73333

✉ support@euroaquappr.com 🌐 www.plumtek.in | www.euroaquappr.com



Scan for Euroaqua Website