

ASIALING[®]

PPR PIPING SYSTEMS



"ASIALING" POLYPROPYLENE RANDOM COPOLYMER TYPE 3 (PPR) PIPES & FITTINGS FOR :

- HOT WATER
- COLD WATER
- DRINKING WATER
- CHILLER WATER
- CHEMICAL INSTALLATION
- ETC.

"ASIALING" PPR PIPES & FITTINGS CAN INSTALLED :

- INDOOR / OUTDOOR
- UNDER GROUND
- IN THE WALL
- IN THE CONCRETE
- ETC.

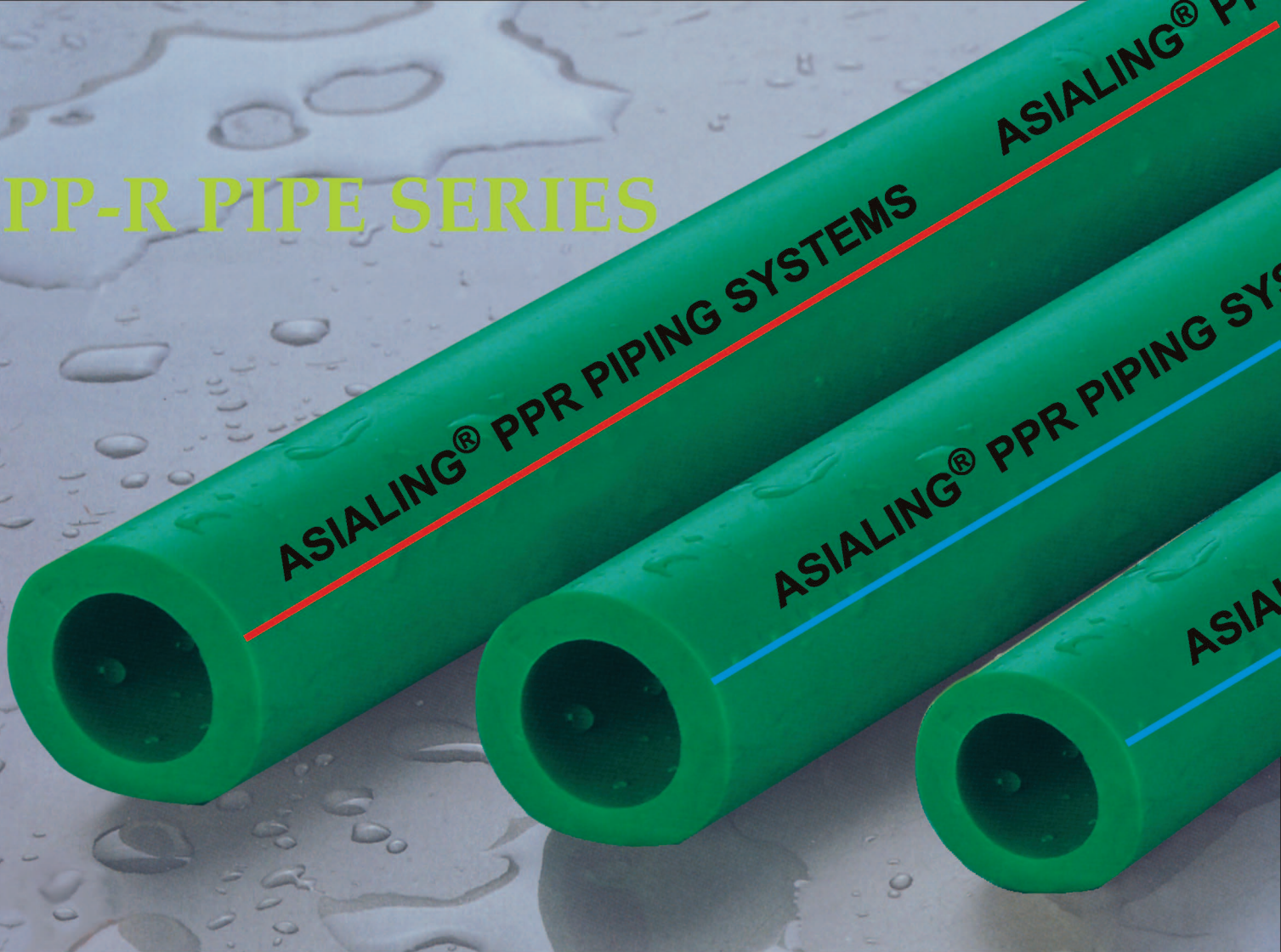


Welcome to our company **ASIALING**[®] for your Building

ASIALING PP-R pipe, also called polypropylene random copolymer (type 3) are a new generation of environment - friendly construction materials developed in the 1990. Besides plastic pipe product such as lightness, corrosion resistance, anti-deposition and long service life, PP-R pipe also enjoy some other advantages, like hygienicness, heat-resistance and longer service life. Meanwhile, their coefficient of heat conductivity is quite low and they are a good at heat preservation and energy conservation. Because of the technique of thermosol binding, they friendly construction materials. Compared with plastic compound pipe, PP-R pipe can be made into tubular products with larger calibers, with the largest reaching more than 160mm in caliber. **ASIALING** PP-R pipe and pipe fittings are widely used in such areas as delivery of drinking water, production and delivery system of purified water and drinks, transportation of chemical fluids, heating pipes, circulation system of hot water, pipes in agriculture, planting in gardens and parks and ranches, etc.

THE PRODUCT PRODUCED ACCORDING TO THE INTERNATIONAL
GERMAN STANDARD DIN 8077 - 8078 ISO 9001 : 2000

PP-R PIPE SERIES



Product range of ASIALING PPR system :

ASIALING produces pipes, fittings and accessories in following sizes and with following parameters:

- PN10 PPR pipes with diameter range \varnothing 20-160mm for cold water transportation and drinking water
- PN16 PPR pipes with diameter range \varnothing 20-160mm for cold water transportation and chiller water
- PN20 PPR pipes with diameter range \varnothing 20-160mm for hot water transportation and chemical fluids
- Estimated service life of ASIALING PPR system is over 50 years and subject to proper installation and maintaining of material's characteristics.
- Short time peak temperatures up to 100°C are possible.
- Long time usage of piping system at temperatures ranging from 70°C to 90°C reduces its service life. Permissible working pressure for PPR piping for water supply systems)

"ASIALING" Polypropylene Random Copolymer Type 3 (PPR) Pipes & Fittings For :

- Hot Water
- Cold Water
- Drinking Water
- Chiller Water
- Chemical Installation
- Etc.

"Asialing" PPR Pipes & Fittings Can Installed :

- Indoor / Outdoor
- Under Ground
- In The Wall
- In The Concrete
- Etc.

THE PRODUCT PRODUCED ACCORDING TO THE INTERNATIONAL
GERMAN STANDARD DIN 8077 - 8078 ISO 9001 : 2000

"ASIALING" PPR PIPES & FITTINGS BEST USED AT :

- Hotel
- Apartment
- Condominium
- Shopping Center
- Hospital
- School / University
- Factory / Industry
- Airport
- Warehouse
- Etc

"ASIALING" PPR PIPES & FITTINGS BEST BENEFIT :

- No Corrosion
- Easy to Install
- High Pressure
- High Temperature
- Light
- Life time minimum 50 years (Long Life)
- Hygiene
- Easy to Joint with Any Connection
- No Material Deposit Inside the Pipes
- Low Cost

BRASS



INSERTS



“ASIALING” PPR piping installation

Main types of PPR piping installation:

- Internal installation
- Installation in ducts
- Open installation

Various basic rules and conditions - including linear thermal expansion, joint method, working conditions and necessary compensation - are to be considered during installation process.

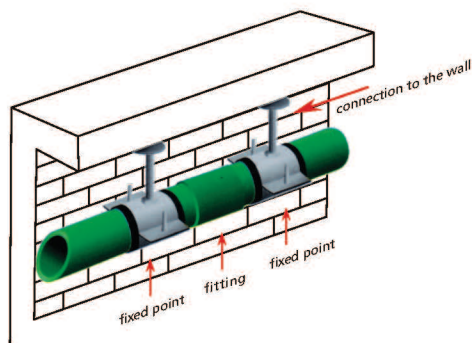
Pipeline mounting technique

Two types of pipeline supports are most frequently used: fixed points and sliding points. It is recommended to use pipe clamps with rubber protectors, which are specially designed for PPR pipes. It helps to avoid damaging of the pipe surface.

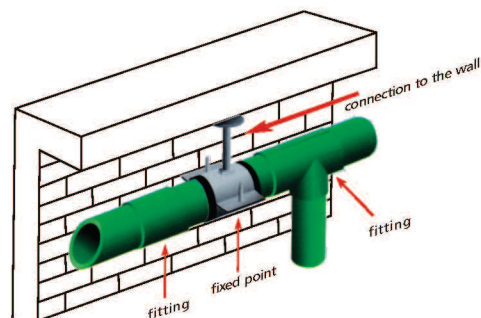
Fixed points

This type of fixing excludes the possibility of compensation; fixed supports should be installed at different sections of the pipe to avoid uncontrolled movement of the pipe. Fixed points normally must be positioned where the system changes direction to ensure expansion points are not discharged. The distance between fixed points should be measured properly and the forces of expansion should be considered. Never use pivoting clamps as fixed points.

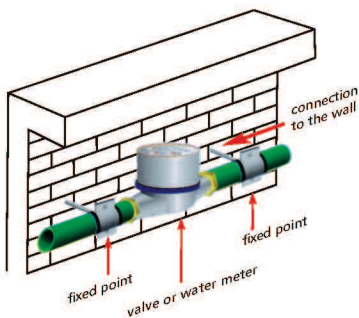
Fixing by two fixed clamps with fitting between them



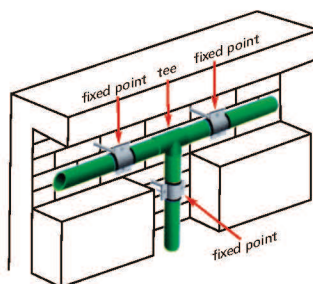
Fixing by fixed clamp between two fittings



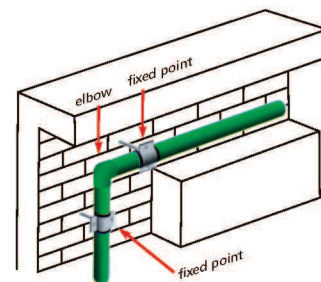
Water meter or valve fixing



Fixing at pipe branching



Fixing at pipe bending



Sliding points and other ways of fixing

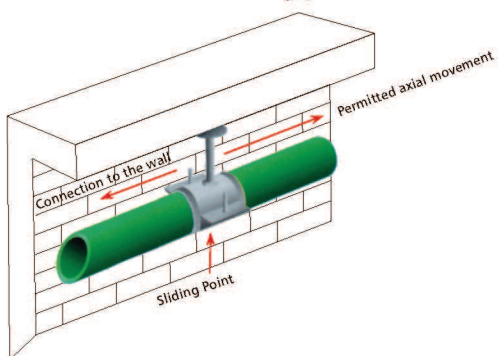
This type of mounting allows the pipe to move axially in both directions without damaging it. Sliding points should be positioned distantly from the joints (fittings) to ensure free movement of the pipe without any damaging. Such type of installation does not restrict any expansion movement.

Key to abbreviations

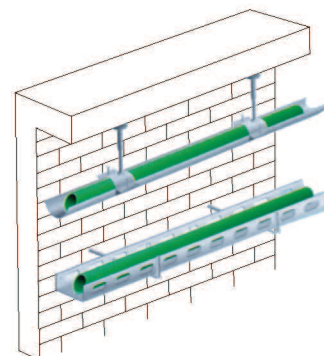
FP - Fixed Point

SP - Sliding Point

Installation with sliding points



Installation on continuous horizontal supports



Distance between supports ASIALING PPR pipes PN10 / PN16 (horizontal pipeline)

Ø D, mm	ΔT, °C	20
		Distance Between Supports, cm
20		75
25		85
32		100
40		110
50		120
63		140
75		150
90		165
110		180
125		210
160		230

Distance between supports ASIALING PPR pipes PN 20 (horizontal pipeline)

Ø D, mm	ΔT, °C	20	30	40	50	60	70
		Distance between supports, cm					
20		75	75	70	65	60	50
25		80	75	75	70	65	60
32		90	90	80	80	75	75
40		110	110	105	100	95	90
50		130	120	110	110	110	100
63		140	140	130	130	115	105
75		170	165	160	150	145	120
90		180	170	160	150	140	125
110		190	180	170	170	165	140

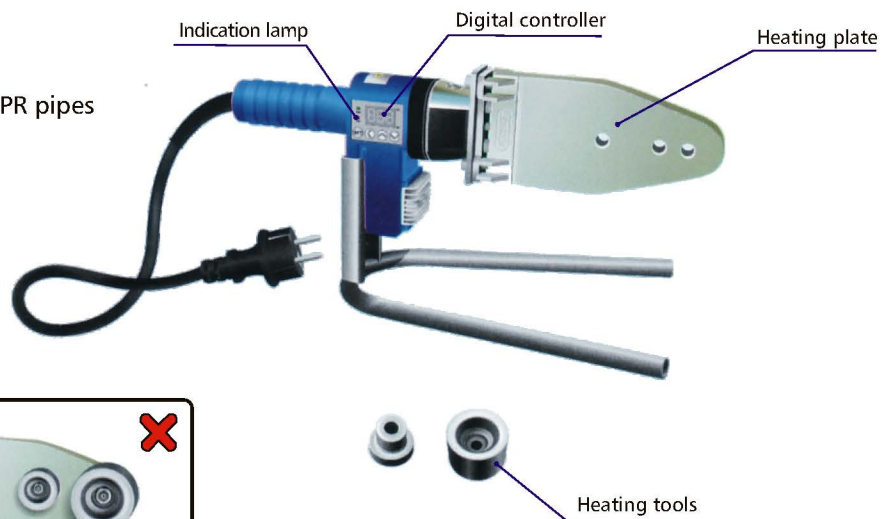
Coefficient of Loss for ASIAlING PPR fittings and valves

Fitting	Graphic symbol	Remark	Coefficient of Loss €
Equal Tee		Flow separation	1.8
		Counter current flow conjunction	4.2
		Flow conjunction	1.3
		Counter current flow separation	2.2
Reducing Tee		Flow separation	3.6
		Counter current flow conjunction	9.0
		Flow conjunction	2.6
		Counter current flow separation	5.0
90° Elbow			2.0
45° Elbow			0.6
Equal Cross		Flow separation	2.1
		Flow conjunction	3.7
Coupling			0.25
Reducing Coupling		Reduction by one size	0.4
		by 2 sizes	0.5
		by 3 sizes	0.6
		by 4 sizes	0.7
		by 5 sizes	0.8
		by 6 sizes	0.9
Treaded Tee Female			1.4-1.8
Treaded Tee Male			1.8
Treaded 90° Elbow Female			1.4
Treaded 90° Elbow Male			1.6
Treaded Adaptor Female			0.5
Treaded Adaptor Male			0.85
Reducer with Cap Nut			8.3
Joint Adaptor with Cap Nut			1.5
Cross-Over Pipe			0.8
Stop Valve		Ø20	9.5
		Ø25	8.5
		Ø32	7.6
		Ø40	5.7

The most common method for connecting PPR pipes and fittings is the socket thermo fusion welding. **ASIALING** offers hand-held socket welding devices and socket welding machines with pipe clamping for socket fusion.

Tools and equipment for welding process

1. Socket fusion device
2. Pipe cutter specially designed for cutting PPR pipes
3. Heating tools with Teflon coating
4. Absorbing paper (cloth)
5. Technical alcohol
6. Tape rule
7. Marker or special pencil
8. Short-bladed sharp knife
9. Contact temperature indicator



Preparing the thermo fusion device

Heating tools have to be tightly assembled with fusion device while they are cold. Connect the plug to the 220V power supply socket and wait until the green light on the machine will indicate the reaching of the working temperature (260°C). Before welding the temperature of the device has to be examined with contact temperature indicator. Never use water to cool the fusion device.

Preparations before welding

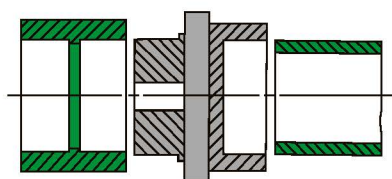
Heating tools have to be wiped with a clean cloth; this operation must be repeated after each welding. Check the surface of the heating tools. Cut the pipe at right angle; if necessary remove swarf from inside. Thoroughly clean the end of the pipe and the socket of the fitting with alcohol and absorbent cloth. Mark the welding depth of the socket at the end of the pipe. (Welding time and welding depth at air temperature 20°C)

Welding process

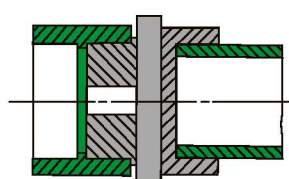
Push the pipe and the fitting simultaneously into the heating tools of the corresponding size in accordance with working conditions stated. Welding time and welding depth at air temperature 20°C After the heating, pull out the pipe and the fitting, and joint them immediately. Push the pipe without any rotation until it reaches the marked welding depth. During the jointing time the welded pipe and fitting have to remain fixed. The outer fusion seam must be inspected. After the joint is completely cooled, the connection is ready for use.

Notice: The outer edges of the pipe ends for pipes with diameter Ø40mm and over should be beveled at the angle of 30-45°. For big diameter pipes it is necessary to scrape off the top layer of oxides (about 0.1mm), which can influence the welding quality. Check the pipe ovalisation, deformed and defective components should be sorted out.

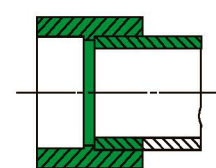
Schematic drawing of the fusion process



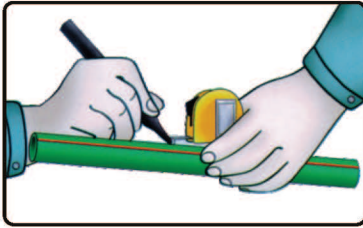
Preparation of the fusion



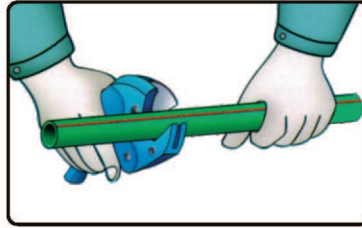
Alignment and preheating



Joining and cooling



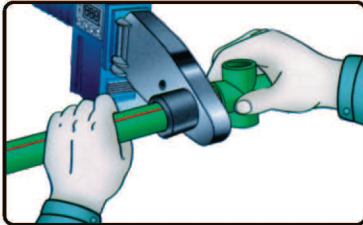
1. Measure required length to be cut



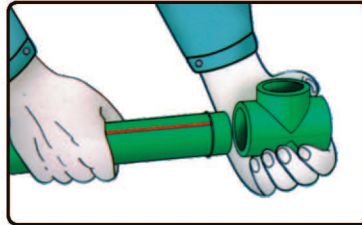
2. Cut the pipe



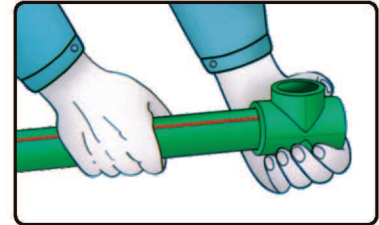
3. Heat the welder to 260°C



4. Insert pipe and fitting into the heating tools, reference to Welding time and welding depth at air temperature 20°C is required.

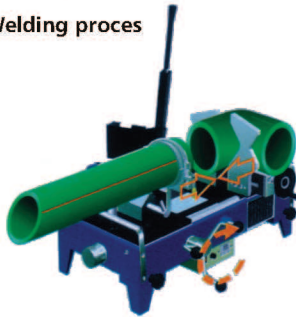


5. Quickly insert heated pipe into the fitting.



6. Assembly and cooling time should be strictly considered during the welding process. Slight alignment is allowed only during specified assembly time.

Welding proces



1. Fix the fitting in the clamp.

Ensure that the welding surface of the fitting is flat against the clamp; tighten it with the fixing crank handle. Put the pipe in the pipe clamp. Do not fix the clamp tightly. Keep pressing the spacing button and push sliding blocks together with the use of the hand wheel until it stops. Now pipe is adjusted to the welding depth, release the spacing button and fix the pipe clamp so that the pipe cannot be moved any longer.

2. The sliding blocks have to be moved apart and the welding plate has to be pulled down.

Check out if the welding device is ready to use, when the green light is on the welding temperature has been reached (ensure that heating tools temperature is 260°C). Move the sliding blocks together until they are stopped by the lock. Check recommended welding time and welding depth air temperature 20°C. When the heating time has expired, move the sliding block apart and quickly remove the heating plate.



3. Push the sliding block together quickly to finally weld the pipe and the fitting. Never take the welded joint out of the support or turn back the hand crank before the cooling time has run out. Check recommended cooling time Welding time and welding depth at air temperature 20 °C. Once the cooling time has run out the welded joint is ready to use.


Welding time and welding depth at air temperature 20°C


Diameter, mm	Melting depth, mm	Heating time, sec	Welding time, sec	Cooling time, min
20	14	5	4	3
25	15.5	7	4	3
32	17.5	8	4	4
40	20	12	6	4
50	23	18	6	5
63	26	24	6	6
75	28.5	30	8	8
90	33	40	8	8
110	39	50	10	10
125	41	58	11	10.
140	43	68	13	10
160	46	80	15	15

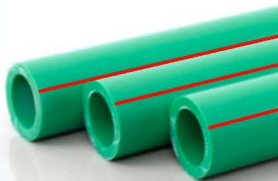
Permissible working pressure for PPR piping for water supply systems

Temperature	Operation period	PPR pipe SDR11, PN10	PPR pipe SDR7.4, PN16	PPR pipe SDR6, PN20
Safety factor 1.5				
Permissible working pressure in bar				
10°C	1	17.6	27.8	35.0
	5	16.6	26.4	33.2
	10	16.1	25.5	32.1
	25	15.6	24.7	31.1
	50	15.2	24.0	30.3
20°C	1	15.0	23.8	30.0
	5	14.1	22.3	28.1
	10	13.7	21.7	27.3
	25	13.3	21.1	26.5
	50	12.9	20.4	25.7
30°C	1	12.8	20.2	25.5
	5	12.0	19.0	23.9
	10	11.6	18.3	23.1
	25	11.2	17.7	22.3
	50	10.9	17.3	21.8
40°C	1	10.8	17.1	21.5
	5	10.1	16.0	20.2
	10	9.8	15.6	19.6
	25	9.4	15.0	18.8
	50	9.2	14.5	18.3
50°C	1	9.2	14.5	18.3
	5	8.5	13.5	17.0
	10	8.2	13.1	16.5
	25	8.0	12.6	15.9
	50	7.7	12.2	15.4
60°C	1	7.7	12.2	15.4
	5	7.2	11.4	14.3
	10	6.9	11.0	13.8
	25	6.7	10.5	13.3
	50	6.4	10.1	12.7
70°C	1	6.5	10.3	13.0
	5	6.0	9.5	11.9
	10	5.9	9.3	11.7
	25	5.1	8.0	10.1
	50	4.3	6.7	8.5
80°C	1	5.5	8.6	10.9
	5	4.8	7.6	9.6
	10	4.0	6.3	8.0
	25	3.2	5.1	6.4
90°C	1	3.9	6.1	7.7
	5	2.5	4.0	5.0

DIMENSION OF PIPE

	PPR PIPES	Outside Diameter (OD)	Thickness (mm)	PACK. (M/PACK)
	PN 10	20mm	2.0	240
		25mm	2.3	160
		32mm	3.0	96
		40mm	3.7	64
		50mm	4.6	40
		63mm	5.8	24
		75mm	6.9	16
		90mm	8.2	12
		110mm	10	8
160mm		14.6	4	

	PPR PIPES	Outside Diameter (OD)	Thickness (mm)	PACK. (M/PACK)
	PN 16	20mm	2.8	240
		25mm	3.5	160
		32mm	4.4	96
		40mm	5.5	64
		50mm	6.9	40
		63mm	8.7	24
		75mm	10.3	16
		90mm	12.3	12
		110mm	15.1	8
160mm		21.9	4	

	PPR PIPES	Outside Diameter (OD)	Thickness (mm)	PACK. (M/PACK)
	PN 20	20mm	3.4	240
		25mm	4.2	160
		32mm	5.4	96
		40mm	6.7	64
		50mm	8.3	40
		63mm	10.5	24
		75mm	12.5	16
		90mm	15	12
		110mm	18.3	8

FITTINGS SERIES


A 2001	SOCKET	SIZE
		S 20mm
		S 25mm
		S 32mm
		S 40mm
		S 50mm
		S 63mm
		S 75mm
		S 90mm
		S 110mm
		S 125mm
	S 160mm	

A 2003	90° ELBOW	SIZE
		L 20mm-90
		L 25mm-90
		L 32mm-90
		L 40mm-90
		L 50mm-90
		L 63mm-90
		L 75mm-90
		L 90mm-90
		L 110mm-90
		L 125mm-90
	L 160mm-90	

A 2005	45° ELBOW	SIZE
		L 20mm-45
		L 25mm-45
		L 32mm-45
		L 40mm-45
		L 50mm-45
		L 63mm-45
		L 75mm-45
		L 90mm-45
		L 110mm-45
		L 160mm-45

A 2004	REDUCING ELBOW	SIZE
		RE 25mm-20
		RE 32mm-25
		RE 32mm-25

A 2007	TEE	SIZE
		T 20mm
		T 25mm
		T 32mm
		T 40mm
		T 50mm
		T 63mm
		T 75mm
		T 90mm
		T 110mm
		T 125mm
	T 160mm	

A 2010	CROSS	SIZE
		C 20mm
		C 25mm
		C 32mm
		C 40mm
		C 50mm
		C 63mm

FITTINGS SERIES



REDUCING TEE



REDUCING SOCKET

A 2008 SIZE
RT 25-20 mm
RT 32-20 mm
RT 32-25 mm
RT 40-20 mm
RT 40-25 mm
RT 40-32 mm
RT 50-20 mm
RT 50-25 mm
RT 50-32 mm
RT 50-40 mm
RT 63-20 mm
RT 63-25 mm
RT 63-32 mm
RT 63-40 mm
RT 63-50 mm

A 2008 SIZE
RT 75-20 mm
RT 75-25 mm
RT 75-32 mm
RT 75-40 mm
RT 75-50 mm
RT 75-63 mm
RT 90-32 mm
RT 90-40 mm
RT 90-50 mm
RT 90-63 mm
RT 90-75 mm
RT 110-63 mm
RT 110-75 mm
RT 110-90 mm
RT 160-110 mm

A 2002 SIZE
RS 25-20 mm
RS 32-20 mm
RS 32-25 mm
RS 40-20 mm
RS 40-25 mm
RS 40-32 mm
RS 50-20 mm
RS 50-25 mm
RS 50-32 mm
RS 50-40 mm
RS 63-20 mm
RS 63-25 mm
RS 63-32 mm
RS 63-40 mm
RS 63-50 mm

A 2002 SIZE
RS 75-32 mm
RS 75-40 mm
RS 75-50 mm
RS 75-63 mm
RS 90-40 mm
RS 90-50 mm
RS 90-63 mm
RS 90-75 mm
RS 110-40 mm
RS 110-50 mm
RS 110-63 mm
RS 110-75 mm
RS 110-90 mm
RS 160-110 mm


A 2031	STUB END	SIZE
		SE 40 mm
		SE 50 mm
		SE 63 mm
		SE 75 mm
		SE 90 mm
		SE 110 mm
		SE 160 mm

A 3017	END CAP	SIZE
		EC 20 mm
		EC 25 mm
		EC 32 mm
		EC 40 mm
		EC 50 mm
		EC 63 mm
		EC 75 mm
		EC 90 mm
	EC 110 mm	
	EC 160 mm	

FITTINGS SERIES


A 5006	MALE CAP	SIZE
		MC 20 mm
		MC 25 mm

A 2011	BRIDGE FITTING	SIZE
		BF 20 mm
		BF 25 mm
		BF 32 mm


A 2014	FEMALE SOCKET	SIZE
		FS 20 mm-1/2F
		FS 25 mm-3/4F
		FS 32 mm-1F
		FS 40 mm-1 1/4F
		FS 50 mm-1 1/2F
		FS 63 mm-2F
		FS 75 mm-2 1/2F
		FS 90 mm-3F

A 2013	MALE SOCKET	SIZE
		MS 20 mm-1/2F
		MS 25 mm-3/4F
		MS 32 mm-1F
		MS 40 mm-1 1/4F
		MS 50 mm-1 1/2F
		MS 63 mm-2F
		MS 75 mm-2 1/2F
		MS 90 mm-3F

A 2018	ELBOW WITH SEAT	SIZE
		ES 20 mm-1/2F
		ES 20 mm-3/4F
		ES 25 mm-1/2F
		ES 25 mm-3/4F
		ES 32 mm-1F

LL 2016	FEMALE ELBOW	SIZE
		FE 20 mm-1/2F
		FE 25 mm-1/2F
		FE 25 mm-3/4F
		FE 32 mm-1F

FITTINGS SERIES

A 2015	MALE ELBOW	SIZE
		ME 20 mm-1/2F
		ME 25 mm-1/2F
		ME 25 mm-3/4F
		ME 32 mm-1F

A 2020	FEMALE TEE	SIZE
		FT 20 mm-1/2F
		FT 20 mm-3/4F
		FT 25 mm-1/2F
		FT 25 mm-3/4F
		FT 32 mm-1/2F
		FT 32 mm-3/4F
		FT 32 mm-1F
		FT 40 mm-1 1/4F
		FT 50 mm-1 1/2F
	FT 63 mm-2F	

A 3021	UNION SOCKET	SIZE
		US 20 mm-1/2F
		US 20 mm-3/4F
		US 25 mm-1/2F
		US 25 mm-3/4F
		US 25 mm-1F
		US 32 mm-1F


A 2019	MALE TEE	SIZE
		MT 20 mm-1/2F
		MT 20 mm-3/4F
		MT 25 mm-1/2F
		MT 25 mm-3/4F
		MT 32 mm-1/2F
		MT 32 mm-3/4F
		MT 32 mm-1F
		MT 40 mm-1 1/4F
		MT 50 mm-1 1/2F
	MT 63 mm-2F	

A 3020	ELBOW UNION	SIZE
		EU 20 mm-1/2F
		EU 20 mm-3/4F
		EU 25 mm-1/2F
		EU 25 mm-3/4F
		EU 25 mm-1F
		EU 32 mm-1F

A 2029	DOUBLE FEMALE ELBOW	SIZE
		DE 20 mm-1/2F
		DE 20 mm-3/4F
		DE 25 mm-1/2F

FITTINGS SERIES

A 2021	PLASTIC UNION	SIZE
		PU 20 mm
		PU 25 mm
		PU 32 mm
		PU 40 mm
		PU 50 mm
		PU 63 mm

A 2023	MALE UNION	SIZE
		MU 20 mm-1/2M
		MU 25 mm-3/4M
		MU 32 mm-1M
		MU 40 mm-1 1/4M
		MU 50 mm-1 1/2M
		MU 63 mm-2M

A 2022	DOUBLE UNION	SIZE
		DU 20 mm-1/2
		DU 25 mm-3/4
		DU 32 mm-1
		DU 40 mm-1 1/4
		DU 50 mm-1 1/2
		DU 63 mm-2

A 2024	FEMALE UNION	SIZE
		FU 20 mm-1/2F
		FU 25 mm-3/4F
		FU 32 mm-1F
		FU 40 mm-1 1/4F
		FU 50 mm-1 1/2F
		FU 63 mm-2F

VALVE SERIES

A 4013	PLASTIC BALL VALVE	SIZE
		PBV 20 mm
		PBV 25 mm
		PBV 32 mm
		PBV 40 mm
		PBV 50 mm
		PBV 63 mm

A 4009	STOP VALVE	SIZE
		SV 20 mm
		SV 25 mm
		SV 32 mm
		SV 40 mm
		SV 50 mm
		SV 63 mm

TOOLS SERIES

A 5014	SCISSORS (FOR PP-R PIPE)	SIZE
		Φ 20-32

A5011	WELDING MACHINE	SIZE
		20-63
		75-110



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