

# MAF PLASTICS

## HYGIENIC PIPING SYSTEM

### PP-R PIPES AND FITTINGS



**wavin**

**Pilsa**  
Made in Turkey







## WHY PILSATHERM PIPE?

### QUALITY STANDARDS

Pilsa PP-R pipes are manufactured in compliance with Turkish Standards (TS 9937-11451-11755), DIN 8077, DIN 8078. Our products are approved and certified by: WRAS (England), GOST (Russia), Ukraine Standard (Ukraine), SJJ (China), Slovakia, Romania, Poland, Bulgaria and have the certificates of guarantee obtained from the Turkish Standards Institute (TSE). Pilsa PP-R pipes and fittings also have the certificate from Hygiene Institute (Germany).

### PILSA PPRC PIPE

Being one of the most powerful firms in the country in the plastic sector, WAVIN PILSA gives the almost importance to quality.

- Uses the most appropriate raw material,
- Has the most advanced high technology.
- Produces pipes in compliance with Turkish (TS) and German (DIN) Standards,
- Pipes produced can be used not only to carry water but a wide range of fluids as well.
- Has qualified technical staff at your service to solve your problems,
- Our name stands for quality.

### TECHNICAL PROPERTIES OF PILSATHERM PIPES & FITTINGS

Pilsatherm has got the following advantages:

- Lightweight.
- Easy to carry.
- Easy to install.
- Not dangerous to human life, non toxic, non cancerogeneous.
- Low cost of transportation, loading and unloading.
- Has much longer service life compared to other piping systems.
- Has high resistance against corrosion.
- Can easily be connected to any kind of pipe. Due to low cost of plumbing, it has a wide range of applications.

Water is one of the most important compounds contributing to human life: WAVIN PILSA PP-R Pipes carry this vital fluid to your households in an easy, healthy way at a low cost.

- Raw material: Polypropylene Random Copolymer,
- Superior physical characteristics at 90 °C,
- High chemical resistance,
- Definite solutions to calcification and corrosion,
- No bacteria and moss reproduction within the pipes,
- Light, easy to install and low labour cost of installation,
- Safe to use various pressurized liquids and gas,
- No reduction in diameter at the welding points,
- Longer service life, (50 years)
- Isolation is not necessary in the buildings,
- Operation Pressure: 20 Bars at 20°C and 10 Bars at 90°C,
- Compared to the metal pipes it expands more and linearly,
- Operation temperature is between 70 °C - 90 °C: it does not absorb water. It can easily be used in hot humid environment.
- Can be used in drinking water systems and has a quality certificate issued by The Ministry of Health & Hygiene-Institute.







### LIFE TABLE OF PILSATHERM PIPES

Maximum Permissible Operating Pressure for pipes made of PP-R, media water, C=1,25\*\*

Temperature (C)	Service Life (Years)	Pressure Group		
		PN10	PN20	PN25
Maximum Permissible Operating Pressure*				
20	1	18,0	36,0	45,3
	10	16,4	32,8	41,3
	50	15,5	30,9	38,9
30	1	15,3	23,6	38,5
	10	13,9	27,7	34,9
	50	13,1	26,1	32,9
40	1	12,9	25,8	32,5
	10	11,8	23,6	29,7
	50	11,0	22,0	27,7
50	1	11,0	22,0	27,7
	10	9,9	19,7	24,9
	50	9,3	18,5	23,3
60	1	9,3	18,5	23,3
	10	8,3	16,6	20,8
	50	7,7	15,3	19,2
70	1	7,8	15,6	19,6
	10	7,8	14,0	17,6
	50	5,1	10,2	12,8
80	1	6,5	13,1	16,4
	10	4,8	9,6	12,0
	50	3,8	7,6	9,6
95	1	4,6	9,2	11,6
	5	3,0	6,1	7,6

Legend: \*Pressure in bar      \*\*C+Safety factor

### PILSATHERM PIPE WELDING PRINCIPALS

Pipe Diameter (mm)	Welding Depth (mm)	Heating Time (sec.)	Processing Time (sec.)	Cooling Time (min.)	
20	14	6	4	2	Manual Welding
25	16	7	4	2	
32	18	8	6	4	
40	20	12	6	4	
50	23	18	6	4	Welding Machine
63	26	24	8	6	
75	28	30	10	8	

### JOINING PRINCIPLES OF PILSATHERM PIPES



PIPES IS CUT...

Welding machine is heated up to 260°C. When the control light is switched off, (at 260°C) welding process is started. Pipes should be cut at appropriate length perpendicular to the pipe center. Welding distance should be marked from the pipe.



IF IT IS ALUMINIUM FOILED PIPE...

A special shaver is used to take off the PP-R layer and Aluminium Foil.



PIPE AND FITTINGS ARE HEATED...

Joining surfaces of pipes and fittings should be clean. If necessary, welding parts should be cleaned with alcohol and should be dried with a dry cloth. During welding, neither the pipe nor the fittings should be moved. Duration of heating should be determined as shown in Table 3.



AND ARE JOINED NOT BE SEPARATED AGAIN...

Pipes and fittings should be heated simultaneously after process ends, they should be taken out quickly and without turning they should be joined by pressing one to another axially. Welding machines should be cleaned after every operation for the next use.





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