





Πλαστικοί Σωλήνες P.P.R.

HP TREND produces P.P.R. pipes and fittings with diameters ranging from **20mm to 110mm.** Manufactured with **PN 20** working pressure **(SDR 6)** from P.P.R. Type 3 (random copolymer of polypropylene) which is **flexible and extremely resistant to high pressures** for long.

HP TREND products are also ideal for industrial use.

In order for the production to meet the quality requirements according to the ISO 9001 standard, regular inspections under defined procedures are performed.

These defining parameters are:

- Primary material
- Individual production stages
- Production equipment
- Measuring equipment parameters

The production process is certified according to the ČSN EN ISO 15874 standard.



Benefits:

- ✓ Easy and fast welding.
- ✓ Slight change in temperature.
- ✓ Absolute tightness at the connection points Zero leaks.
- ✓ No deposits due to its smooth interior surface and the chemical inertness of the material. As a result, increased pressure losses are avoided.
- ✓ Excellent corrosion resistance, zeroing the risk of malfunction due to metallic materials.
- ✓ Antibacterial.
- ✓ Easy to move and install due to the light weight.
- ✓ Low noise levels and low-pressure loss due to friction.
- ✓ They do not corrode due to chemical resistance in most substances (acids, salts, etc.)
- ✓ In case of fire no harmful substances are released.
- ✓ Non-toxic.
- ✓ Eco-friendly, recyclable.
- ✓ Safe for health, suitable for drinking water.
- ✓ Service life 50 years.

Applications



Heating



Supply



Air Conditioning



Frost



Underfloor Heating



Industrial Sector





Pipes can be installed:

- In parting walls and partitions
- Between tiles and roof structures
- Along the wall freely either between overlaps
- In manhole and canal installations
- In outdoor piping applications and under specific conditions

HP Glass Pipes with Fiberglass

Fiberglass is a material made for circulating cold and hot water under pressure. It is an ideal choice for the following applications:

- · Drinking water systems,
- · Low-pressure central heating,
- · High temperature radiators,
- Air distribution systems.

It consists of 3 layers:

- PPR / PPR inner layer
- Polypropylene and fiberglass mixture
- GF/PPR outer layer



- ✓ Small linear difference in temperature change.
- ✓ No corrosion.
- ✓ High resistance to internal pressure.

HP TREND Plastic Pipe Series



Pipe	PN	20	4	Meters
-	4	250	01	

DIAMETER	PACKAGE
20x3,4	100
25x4,2	80
32x5,4	40
40x6,7	32
50x8,3	20
63x10,5	12
75x12,5	8
90x15,0	8
110x18,3	4



Pipe Glass PN 20 4 Meters 42502

DIAMETER	PACKAGE
20x3,4	100
25x4,2	80
32x5,4	40
40x6,7	32
50x8,3	20
63x10,5	12



- PPR/PPR
- Polypropylene with Fiberglass
- GF/PPR



HP-STABI GLASS PPRIPPR-GFIPPR Ø 20x6,7 S 2,5 PN20 2/10.

HP-STABI GLASS PPRIPPR-GFIPPR Ø 20x5,4 \$ 2,5 PN20

Pipe with Aluminum PN 20 4 Meters 42503

DIAMETER	PACKAGE
20x2,8	80
25x3,5	40
32x4,4	20
40x5,5	20
50x6,9	16
63x8.6	8

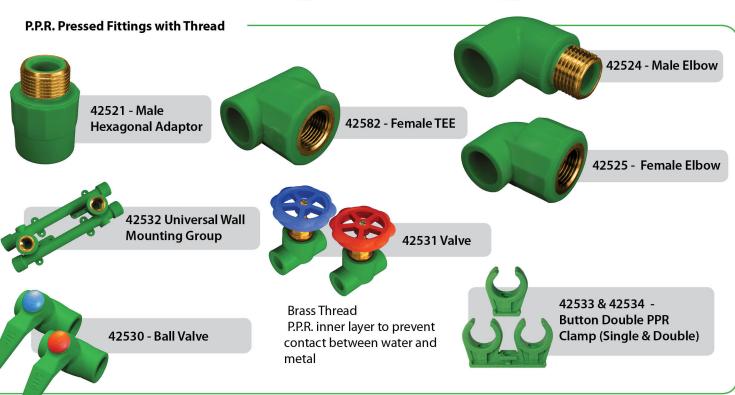


Available in 200m coils of Φ 20.

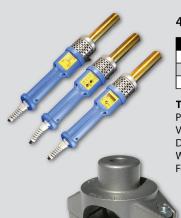


Full Range of P.P.R. Fittings





P.P.R. Insertion Tools - Full Range



42536 - FUSIO Welding Machine

Model	Temperature °C
2000	195, 220, 260
2001	260
2002	200 - 260

Technical Characteristics:

Performance: 800W Voltage: 220V Diameter og thorn: 32mm Weight: 1,4 kg

For Pipes Ø: 16, 20, 25, 32, 40, 50, 63, 75

42537 - Welding Adapter



42538 - ROTENBERGER Scissors

Welding Instructions

Tools

- FUSIO Welding machine and HP TREND Welding Adaptor
- Contact Thermometer
- ROTENBERGER Scissors
- Knife
- Ruler
- Sharpener and welding adapter for over 50mm
- Oil of turpentine and absorbing material



Preheat the welding adapter of the pipes to be welded. Before welding remember to clean the fittings internally and the pipes externally. See Table 03 for preheat times.

Tool Preparation

- · Cleaning of the pipe surfaces to be welded
- Cleaning the welding adapter of any material from previous use
- The cutting scissors should be tested for proper working condition before each use
- Preheat the FUSIO welding machine to 250° C (Preheat time depends on environmental conditions)



The pipes must be cut vertically to appropriate length and then marked at the welding spot (marking also recommended for fittings). It is also suggested that the outer edges of piping to have an inclination of 30-45°, especially for piping diameters over 40mm.



Apply a uniform and gentle pressure, one piece of piping enters the other up to the marked point. Please remember to keep it stable without swivelling. *See Table 04 for welding time*.

Welding Time

Table 03: Preheat time required

Preheat Time (sec)
5
5
7
8
12
18
24
30
40
50

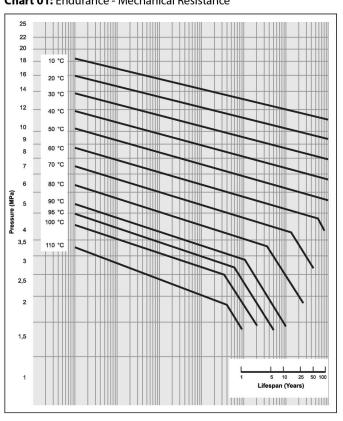
Table 04: Welding time required

Diameter Φ (mm)	Minimum Welding Time Required (sec)	Frosting Time (min)
16, 20 25	4	2
32, 40, 50	6	4
63, 75, 90	8	6
110	10	8

Endurance - Mechanical Resistance



Chart 01: Endurance - Mechanical Resistance





Endurance

Chart 01: Pipe endurance for water supply systems (according to DIN 8077/1997)

Temperature (°C)	Endurance Years	Pressure PN20 Max. Allowable Working Pressure (bar)	
	1	35,0	
	5	33,2	
10	10	32,1 31,1	
	25		
	50	30,3	
	11	30	
20	5	28,1	
20	10	27,3	
	25 50	26,5 25,7	
	1	25,7	
	5	23,9	
30	10	23,9	
30	25	22,3	
	50	21,8	
	1	21.5	
	5	20,2	1.5
40	10	19,6	Safety Factor 1,5
	25	18,8	ict.
	50	18,3	Ť
	1	18,3	et√
	5	17,0	afe
50	10	16,5	5
	25	15,9	
	50	15,4	
	1	15,4	
	5	14,3	
60	10	13,8	
	25 50	13,3	
	50	12,7	
	1 5	13,0	
70		11,9	
70	10 25	11,7 10,1	
	50	8,5	
	1	10,9	
	5	9,6	
80	25	8,0	
	50	6,4	
0.5	1	7,7	
95	5	5,0	
		Hot Water	

Chart 02: Pipe endurance for heating systems (according to DIN 8077/1997)

Temperature (°C)	Endurance Years	Pressure PN20 Max. Allowable Working Pressure (bar)	
	1	15,30	
	5	14,34	
30	10	13,86	
	25	13,38	
	50	13,08	
	11	12,90	
4.0	5	12,12	
40	10	11,76	
	25	11,28	
	50	10,98	
	1 5	10,98	10
50		10,20	2,5
50	10 25	9,90	or
	50	9,54	šct
	1	9,24 9,24	Ę,
	5	8,54	et)
60	10	8,28	Safety Factor 2,5
00	25	7,98	01
	50	7,62	
	1	7,80	
	5	7,14	
70	10	7,02	
	25	6,06	
	50	5,10	
	1	6,54	
80	5	5,76	
80	25	4,80	
	50	3,84	
95	1	4,62	
93	5	3,00	
		Hot Water	
		Underfloor Heating	
		oriaer floor fleating	

Certificates





HP TREND P.P.R. pipes and fittings are used safely and reliably for the last 35 years all over the world. The complete machinery technology, the expertise of the personnel, and the long-term scientific experiments guarantee a **lifespan of over 50 years**.

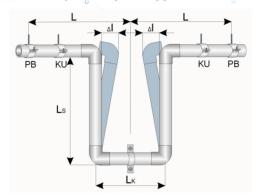
HP TREND offers its products with a 20-year warranty.

Thermal Expansion

Temperatures prevailing in the system during installation or repair, are probably different from those developed during operation. This results in the linear change (contraction or expansion) of the installation.

In case the pipe undergoes linear changes, which are inadequately compensated, i.e. the installation cannot contract and expand freely, then a lot of pulling load – stresses are accumulated, which significantly reduce the installation endurance.

Example of linear expansion absorption by omega expansion system application



PB: Embedment **KU:** Sliding Clamp **L:** Pipe length (m)

Ls: Bending leg length (mm) **DI:** Linear Deformation (mm)

Lk: Bending width

Chart 02: P.P.R. Pipe Thermal Expansion

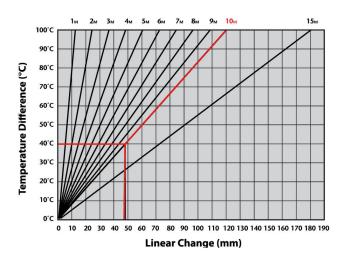


Chart 05: Fiberglass Pipe Thermal Expansion

Μήκος	Temperature Difference Δt (K)							
Σωλήνωσης (m)	10°	20°	30°	40°	50°	60°	70°	80°
0,1	0,04	0,07	0,11	0,14	0,18	0,21	0,25	0,28
0,2	0,07	0,14	0,21	0,28	0,35	0,42	0,49	0,56
0,3	0,11	0,21	0,32	0,42	0,53	0,63	0,74	0,84
0,4	0,14	0,28	0,42	0,56	0,70	0,84	0,98	1,12
0,5	0,18	0,35	0,53	0,70	0,88	1,05	1,23	1,40
0,6	0,21	0,42	0,63	0,84	1,05	1,26	1,47	1,68
0,7	0,25	0,49	0,74	0,98	1,23	1,47	1,72	1,96
0,8	0,28	0,56	0,84	1,12	1,40	1,68	1,96	2,24
0,9	0,32	0,63	0,95	1,26	1,58	1,89	2,21	2,52
1,0	0,35	0,70	1,05	1,40	1,75	2,10	2,45	2,80
2,0	0,70	1,40	2,10	2,80	3,50	4,20	4,90	5,60
3,0	1,05	2,10	3,20	4,20	5,25	6,30	7,35	8,40
4,0	1,40	2,80	4,20	5,60	7,00	8,40	9,80	11,20
5,0	1,75	3,50	5,25	7,00	8,75	10,50	12,25	14,00
6,0	2,10	4,20	6,30	8,40	10,50	12,60	14,70	16,80
7,0	2,45	4,90	7,35	9,80	12,25	14,70	17,15	19,60
8,0	2,80	5,60	8,40	11,20	14,00	16,80	19,60	22,40
9,0	3,15	6,30	9,45	12,60	15,75	18,90	22,05	25,20
10,0	3,50	7,00	10,50	14,00	17,50	21,00	24,50	28,00

Support

For better and smoother system operation, piping support should be done according to tables below:

Table 06: P.P.R. Pipe Support

Diameter	(Clamp Distance in cm, at temperatures							
(Φ)	20°	30°	40°	50°	60°	80°			
16	90	85	85	80	80	65			
20	95	90	85	85	80	70			
25	100	100	100	95	90	85			
32	120	115	155	110	100	90			
40	130	130	125	120	115	100			
50	150	180	140	130	125	110			
63	170	160	155	150	145	125			
75	185	180	175	160	155	140			
90	200	200	185	180	175	150			
110	22	215	210	195	190	165			

Table 07: Fiberglass Pipe Support

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Diameter		Clamp Distance in cm, at temperatures						
(Φ)	20°	30°	40°	50°	60°	80°		
16	80	75	75	70	70	60		
20	90	80	80	80	70	65		
25	95	95	95	90	80	75		
32	110	105	105	100	95	80		
40	120	120	115	100	105	95		
50	135	130	125	120	115	100		
63	155	150	145	135	130	115		
75	170	165	160	150	145	125		
90	180	180	170	165	160	135		

HP TREND P.P.R. pipes are available in:



Green



Gray



White

Products are manufactured at PN 10 & PN 16 pressures and they come in diameters of 20-110mm, on request.

The company

K. TZANOS SA was established in 1982 and it is a well-established trading company specialised in the field of plumbing, heating, natural gas, and green energy, maintaining long-term partnerships with well-known European and International houses. K. TZANOS SA is operating under the umbrella of TZANOS Group of companies, while owns since 1997 ISOPIPE SA, a factory specialising in the production of insulation material ISOPIPE and TORRENT cast iron condensing boilers. In 2008, TZANOS SA created the H-IT brand aiming at manufacturing high quality-products at affordable prices, for water supply and heating systems.

All products represented by TZANOS Group of Companies are CE certified.



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