

# **PP-R HOT and COLD WATER SYSTEMS**

## **Advantages**



**Long Service Life**



**Rust and Corrosion Free**



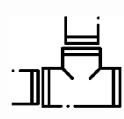
**Smooth Inner Surface /  
No Scaling**



**Speed and Ease of  
Installation**



**Resistant to High Pressures at  
High Temperatures**



**Leak-Free Systems with Fusion  
Technology**



**Eco-friendly & Recyclable**



**Hygienic Drinking Water  
Supply**

## **Application Areas**

- ✓ Drinking Water Supply
- ✓ Transport of Chemicals
- ✓ Radiator Heating Systems
- ✓ Plumbing in Hot and Cold Water Lines
- ✓ Underfloor Heating and Cooling Systems



## SERVICE LIFE

Temperature, °C	Service life, Years	For water installations According to DIN 8077 Safety - Factor of 1.5			
		PPR Pipe SDR 11	PPR Pipe SDR 9	PPR Pipe SDR 7.4	PPR Pipe SDR 6
		Permissible working Pressure at Various Temperatures (bars)			
10	1	17.5	22.1	27.8	35.1
	5	16.5	20.8	26.2	33.0
	10	16.1	20.3	25.6	32.2
	25	15.6	19.6	24.7	31.1
	50	15.2	19.1	24.1	30.3
	100	14.9	18.6	23.5	29.6
	1	15.0	18.8	23.7	29.9
	5	14.1	17.7	22.3	28.1
	10	13.7	17.2	21.7	27.4
	25	13.2	16.6	21.0	26.4
20	50	12.9	16.2	20.4	25.7
	100	12.5	15.8	19.9	25.0
	1	12.7	16.0	20.2	25.4
	5	11.9	15.0	18.9	23.8
	10	11.6	14.6	18.4	23.2
	25	11.2	14.1	17.7	22.3
	50	10.9	13.7	17.2	21.7
	100	10.6	13.3	16.8	21.1
	1	10.8	13.6	17.1	21.6
	5	10.1	12.7	16.0	20.2
30	10	9.8	12.3	15.5	19.6
	25	9.4	11.9	15.0	18.8
	50	9.2	11.5	14.5	18.3
	100	8.9	11.2	14.1	17.8
	1	9.1	11.5	14.5	18.2
	5	8.5	10.7	13.5	17.0
	10	8.2	10.4	13.1	16.5
	25	7.9	10.9	12.6	15.9
	50	7.7	9.7	12.2	15.4
	100	7.5	9.4	11.8	14.9
40	1	7.7	9.7	12.2	15.4
	5	7.1	9.0	11.3	14.3
	10	6.9	8.7	11.0	13.9
	25	6.6	8.4	10.5	13.3
	50	6.4	8.1	10.2	12.9
	100	6.5	8.1	10.3	12.9
	1	6.5	8.1	10.3	12.9
	5	6.0	7.5	9.5	12.0
	10	5.8	7.3	9.2	11.6
	25	5.0	6.3	8.0	10.0
50	50	4.2	5.3	6.7	8.5
	1	5.4	6.8	8.6	10.8
	5	4.8	6.0	7.6	9.6
	10	4.0	5.1	6.4	8.1
	25	3.2	4.1	5.1	6.5
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
60	50	4.2	5.3	6.7	8.5
	1	5.4	6.8	8.6	10.8
	5	4.8	6.0	7.6	9.6
	10	4.0	5.1	6.4	8.1
	25	3.2	4.1	5.1	6.5
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
70	50	4.2	5.3	6.7	8.5
	1	5.4	6.8	8.6	10.8
	5	4.8	6.0	7.6	9.6
	10	4.0	5.1	6.4	8.1
	25	3.2	4.1	5.1	6.5
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
80	50	4.2	5.3	6.7	8.5
	1	5.4	6.8	8.6	10.8
	5	4.8	6.0	7.6	9.6
	10	4.0	5.1	6.4	8.1
	25	3.2	4.1	5.1	6.5
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
95	50	4.2	5.3	6.7	8.5
	1	5.4	6.8	8.6	10.8
	5	4.8	6.0	7.6	9.6
	10	4.0	5.1	6.4	8.1
	25	3.2	4.1	5.1	6.5
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6
	5	2.6	3.2	4.1	5.2
	1	3.8	4.8	6.1	7.6

## PROPERTIES of PP-R PIPING SYSTEMS

<b>Raw Material</b>	PP-R
<b>Density at 23°C</b>	0.9 g/cm³
<b>Pipe Length</b>	4 m - 6 m
<b>Connection</b>	Fusion Welding
<b>Coefficient of Linear Thermal Expansion:</b>	
- PPR Monolayer Pipes	0.150 mm/mK
- PPR Faser Pipes	0.040 mm/mK
- PPR Stabi Centro Pipes	0.025 mm/mK
<b>Thermal Conductivity at 20°C:</b>	
- PPR Monolayer Pipes	0.240 W/mK
- PPR Faser Pipes	0.183 W/mK
<b>Standards</b>	
<ul style="list-style-type: none"> <li>- EN ISO 15874</li> <li>- DIN 8077/8078,</li> <li>- DIN 16962</li> <li>- DIN 2999</li> <li>- TS 9937</li> <li>- TS 13715</li> <li>- DVGW W 270</li> <li>- ISO 21003-2</li> </ul>	

## AVAILABLE COLOR RANGE

-  **White**
-  **Green**
-  **Blue**
-  **Cappuccino**
-  **Grey**
-  **Black**



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## PIPE DIMENSIONS

### PP-R Monolayer Pipes

SDR 6		SDR 7.4		SDR 11	
Hot & Cold Water		Hot & Cold Water		Cold Water	
PN20		PN16		PN10	
Dimension, OD (mm)	Thickness (mm)	Dimension, OD (mm)	Thickness (mm)	Dimension, OD (mm)	Thickness (mm)
20	3.4	20	2.8	20	2.0
25	4.2	25	3.5	25	2.3
32	5.4	32	4.4	32	2.9
40	6.7	40	5.5	40	3.7
50	8.3	50	6.9	50	4.6
63	10.5	63	8.6	63	5.8
75	12.5	75	10.3	75	6.8
90	15.0	90	12.3	90	8.2
110	18.3	110	15.1	110	10.0
125	20.8	125	17.1	125	11.4
160	26.6	160	21.9	160	14.6
200	33.2	200	27.4	200	18.2
-	-	250	34.2	250	22.7



AENOR



Producto Certificado



### PP-R Faser Pipes

SDR 6		SDR 7.4		SDR 9		SDR 11	
Hot & Cold Water							
PN 20		PN16		PN12,5		PN10	
Dimension, OD (mm)	Thickness (mm)						
20	3.4	20	2.8	-	-	-	-
25	4.2	25	3.5	-	-	-	-
32	5.4	32	4.4	32	3.6	32	2.9
40	6.7	40	5.5	40	4.5	40	3.7
50	8.3	50	6.9	50	5.6	50	4.6
63	10.5	63	8.6	63	7.1	63	5.8
75	12.5	75	10.3	75	8.4	75	6.8
90	15.0	90	12.3	90	10.1	90	8.2
110	18.3	110	15.1	110	12.3	110	10.0
125	20.8	125	17.1	-	-	125	11.4
160	26.6	160	21.9	-	-	160	14.6
200	33.2	200	27.4	-	-	200	18.2
-	-	250	34.2	-	-	250	22.7

### PP-R Stabi Centro Pipes

SDR 6		SDR 7.4	
Hot & Cold Water		Hot & Cold Water	
PN20		PN16	
Dimension, OD (mm)	Thickness (mm)	Dimension, OD (mm)	Thickness (mm)
20	3.4	20	2.8
25	4.2	25	3.5
32	5.4	32	4.4
40	6.7	40	5.5
50	8.3	50	6.9
63	10.5	63	8.6
75	12.5	75	10.3
90	15.0	90	12.3
110	18.3	110	15.1

### PP-R Stabi Super Pipes

SDR 5		SDR 6	
Hot & Cold Water		Hot & Cold Water	
PN25		PN20	
Dimension, OD (mm)	Inner Layer Thickness (mm)	Dimension, OD (mm)	Inner Layer Thickness (mm)
20	3.4	20	2.8
25	4.2	25	3.5
32	5.4	32	4.4
40	6.7	40	5.5
50	8.3	50	6.9
63	10.5	63	8.6
75	12.5	75	10.3
90	15.0	90	12.3
110	18.3	110	15.1

### PP-R Fittings

SDR 6	
Hot & Cold Water	
PN25	
Dimension, OD (mm)	Thickness (mm)
20	3.4
25	4.2
32	5.4
40	6.7
50	8.3
63	10.5
75	12.5
90	15.0
110	18.3



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# PP-R Monolayer Pipes

Serene Plastik San. Tic. Ltd. Ltd. (SERENEPLAST) was established in 2011 to bring new dimensions to PP-R and U-PVC piping solutions. Apart from our product spectrum in various markets, the continuity and realization of R&D efforts forms an integral part of our business management activities aimed at managerial development.



Export markets are our main target market for our products. Our products are preferred by customers in Russia, CIS countries, Arab countries and Eastern Europe. Our goal is to provide customers quality solutions in piping systems and become a well-known leading brand in the industry.



At SERENEPLAST, we give priority to presenting our products in the markets related to SERENEPLAST's business in such a way so as to accommodate our customers' needs in the best possible manner and to ensuring that sound relations are established with our customers.



*Under normal working pressures and conditions,  
the average service life of SERENEPLAST pipes is  
projected to be 50 years or more.*



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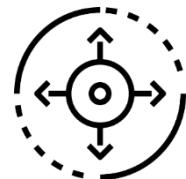
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# PP-R Faser Pipes

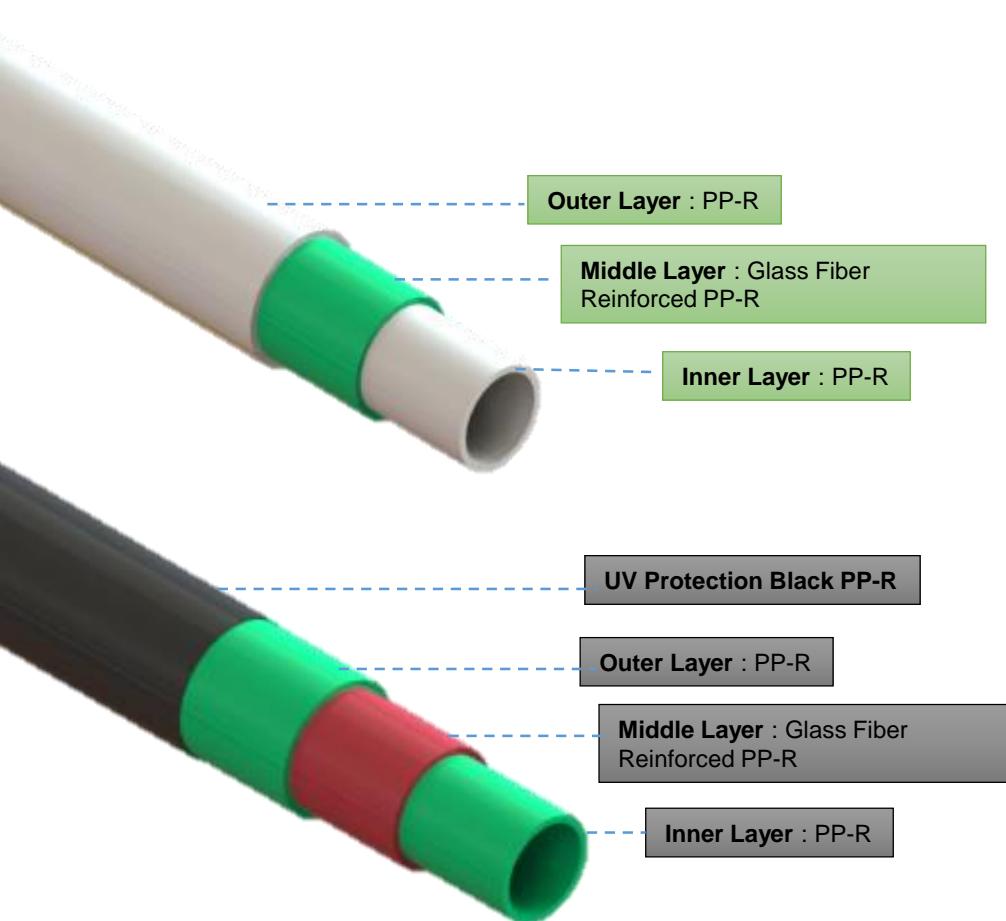
SP-Sereneplast Faser Pipes consist of three layers including **%20 Fiber Glass** and **%80 PP-R raw materials**.

## Class of SP-Sereneplast PP-R Faser Pipes

- Class 1/10 bar
- Class 2/8 bar
- Class 4/10 bar
- Class 5/6 bar



***Less expansion, fewer clamps***



# PP-R Stabi Centro Pipes

SP-Sereneplast Stabi Centro Pipes consist of PP-R and non-perforated aluminum layer bonded with a polypropylene based adhesive.

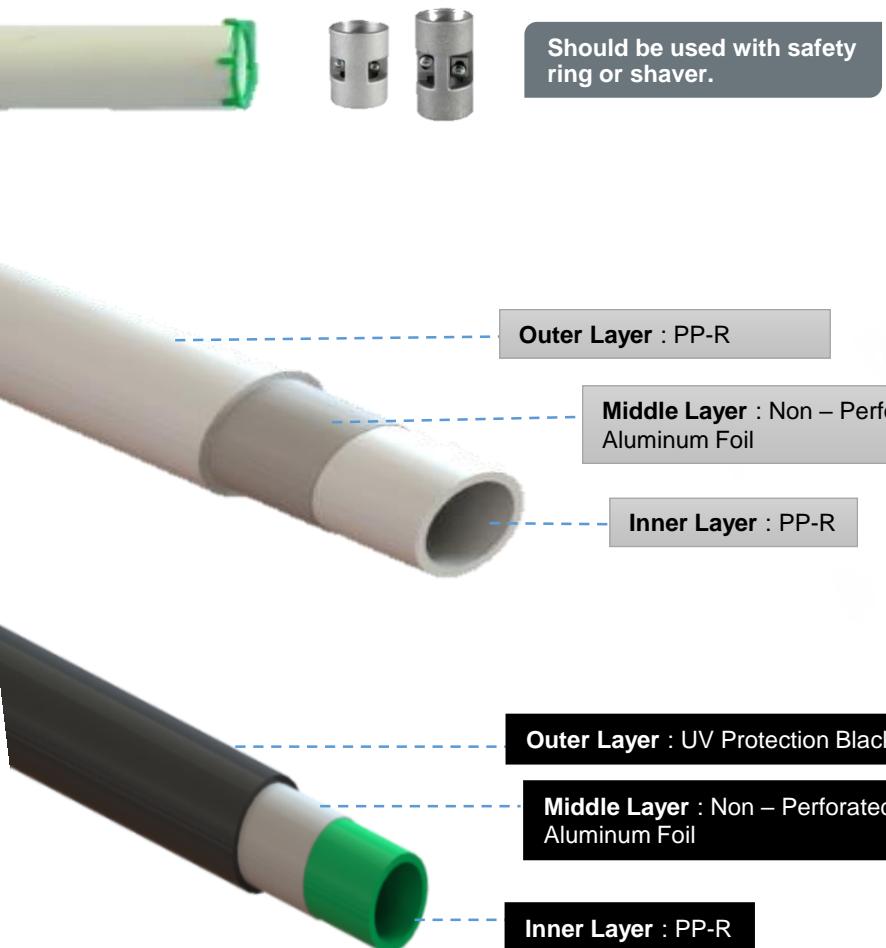


## Class of SP-Sereneplast PP-R Stabi Centro Pipes

- Class 1/10 bar
- Class 2/8 bar
- Class 4/10 bar
- Class 5/6 bar

## Oxygen Barrier

*They ensure that a central heating boiler operate in an efficient system integrity.*



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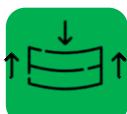
# PP-RCT MONO and FASER PIPES



SP PP-RCT and FASER pipes, produced from PP-RCT raw material, a new generation polypropylene, are designed for hot and cold water system and have higher flow rate, improved high pressure resistance and pressure resistance for long-term use at high temperatures compared to ordinary PP-R pipe.



Provides high strength against exposure to heavy loads in Construction conditions.



Provides high resistance to breakage and cracking against improper loading and unloading



SP PP-RCT Mono and Faser pipes have less linear expansion than other pipes, minimizing elongation in hot water lines and providing less clamp usage.

**SP PP-RCT Mono & Faser pipes can be used with all standard SP PP-R fittings without any trimming/additional processing.**



Size of Pipe:  $\phi 20\text{mm} - \phi 250\text{mm}$   
SP PP-RCT pipes provides the opportunity to use smaller diameters if desired, due to its wider inner diameter.

## PP-RCT Application Areas



Drinking Water and Pipe Networks



Hotels



Swimming Pools Areas With Chlorine Use



Hospitals



Transport of Industrial Waste



Radiator Heating Systems



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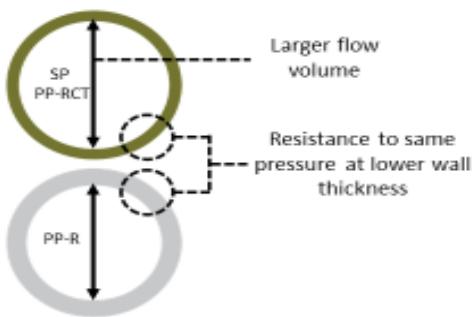


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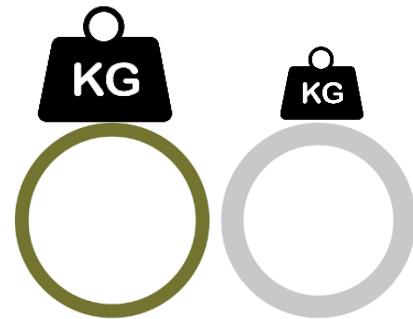
# PP-RCT MONO and FASER PIPES



- ✓ **Up to 18% higher flow rates**
- ✓ **Provides resistance to heavier loads/pressures**
- ✓ **Possibility to use smaller pipes with equal temperature and pressure resistance.**
- ✓ **Lighter pipe compared to PP-R.**
- ✓ **Compatible with existing PP welding procedures**
- ✓ **Local and global, including ISO, ASTM and DIN fully established in the standards.**
- ✓ **Using PP-RCT in your pipe design will provide higher performance than standard PP-R!!**



**18% Higher Flow Rates**



**Provides resistance to heavier loads/pressures**

Parameter	Unit	PP-R	PP-RCT
Diameter	mm	25	25
Pressure Class	PN	20	20*
Wall Thickness	mm	4,2	3,5*
Inner diameter	mm	16,6	18*
Internal Flow Field	mm <sup>2</sup>	216	254

\* by comparing with PP-R Type 3



In the long term, it has higher compressive strength at high temperatures.



Due to its light weight, it provides ease of transportation, assembly and use.



As it has a thinner wall thickness at the same pressure, friction loss is reduced and provides a more comfortable flow.



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# PP-R Fittings

All fittings are injection molded and manufactured according to the prescribed standards. To interface with other systems, SP-Sereneplast PPR threaded male or female fittings with brass inserts comply with BS6920 for use in drinking water.

## Class of SP-Sereneplast PP-R Fittings

- Class 1/10 bar
- Class 2/10 bar
- Class 4/8 bar
- Class 5/8 bar



SP-Sereneplast PP-R Fittings can be jointed to:

- ✓ Monolayer Pipes
- ✓ Faser Pipes
- ✓ Stabi Cento Pipes
- ✓ Stabi Super Pipes

## Comprehensive Range 20-160 mm

