ISOLFASER-CT SYSTEM

PP-R FASER CT PIPE
+
ACCESSORIES PP-R

APPLICATION CLASS
CLASS1: Hot water 60° C.
CLASS2: Hot water 70° C.
CLASS 4: Underfloor heating / cooling and radiators at low temperature.
CLASS 5: Heating by radiators at high temperature.

DESIGN PRESSURE:
DIAMETERS 20/25: 1/10; 2/10; 4/10; 5/6
DIAMETERS 32/40/50/63/75/90/110: 1/8; 2/8; 4/8; 5/6
In accordance with Regulation RP 01.78

MAIN ADVANTAGES OF THE ISOLFASER - CT SYSTEM

The polypropylene RCT is a new generation of polypropylene based on the modification of its molecular structure, which consists of moving from a monoclinic crystalline structure (PP-R) to a hexagonal, improving its resistance to pressure and temperature according to ISO 1043- 1 (PPR-CT), resulting in more solid, reliable pipelines with greater long-term durability, working in the most demanding conditions.

Below we detail some of the most relevant advantages of the PP-R FASER CT.

• ABSENCE OF CORROSION
The pipes of PP-R FASER CT resist any type of water hardness and support chemicals with PH values between 1 and 14. This means great resistance to acid or alkaline substances within a large concentration and temperature range.

• ABSENCE OF INCRUSTATIONS
The internal walls of the tubes, perfectly smooth, prevent the formation of incrustations.

• LOW THERMAL DISPERSION
The PP-R FASER CT like all plastic materials is a bad conductor of heat, and therefore it means little dispersion of heat with the consequent energy saving.

• ICE RESISTANCE
Given the elasticity of the PP-R FASER CT, in case of freezing the tube increases its section, assuming the volume increase of the frozen liquid inside it.

•IDEAL IN SEISMIC HAZARD ZONES
There is agreement among international experts that plastic materials are not rigid materials inside structures.

• RESISTANCE TO ELECTROLYSIS
Polypropylene, like most plastics, is a poor electrical conductor and as a consequence, no perforations will occur in the tubes and fittings due to electrolysis.

• LOWER PRESSURE DROPS
The ISOLTUBEX tubes, thanks to their extremely smooth surface and free of incrustations, experience a lower loss of load.

• LESS NOISE FACILITIES
The elasticity and sound absorption of polypropylene prevent the propagation of noise and vibrations due to the water flow and water hammer.

• DURATION IN TIME

More than 50 years depending on the temperature and pressure.

• ABRASION RESISTANCE
The good resistance to abrasion of the ISOLTUBEX tube allows high speeds of water flow without suffering erosion problems.

• REDUCED INSTALLATION TIMES
One of the most relevant characteristics of the PP-R FASER CT is the union of all the elements by thermofusion. It is a safe method, easy to execute on site and fast against traditional products.

• ECONOMY IN THE INSTALLATION
The possibility of reducing diameters while maintaining the flow allows the realization of more economical installations by reducing the diameter of the pipeline, in addition to the pieces, complements, insulators, etc.

• PIPING PP-R FASER CT WITH UV PROTECTION
We manufacture PPR Faser CT pipe in black with UV protection for outdoor installations.

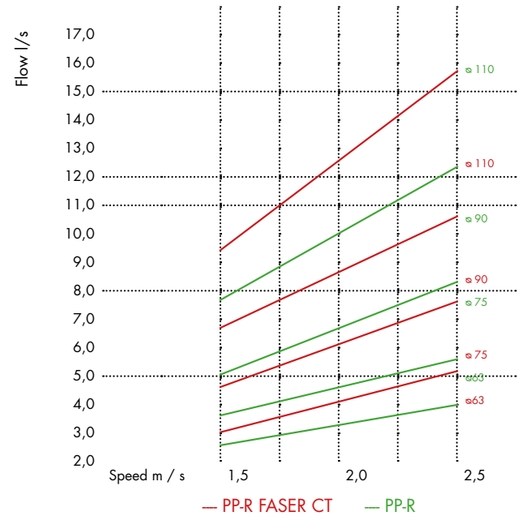
• GREATER RESISTANCE TO THE Tª
Thanks to the manufacturing process of the system, by multilayer extrusion, the fibers are incorporated longitudinally and transversely, forming a net in compact mesh that achieves a considerable increase in the resistance of the pipe as the working temperature increases. The PP-R FASER CT offers 60% more long-term strength compared to the standard PP-R.

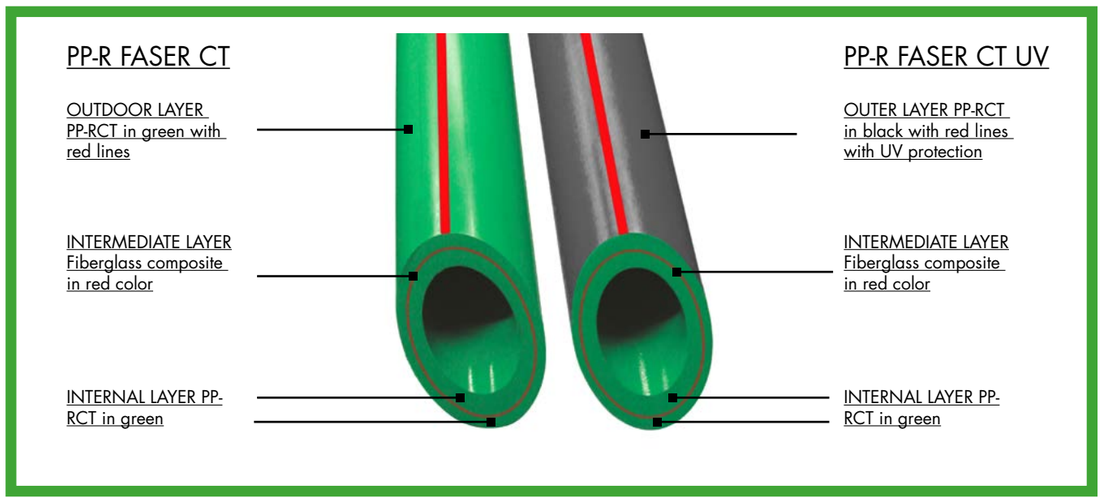
Pressure PP-R FASER CT

		PP-R FASER CT series 4	PP-R FASER CT series 3,2
T. (°C)	Durability. (years)	bar	bar
20°C	50	23,1	24,5
60°C	50	12,2	12,1
70°C	50	10,2	8,1
80°C	25	8,6	6,2
90°C	5	7,4	6

• GREATER FLOW
The system in the new series 4, of thinner wall, allows the reduction of diameters in the installation, in comparison with the traditional PP-R, maintaining the same flow without a relevant increase in speed. In addition, the system has a lower linear expansion than other systems (0.040 mm / m).

Flow comparison between PP-R FASER CT and PP-R





FASER TUBES

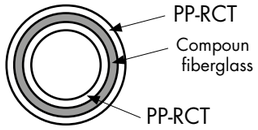
The FASER tubes of ISOLFASER-CT are the result of a long experience in the manufacture of PP-RCT tubes that has given rise to one of the most modern and technologically advanced tubes in the current market.

The reasons that led the manufacturers to create the FASER - type tubes was to look for a tube that would significantly reduce dilatations and simultaneously simplify the welding process, thus reducing the set - up times with consequent cost savings.

ADVANTAGES OF THE FASER TUBE

In general it is considered that the FAZER tubes dilate between 7 and 8 times less than a conventional PP-RCT tube.

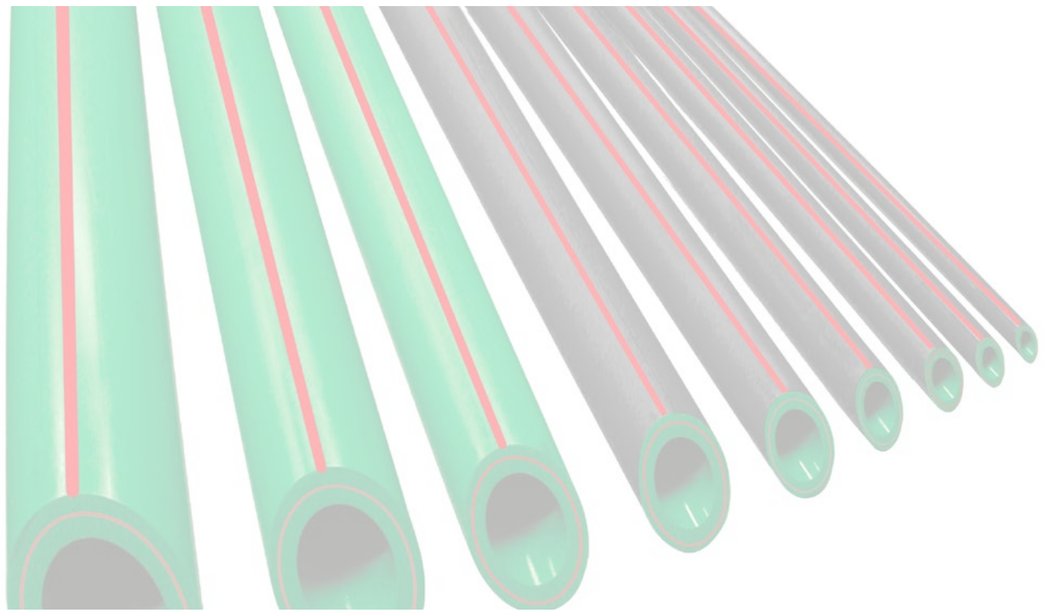
The expansion control of the FASER tube is produced from the center of its own mass, through the supply of molten glass fiber microparticles in the PP-RCT material itself. In this way, if the dilation is controlled from the same center of the tube wall, with the additional advantage that in this way undesired tensions are avoided.



The intermediate layer with the glass fiber composite is fused with the PP-RCT material of the tube wall.

In the case of the FASER tube, the tube and the corresponding accessory are introduced directly into the poly - fuser as if it were a conventional PP-RCT tube.

Other advantages of the FASER tube are an increase in the effective flow rate of the tube due to the decrease in the thickness of the tube wall. Reduction of the weight of the tubes, facilitating their handling. Finally, a low coefficient of expansion, allows to extend the distance between clamps, decreasing execution time and costs.



TIPS FOR USE

- The tubes and fittings must be installed following the instructions, warnings and recommendations. The use of materials, obviously defective, as well as not following the assembly instructions, invalidates the guarantee.
- The conditions of use, as well as temperature and pressure should be within the technical limits of the material. The union of the tube and the union with a heat source, with a limit of temperature and pressure, not compatible with the characteristics of the material, even if accidental, invalidates the guarantee.
- The pipes and accessories must be exclusively of the ISOLTUBEX brand.
- Blows and excessive loads should be avoided in working conditions equal to or less than 0 °. Also avoid the installation of tubes with obvious incisions or breaks.
- Before covering races, always check the installation with pressurized water.

RECOMMENDATIONS

- Cut the tube perpendicularly with a suitable scissors and make a good cleaning before proceeding to the polifusión.
- Check that the polifusor reaches the correct working temperature.
- Insert simultaneously and with a light pressure, the tube and the accessory in the matrix of the correct diameter.
- At the time of the fusion the welder must be kept perpendicular to the pipe and the fitting in order to avoid partial polyfusions.
- After the polyfusion it is advisable not to turn the tubes or fittings more than 20 °.
- Absolutely avoid fitting to the female terminals conical plugs of cast iron or uncalibrated cylindrical threads. We recommend using TPFE for the tightness of the threaded joints. If hemp is used it should be done carefully and only in the indispensable amount.
- Use levels to leave the water points aligned at the exact distance.
- During the welding operations of diameters greater than Ø 32 it is advisable to avoid air currents, to prevent stresses in the welds. However, if the temperature is very low, it is advisable to use electric hoses.

WORK TABLE

External diameter tubeØ	Warm up time Seconds	Assembly time Seconds	Cooling time Minutes	Tube insertion m / m
20	5	4	2	14
25	7	4	3	16,5
32	8	6	4	18
40	12	6	4	20
50	18	6	4	24
63	25	8	6	26
75	30	8	8	28
90	40	10	8	30
110	50	10	8	32,5

It is essential to comply with the heating time as indicated in the table. At a temperature below +5 ° C, the heating time must be increased by 50%

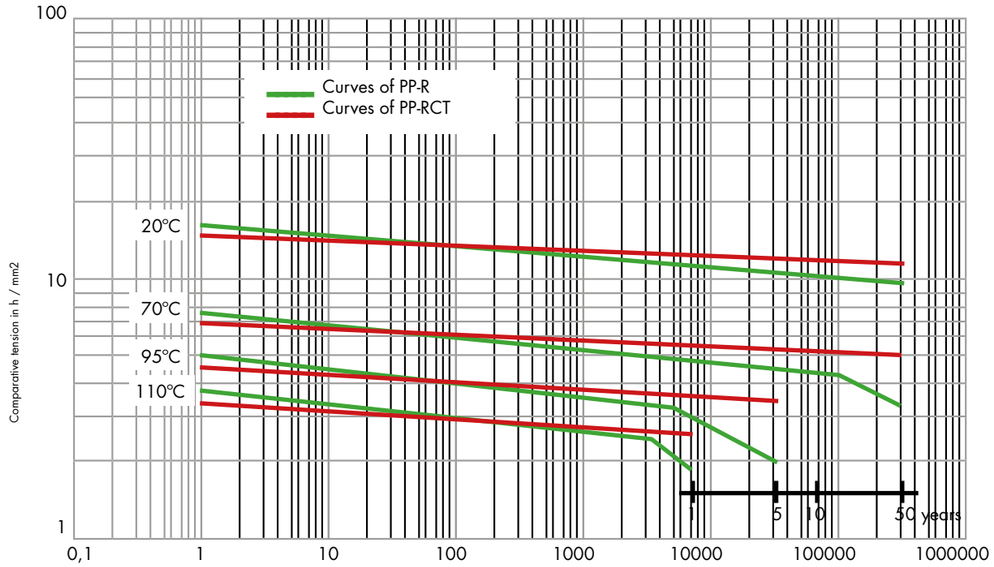
REGRESSION CURVES

The regression curve predicts the behavior of the tube against pressure as a function of temperature. This curve determines the useful life of a tube as a function of the tangential tension to its inner wall resulting from this pressure. The tangential tension is linked to the internal pressure by the following formula:

$$\sigma = p \frac{d - e}{2e}$$

where:
σ = comparative tension in h / mm2
p = constant pressure in bar
d = outer diameter of the tube
e =thickness of the tube wall

Comparison of regression curves between PPR-CT and PP-R



APPLICATION FIELDS PP-R FASER CT

Polypropylene has been designed for the transport of hot and cold water under pressure and given its physical and chemical characteristics it is suitable for use in the following fields:

- **PLUMBING INSTALLATIONS.**
- **HEATING AND AIR CONDITIONING INSTALLATIONS.**
- **COMPRESSED AIR INSTALLATIONS.**
- **TRANSPORT OF FOOD LIQUIDS.**
- **INDUSTRIAL APPLICATIONS.**

THERMAL DILATION

For the installation of pipes of PP-R FASER CT to the exterior it is necessary to take into account that a longitudinal expansion will take place that will be in function of the temperature of the liquids transported and of the coefficient of thermal expansion of the PP-R FASER CT.

The longitudinal dilation can be calculated in a simplified way according to the following formula:

$$DL = \varepsilon t \times \Delta t \times Lt$$

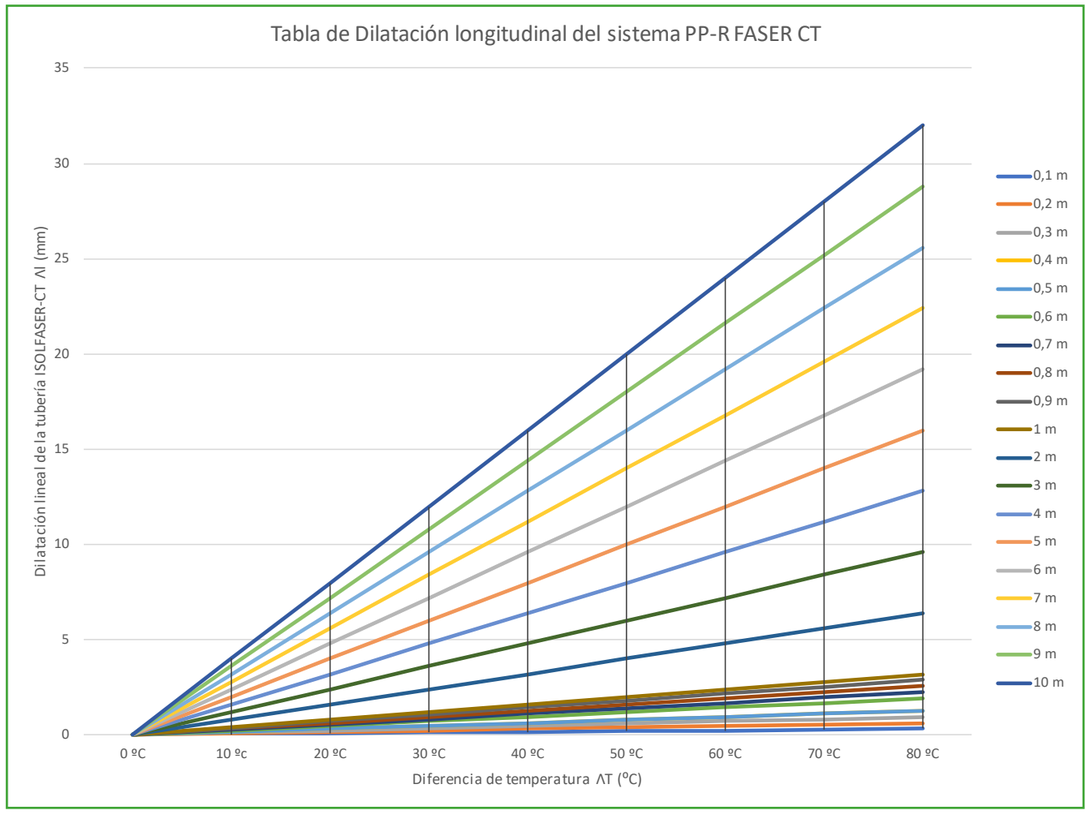
DL = longitudinal expansion
εt = coefficient of thermal expansion
Δt = temperature increase in °C
Lt = tube length in mm

The linear coefficient of thermal expansion εt for PP-RCT FASER tubes is:

$\varepsilon t = 0{,}40 \times 10^{-4}$ 0,040 mm/mt °C

Longitudinal dilatation table of the PPR FASER CT system

λ = 0,04 mm/m°C								
Length of the pipe (m)	Temperature difference ΛT (°C)							
	10 ºc	20 ºC	30 ºC	40 ºC	50 ºC	60 ºC	70 ºC	80 ºC
	Linear dilation of the pipeISOLFASER-CT Λl (mm)							
0,1 m	0,04	0,08	0,12	0,16	0,20	0,24	0,28	0,32
0,2 m	0,08	0,16	0,24	0,32	0,40	0,48	0,56	0,64
0,3 m	0,12	0,24	0,36	0,48	0,60	0,72	0,84	0,96
0,4 m	0,16	0,32	0,48	0,64	0,80	0,96	1,12	1,28
0,5 m	0,20	0,40	0,60	0,80	1,00	1,20	1,40	1,60
0,6 m	0,24	0,48	0,72	0,96	1,20	1,44	1,68	1,92
0,7 m	0,28	0,56	0,84	1,12	1,40	1,68	1,96	2,24
0,8 m	0,32	0,64	0,96	1,28	1,60	1,92	2,24	2,56
0,9 m	0,36	0,72	1,08	1,44	1,80	2,16	2,52	2,88
1 m	0,40	0,80	1,20	1,60	2,00	2,40	2,80	3,20
2 m	0,80	1,60	2,40	3,20	4,00	4,80	5,60	6,40
3 m	1,20	2,40	3,60	4,80	6,00	7,20	8,40	9,60
4 m	1,60	3,20	4,80	6,40	8,00	9,60	11,20	12,80
5 m	2,00	4,00	6,00	8,00	10,00	12,00	14,00	16,00
6 m	2,40	4,80	7,20	9,60	12,00	14,40	16,80	19,20
7 m	2,80	5,60	8,40	11,20	14,00	16,80	19,60	22,40
8 m	3,20	6,40	9,60	12,80	16,00	19,20	22,40	25,60
9 m	3,60	7,20	10,80	14,40	18,00	21,60	25,20	28,80
10 m	4,00	8,00	12,00	16,00	20,00	24,00	28,00	32,00

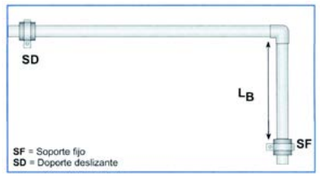


FLEX ARMS

In most cases, changes of direction can be taken advantage of in the path the pipe follows to absorb linear expansion. The length of the bending arm is obtained based on the following calculation example. The length of the bending arm is calculated according to the following formula:

$$L_B = C \times \sqrt{(d \times \Delta l)}$$

L_B = bending arm length
C = specific constant of the pipe
d = outside diameter of the pipe
Δl = linear dilation

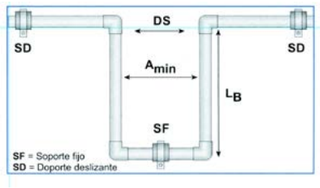


LILIES OF DILATION

If it is not possible to compensate for the linear expansion by varying the direction, it will be necessary to install an expansion strip. To do this, it is necessary, in addition to the necessary pipe, 4 elbow 90°:
In addition to the length of the bending arm LB, when placing an expansion wire, its width Amin must also be taken into account.

$$A_{min} = 2 \times \Delta l + DS$$

A_{min} = Expansion lira width
Δl = Linear dilatation
DS = Safety distance



CLAMPS FOR UNDEMBLED FACILITIES

In external horizontal installations, if it is not possible to install gutters according to the temperatures of the transported fluids, it is necessary to place clamps to support the pipes.

Distance ratio between clamps (in cm)

Outside diameter (mm)	Without half rods	
	Cold T=20°C	Hot T=70°C
16	75	50
20	80	50
25	85	70
32	100	80
40	110	90
50	125	100
63	140	120
75	155	130
90	165	145
110	175	145

We also recommend placing rigid clamps in the following cases:

- To absorb hydraulic thrusts in changes of directions (tees or elbows) and in the reductions.

- In proximity of valves, meters, etc.

COEFFICIENT OF LOSS DUE TO ACCESSORIES

Description	Symbol	Coefficient of loss
Union		0,25
Elbow 90°		2,0
Elbow thread male		2,2
Elbow 45°		0,6
Accessories in T		1,8
Accessories T reduced		3,6
Accessories in T		1,3
Accessories in T reduced		2,6
Accessories in T		4,2
Accessories in T reduced		9,0
Accessories in T		2,2
Accessories in T reduced		5,0
Accessories in T screwed		0,8
Reduction up to 2 dimensions		0,55

The table indicates the loss of load z as a function of a coefficient r = 1, for the water conduction at 10°C and for the different value of the displacement speed V (m / s)

Velocity of displacement V m / s	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5
Loss of charge z for r 1 mbar = 10.1 mm	0,1	0,2	0,5	0,8	1,3	1,8	2,5	3,2	4,1	5,0	6,1	7,2	8,5	9,8	11,3	12,8	14,5	16,2	18,1	20,0	22,1	24,2	26,5	28,8	31,3

Velocity of displacement V m / s	2,6	2,7	2,8	2,9	3,0	3,1	3,2	3,3	3,4	3,5	3,6	3,7	3,8	3,9	4,0	4,1	4,2	4,3	4,4	4,5	4,6	4,7	4,8	4,9	5,0
Loss of charge z for r 1 mbar = 10.1 mm	33,8	36,5	39,2	42,1	45	48	51	55	58	61	65	68	72	76	80	84	88	92	97	101	106	110	115	120	125

The localized charge loss z has the following formula $z = 5v2 \times \Sigma r$
And the total load loss of the impact will be the total sum of the distributed head loss r and the total localized head loss z.

THERMAL ISOLATION FOR HEATING INSTALLATIONS

The tables indicate the thickness of the insulation required for a reference insulation material 0.040 W / m°, at 10° for pipe networks in cold and hot water installations:

Hot Fluids in INSIDE of Buildings			
Outside diameter (mm)	Maximum fluid temperature (°C)		
	40 ... 60	> 60 ... 100	> 100 ... 180
D ≤ 35	25	25	30
35 < D ≤ 60	30	30	40
60 < D ≤ 90	30	30	40
90 < D ≤ 140	30	40	50
140 < D	35	40	50

Hot Fluids in EXTERIOR Buildings			
Outside diameter (mm)	Maximum fluid temperature(°C)		
	40 ... 60	> 60 ... 100	> 100 ... 180
D ≤ 35	35	35	40
35 < D ≤ 60	40	40	50
60 < D ≤ 90	40	40	50
90 < D ≤ 140	40	50	60
140 < D	45	50	60

Cold Fluids in INSIDE of Buildings			
Outside diameter (mm)	Maximum fluid temperature (°C)		
	> -10 ... 0	> 0 ... 10	> 10
D ≤ 35	30	25	20
35 < D ≤ 60	40	30	20
60 < D ≤ 90	40	30	30
90 < D ≤ 140	50	40	30
140 < D	50	40	30

Cold Fluids in EXTERIOR Buildings			
Outside diameter (mm)(mm)	Maximum fluid temperature (°C)		
	> -10 ... 0	> 0 ... 10	> 10
D ≤ 35	50	45	40
35 < D ≤ 60	60	50	40
60 < D ≤ 90	60	50	50
90 < D ≤ 140	70	60	50
140 < D	70	60	50

The data that appear in the aforementioned tables are informative, extracted directly from the Regulation of Thermal Installations (Rite).

DIMENSIONED

Diameter of the derivations of the devices according to the interior water supply installations "BASIC NORMS" 2nd edition (Spain).

Feeding point	Flow l/s	Speed m/s	Pressure bar	⌀ Tube
Sink	0,10	1,1	1	16
Bidet	0,10	1,1	1	16
Sanitary ware with deposit	,010	1,1	1	16
Bath	0,30	0,85	1	25
Shower	0,20	1,49	1	20
Sink	0,20	1,49	1	20
"Office"	0,15	1,20	1	20
Laundry	0,20	0,94	1	25
Fluxers	1,25 ÷ 2	3 (by 1,6)	1,2	32

Diameter of the derivations of the devices according to the norm DIN 1988

The content of this catalog is purely informative and aims to provide general information. In any case, the user of our products must refer to the regulations of current techniques.

ADMISSIBLE WORKING PRESSURES

In the following tables are related, working temperature, pressure and time (years).

Temperature	Years of service	Pressure (bar)	
		PP-RCT FASER S4 SDR9	PP-RCT FASER S3,2 SDR7,4
10°C	1	28,8	30,2
	5	27,9	28,2
	10	27,5	27,7
	25	27,1	26,9
	50	26,7	26,1
	100	26,3	25,2
20 °C	1	25	28,6
	5	24,2	26,8
	10	23,9	26,1
	25	23,5	25,3
	50	23,1	24,5
	100	22,8	23,7
30 °C	1	21,7	24,3
	5	20,9	22,8
	10	20,6	22
	25	20,2	21,3
	50	19,9	20,7
	100	19,7	20
40 °C	1	18,6	20,5
	5	18	19,2
	10	17,7	18,7
	25	17,3	18
	50	17,1	17,5
	100	16,8	16,8
50 °C	1	15,9	17,5
	5	15,3	16,2
	10	15,1	15,7
	25	14,7	15,2
	50	14,5	14,7
	100	14,3	14,1
60 °C	1	13,5	14,7
	5	13	13,7
	10	12,7	13,2
	25	12,4	12,6
	50	12,2	12,1
70 °C	1	11,3	12,4
	5	10,9	11,4
	10	10,7	11,1
	25	10,4	9,6
	50	10,2	8,1
80 °C	1	9,5	10,4
	5	9	9,2
	10	8,9	7,8
	25	8,6	6,2
90 °C	1	7,8	8,7
	5	7,4	6
	10	7,3	5,1

SDR = Standard Dimension Ratio (Ratio Diameter-Thickness) = DN / Wall Thickness T
SDR = 2xS ~d/s
S = Tube series according to ISO 4065

Temperature		Years of service	Pressure (bar)	
			PP-RCT FASER S4 SDR9	PP-RCT FASER S3,2 SDR7,4
Constant temperature 70°C exceeding 30 days / year of...	75 °C	5	12,9	14,27
		10	12,6	13,79
		25	12,2	11,74
		45	12	10,18
	80 °C	5	11,7	13,5
		10	11,4	12,8
		25	11,1	11,14
		45	10,9	9,79
	85 °C	5	10,7	12,42
		10	10,4	11,87
		25	10,1	10,14
		37,5	10	9,18
	90 °C	5	9,8	11,39
		10	9,5	10,94
		25	9,2	8,86
		35	9,1	8,16
Constant temperature 70°C exceeding 60 days / year of....	75 °C	5	12,3	14,11
		10	12,1	13,57
		25	11,7	11,58
		45	11,5	10,05
	80 °C	5	11,4	13,12
		10	11,2	12,54
		25	10,8	10,56
		40	10,7	9,41
	85 °C	5	10,4	12,03
		10	10,2	11,52
		25	9,9	9,22
		35	9,8	8,48
	90 °C	5	9,5	11,04
		10	9,3	9,76
		25	9,1	7,81
		30	9	7,46
Constant temperature 70°C exceeding 90 days / year of..	75 °C	5	12,2	14,02
		10	12	13,38
		25	11,6	11,33
		45	11,4	9,82
	80 °C	5	11,3	12,9
		10	11	12,35
		25	10,7	10,05
		37,5	10,6	9,09
	85 °C	5	10,3	11,81
		10	10,1	10,72
		25	9,8	5,58
		32,5	9,7	8,03
	90 °C	5	9,4	10,59
		10	9,2	8,96
		25	8,9	7,17

SDR = Standard Dimension Ratio (Ratio Diameter-Thickness) = DN / wall thickness T
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BEHAVIOR OF PPR and PP-RCT FRONT OF SOME MORE COMMON CHEMICALS (ORIENTATIONAL DATA)

Substance	Concentration (%)	Operating temperature	
		20 °C	60 °C
Acetate Ammonium	s / to all	+	+
Butyl Acetate	100	+/-	
Sodium Acetate	Sun. sat	+	+
Acetone	100	+	
Acetic acid	s/a 50	+	
Acetic acid	s/a 10	+	+
Anhydrous acid	100	+	
Benzoic acid	100	+	
Benzoic acid	s / sat cool	+	+
Boric acid	100	+	
Boric acid	s / sat cool	+	+
Citric acid	s / sat cool	+	+
Formic acid	s/a 98	+	
Formic acid	s/a 85	+	
Formic acid	s/a 50	+	
Formic acid	s/a 10	+	
Formic acid	85	+	
Phosphoric acid	50	+	
Phosphoric acid	10	+	+
Lactic acid	s/a 90	+	
Lactic acid	s/a 50	+	
Lactic acid	s/a 10	+	+
Nitric acid	68	-	
Nitric acid	50	-	
Nitric acid	25	+/-	
Nitric acid	10	+	
Sulfuric acid	98	+	
Sulfuric acid	50	+	+
Fructose	s / sat cool	+	+
Glucose	s / sat cool	+	+
Glycerin	100%	+	
Glycerin	s / to all	+	
Sodium hydroxide	100%	+	
Calcium hypochlorite	s / to all	+	
Menthol	100%	+	
Mercury	100%	+	
Ammonium nitrate	s / to all	+	+
Calcium nitrate	s / sat cool	+	+
Potassium nitrate	s / sat cool	+	+
Sodium nitrate	s / sat cool	+	+
Nitrobenzene	100%	+	
Potassium permanganate	s / sat cool	+	
Hydrogen peroxide	30%	+/-	
Aluminum Salts	s / to all	+	+

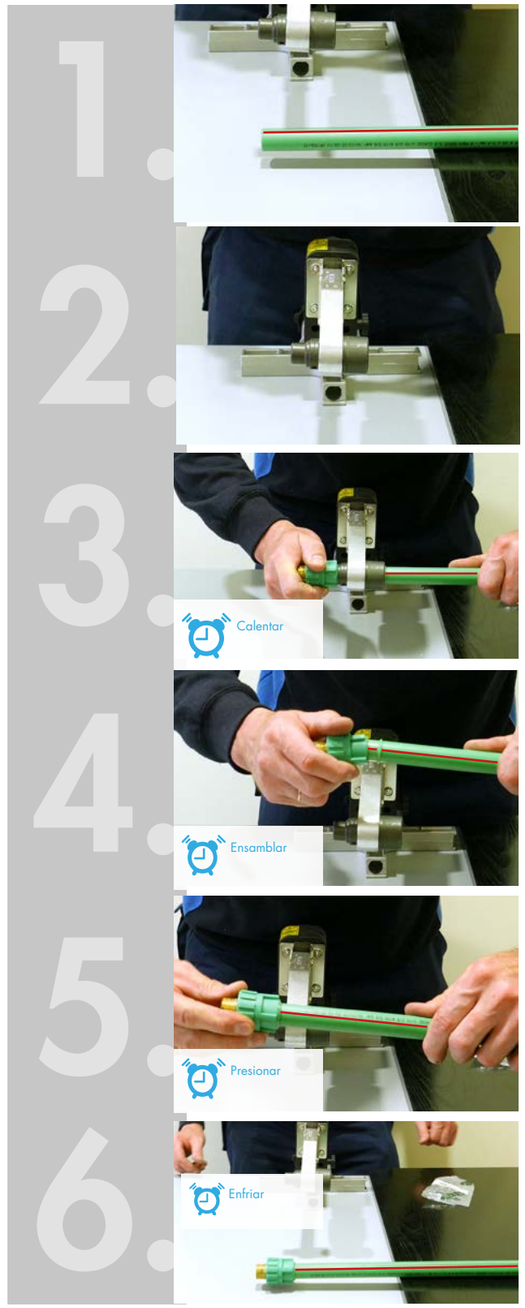
Substance	Concentration (%)	Operating temperature	
		20 °C	60 °C
Sulfuric acid	10	+/-	
Tartaric acid	s / sat cool	+	+
Water	100	+	+
Ethyl alcohol	100	+	
Ethyl alcohol	s/a 96	+	
Ethyl alcohol	s/a 50	+	
Ethyl alcohol	s/a 10	+	
Ammonium	s/a 30	+	
Ammonium	s/a 10	+	+
Aniline	100	+	
Benzaldehyde	100	+	
Benzaldehyde	s / sat cool	+	
Benzene	100	-	
Sodium bisulfite	s / sat cool	+	
Borax	s / sat cool	+	+
1,4 - Butanediol	100	+	
Carbonate Ammonium	s / to all	+	+
Calcium carbonate	s / sat cool	+	+
Carbonate Potassium	s / sat cool	+	+
Sodium carbonate	s / sat cool	+	+
Sodium carbonate	s/a 10	+	+
Chlorate Potassium	s / sat cool	+	
Chloroform	100	-	
Dichromate Potassium	s / sat cool	+	
Formaldehyde	s/a 40	+	
Formaldehyde	s/a 30	+	
Formaldehyde	s/a 10	+	
Phosphate Ammonium	s / to all	+	+
Sales of Zinc Sol.	s / sat cool	+	+
Potassium hydroxide	50	+	+
Sun. Potassium hydroxide	25	+	+
Sun. Potassium hydroxide	10	+	+
Sun. Potassium hydroxide	50	+	+
Sun. Potassium hydroxide	25	+	+
Sun. Potassium hydroxide	10	+	
Ammonium sulphate	s / to all	+	+
Sodium sulfate	s / sat cool	+	+
Urea	s / sat cool	+	+
Xylene	100	-	
Sales of Bario	s / to all	+	+
Chrome salts	s / sat cool	+	+
Sales of Mercury	s / sat cool	+	+
Nickel salts	s / sat cool	+	+

Abbreviations: s / a 0 aqueous solution: s / sat. cold = cold saturated solution; + Resistant: +/- Limited resistance; - Not resistant
In this table we will find the most known chemical products.

ASSEMBLY INSTRUCTIONS PIPES AND ACCESSORIES

Before starting the assembly check that the tubes are not broken, bent, damaged or apparently not suitable for installation. It is also necessary to check that the accessories to be used appear without any dirt residues in any of their components or present any anomaly or deterioration that prevents their correct use.

VERY IMPORTANT: THE USE OF DETERIORATED TUBES AND / OR ACCESSORIES, IN BAD CONDITION OR IN CONDITIONS OF CONSERVATION OR MAINTENANCE NOT SUITABLE FOR YOUR INSTALLATION EXCLUDES THE WARRANTY (see page of advice of use and recommendations)



All assembly processes on our YouTube channel

Cut the tube perpendicular to its length, using a tool that guarantees a clean and precise cut.

Select the appropriate matrix to the diameter of the tube, place it in the multipurpose and connect it to the network. Allow to warm up until the matrix reaches the working temperature.

Once the matrix is warm, place the accessory and the tube on both ends. Heat according to the time indicated in the work table. You must avoid excessive heating.

After the necessary heating time, quickly insert the accessory into the pipeline by pressing lightly and wait for the time indicated in the working table for cooling.

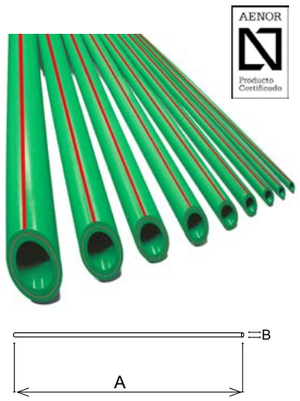
ATTENTION. Isoltubex is not responsible for problems that may arise due to the use of inadequate matrices or in poor condition.

THESE TUBES ARE MANUFACTURED REGARDING THE UNE-EN ISO 15874 STANDARD AND CERTIFIED BY AENOR ACCORDING TO THE RPO 1.7 REGULATIONS

PIPE PP-R FASER CT

PIPE PPR-CT FASER

SDR7,4 SERIES3,2 (Ø20 y Ø25)
SDR9 SERIES4 (Ø32 Ø40 Ø50 Ø63 Ø75 Ø90 Ø110)



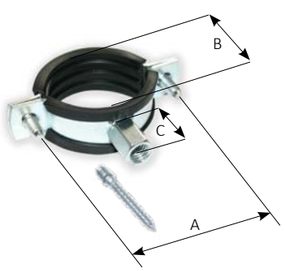
Reference	Ø Tube	Measurements Bar		Weight Bar	PACKAGE			CAGE	
		A	B		n° Bar	Meters	Weight	n° Bars	Weight
I2200F20-B4	20 x 2,8	400	2,8	0,60	40	160	24,0	1200	720,0
I2200F25-B4	25 x 3,5	400	3,5	0,90	25	100	22,5	750	675,0
I2200F32-B4	32 x 3,6	400	3,6	1,50	20	80	30,0	600	900,0
I2200F40-B4	40 x 4,5	400	4,5	2,00	15	60	30,0	315	630,0
I2200F50-B4	50 x 5,6	400	5,6	3,00	10	40	30,0	180	540,0
I2200F63-B4	63 x 7,1	400	7,1	4,80	5	20	24,0	120	576,0
I2200F75-B4	75 x 8,4	400	8,4	6,80	3	12	20,4	90	612,0
I2200F90-B4	90 x 10,1	400	10,1	9,80	2	8	19,6	56	548,8
I2200F110-B4	110 x 12,3	400	12,3	14,60	2	8	29,2	36	525,6
		cm	cm	kg	**uns.**	mts.	kg	uns.	kg

PIPE PPR FASER CT UV

SDR7,4 SERIES3,2 (Ø20 y Ø25)
SDR9 SERIES4 (Ø32 Ø40 Ø50 Ø63 Ø75 Ø90 Ø110)

Reference	Ø Tube	Measurements Bar		Weight Bar	PACKAGE			CAGE	
		A	B		n° Bars	Meters	Weight	n° Bars	Weight
I2200FUV20	20 x 2,8	400	2,8	0,60	40	160	24,0	1200	720,0
I2200FUV25	25 x 3,5	400	3,5	0,90	25	100	22,5	750	675,0
I2200FUV32	32 x 3,6	400	3,6	1,50	20	80	30,0	600	900,0
I2200FUV40	40 x 4,5	400	4,5	2,00	15	60	30,0	315	630,0
I2200FUV50	50 x 5,6	400	5,6	3,00	10	40	30,0	180	540,0
I2200FUV63	63 x 7,1	400	7,1	4,80	5	20	24,0	120	576,0
I2200FUV75	75 x 8,4	400	8,4	6,80	3	12	20,4	90	612,0
I2200FUV90	90 x 10,1	400	10,1	9,80	2	8	19,6	56	548,8
I2200FUV110	110 x 12,3	400	12,3	14,60	2	8	29,2	36	525,6
		cm	cm	kg	**uns.**	mts.	kg	uns.	kg

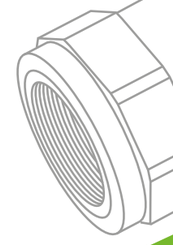
ISOPHONIC CLAMP



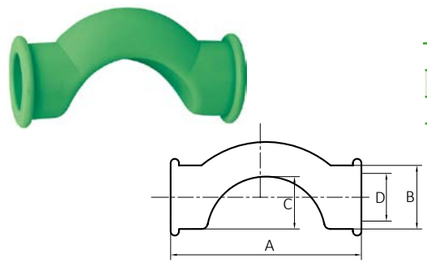
Reference	Measure	A	B	C	Weight	
AI20	20 - M8	60	18	7,5	64,00	150
AI25	25 - M8	65	25	7,5	74,00	120
AI32	32 - M8	75	30	7,5	77,00	100
AI40	40 - M8	85	35	7,7	83,00	100
AI50	50 - M8	100	45	7,5	95,00	100
AI63	63 - M10	105	55	15	105,00	50
AI75	75 - M10	125	70	15	112,00	50
AI90	90 - M10	130	85	15	132,00	50
AI110	110 - M10	160	100	15	167,00	50
	Ø	mm	mm		g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

POLYPROPYLENE ACCESSORIES (PP-R)

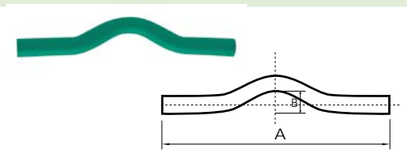


CROSS PIPE



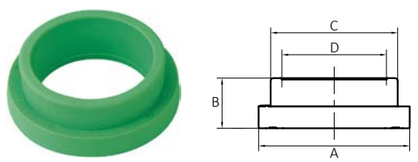
Reference	Measure	A	B	C	D	Weight	
I228520	20	84,00	26,60	21,40	19,30	26,2	100
I228525	25	96,00	32,00	26,40	24,30	44,2	50
I228532	32	107,80	39,70	34,10	31,30	70,2	30
	Ø	mm	mm	mm	mm	g	uns.

CROSS PIPE



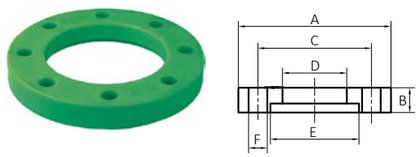
Reference	Measure	A	B	Weight	
I228725	25	27,5	32,0	78	50
I228732	32	43,0	16,5	157	30
	Ø	mm	mm	g	uns.

FLANGE SOCKET



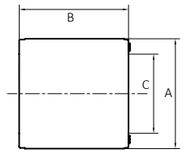
Reference	Measure	A	B	C	D	Weight	
I279050	50	86,30	29,40	60,50	49,30	59,00	45
I279063	63	87,80	34,70	73,10	62,20	65,50	35
I279075	75	105,00	35,30	88,30	74,00	88,00	26
I279090	90	122,30	39,40	106,60	88,80	138,50	19
I2790110	110	149,50	43,00	130,80	108,50	219,00	12
	Ø	mm	mm	mm	mm	g	uns.

FLANGE



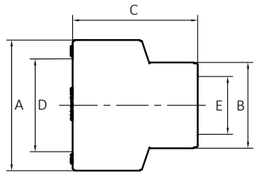
Reference	Measure	A	B	C	D	E	F	Weight	
I62050	50	147,7	24,2	110,7	62,5	86,5	4 - 17,8	242,5	18
I62063	63	162,4	27,0	124,2	76,5	88,0	4 - 17,8	292,0	15
I62075	75	178,2	25,9	138,0	91,3	107,0	4 - 17,8	348,0	12
I62090	90	198,2	29,7	160,0	110,0	124,8	8 - 17,8	467,5	6
I620110	110	216,0	29,6	177,8	134,9	151,5	8 - 17,8	501,5	6
	Ø	mm	mm	mm	mm	mm	mm	g	uns.

UNION



Reference	Measure	A	B	C	Weight	
I227020	20	27,50	34,10	18,90	9,40	220
I227025	25	33,70	38,30	23,90	15,90	150
I227032	32	41,80	42,20	31,00	24,70	100
I227040	40	52,10	49,10	38,80	42,40	70
I227050	50	65,60	54,60	48,50	75,00	30
I227063	63	81,30	62,20	61,40	122,50	24
I227075	75	96,00	70,00	73,30	194,20	16
I227090	90	116,00	70,70	87,40	325,00	12
I2270110	110	142,00	88,70	107,20	535,00	5
	∅	mm	mm	mm	g	uns.

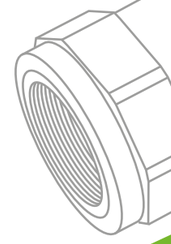
REDUCER



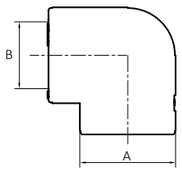
Reference	Measure	A	B	C	D	Weight	
I22432520	25 - 20	33,80	28,00	39,00	24,30	14,50	180
I22433220	32 - 20	42,20	28,00	41,00	31,00	20,00	100
I22433225	32 - 25	42,20	33,80	41,90	31,00	22,50	100
I22434020	40 - 20	52,30	28,00	44,50	39,30	31,50	60
I22434025	40 - 25	52,30	33,80	45,60	39,30	32,50	60
I22434032	40 - 32	52,30	42,60	46,30	39,30	36,00	60
I22435020	50 - 20	65,40	28,00	50,40	49,30	56,00	50
I22435025	50 - 25	65,40	33,80	50,90	49,30	57,00	50
I22435032	50 - 32	65,40	42,20	51,60	49,30	58,00	50
I22435040	50 - 40	65,40	52,30	51,80	49,30	62,70	50
I22436325	63 - 25	81,50	34,30	57,90	62,20	93,50	35
I22436332	63 - 32	81,50	42,60	57,80	62,20	103,00	35
I22436340	63 - 40	81,50	52,30	57,40	62,20	104,00	35
I22436350	63 - 50	81,50	65,40	59,10	62,20	106,00	30
I22437550	75 - 50	96,50	64,00	65,00	72,70	167,80	18
I22437563	75 - 63	96,50	80,00	67,00	72,70	172,80	18
I22439063	90 - 63	116,90	80,50	71,90	87,40	289,60	14
I22439075	90 - 75	116,90	96,00	74,40	87,40	296,00	12
I224311063	110 - 63	142,50	80,50	81,10	107,60	478,50	8
I224311075	110 - 75	142,50	96,00	84,10	107,60	493,00	7
I224311090	110 - 90	142,50	116,90	84,80	107,60	504,00	7
	∅	mm	mm	mm	mm	g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

POLYPROPYLENE ACCESSORIES (PP-R)

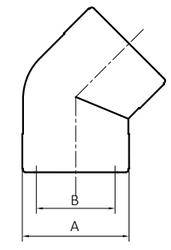


ELBOW 90°



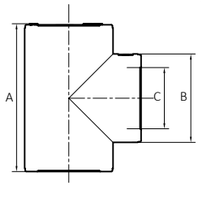
Reference	Measure	A	B	Weight	
I209020	20	27,60	19,30	15,60	200
I209025	25	34,20	24,30	26,30	130
I209032	32	42,00	31,00	42,70	70
I209040	40	52,50	39,00	76,60	30
I209050	50	66,00	48,50	138,10	24
I209063	63	82,00	61,40	242,66	12
I209075	75	96,50	73,30	367,00	6
I209090	90	116,00	87,50	621,00	4
I2090110	110	142,50	107,6	1072,00	2
	∅	mm	mm	g	uns.

ELBOW 45°



Reference	Measure	A	B	Weight	
I204120	20	27,60	19,30	12,30	180
I204125	25	33,50	24,00	21,10	110
I204132	32	42,50	31,00	35,60	80
I204140	40	52,50	39,00	59,00	50
I204150	50	64,50	48.90	95,10	25
I204163	63	82,50	61,70	176,00	12
I204175	75	96,50	73,30	296,00	8
I204190	90	116,20	87,50	468,50	6
I2041110	110	142,50	107,60	858,00	2
	∅	mm	mm	g	uns.

TEE

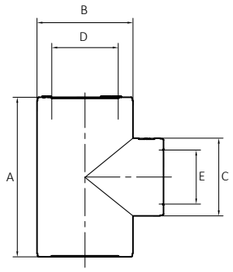


Reference	Measure	A	B	C	Weight	
I213020	20	52,90	27,40	19,30	19,00	110
I213025	25	61,40	33,50	24,20	31,10	90
I213032	32	71,00	42,10	31,00	52,90	40
I213040	40	87,50	52,20	39,30	93,10	36
I213050	50	103,00	66,10	49,30	168,80	20
I213063	63	123,30	81,20	62,20	285,70	12
I213075	75	138,40	96,80	73,30	444,80	6
I213090	90	157,30	116,20	87,50	703,00	4
I2130110	110	185,40	142,50	107,60	1226,50	2
	∅	mm		mm	g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

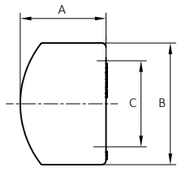
POLYPROPYLENE ACCESSORIES (PP-R)

REDUCER TEE



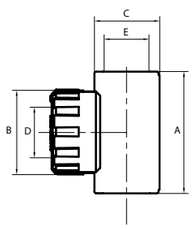
Reference	Measure	A	B	C	D	Weight	
I2130R252025	25 - 20 - 25	58,70	33.80	27,50	24,30	27,50	90
I2130R322032	32 - 20 - 32	66,40	42,50	28,00	31,00	41,00	60
I2130R322532	32 - 25 - 32	70,30	42,50	34,00	31,00	45,00	60
I2130R402040	40 - 20 - 40	68,40	52,30	27,50	39,30	63,50	40
I2130R402540	40 - 25 - 40	73,20	52,30	34,40	39,30	68,50	40
I2130R403240	40 - 32 - 40	79,70	52,30	42,00	39,30	79,00	35
I2130R502050	50 - 20 - 50	74,00	65,40	27,80	49,00	105,00	30
I2130R502550	50 - 25 - 50	78,70	65,40	33,80	49,00	113,00	30
I2130R503250	50 - 32 - 50	86,10	65,40	42,20	49,00	125,50	25
I2130R504050	50 - 40 - 50	93,60	65,40	52,30	49,00	137,00	25
I2130R632563	63 - 25 - 63	86,20	81,50	34,00	62,20	179,50	16
I2130R633263	63 - 32 - 63	92,80	81,50	42,60	62,20	192,00	16
I2130R634063	63 - 40 - 63	101,00	81,50	52,30	62,20	215,00	12
I2130R635063	63 - 50 - 63	110,80	81,50	65,80	62,20	243,00	10
I2130R753275	75 - 32 - 75	102,70	96,50	42,30	73,20	297,00	7
I2130R754075	75 - 40 - 75	112,00	96,50	50,50	73,20	340,00	7
I2130R755075	75 - 50 - 75	122,00	96,50	64,30	73,20	353,00	6
I2130R756375	75 - 63 - 75	131,20	96,50	81,30	73,20	421,00	6
I2130R906390	90 - 63 - 90	137,90	115,60	80,50	87,80	599,00	5
I2130R907590	90 - 75 - 90	146,00	115,60	96,80	87,80	644,00	5
I2130R11063110	110 - 63 - 110	154,20	142,50	80,50	107,60	960,50	2
I2130R11075110	110 - 75 - 110	164,40	142,50	97,00	107,60	1007,50	2
I2130R11090110	110 - 90 - 110	175,00	142,50	117,50	107,60	1090,00	2
	∅	mm	mm	mm	mm	g	uns.

PLUG



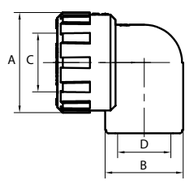
Reference	Measure	A	B	C	Weight	
I230120	20	24,90	27,10	19,30	6,50	250
I230125	25	27,50	33,30	24,30	11,00	180
I230132	32	31,90	42,30	31,00	20,40	120
I230140	40	38,30	54,60	39,30	37,10	70
I230150	50	42,90	64,60	49,30	51,10	65
I230163	63	52,90	82,30	62,20	106,50	35
I230175	75	58,60	96,50	73,30	159,00	20
I230190	90	64,00	116,00	87,80	268,50	14
I2301110	110	78,60	142,50	107,60	491,00	7
	∅	mm	mm	mm	g	uns.

FEMALE TEE



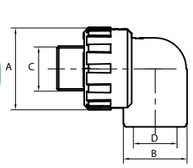
Reference	Measure	A	B	C	D	E	Weight	
I2130G2012	20 - 1/2"	57,80	38,50	27,80	H 1/2"	19,30	56,50	85
I2130G2034	20 - 3/4"	60,40	44,70	34,20	H 3/4"	19,30	76,00	85
I2130G2512	25 - 1/2"	61,60	38,80	27,80	H 1/2"	24,20	65,00	80
I2130G2534	25 - 3/4"	65,10	44,50	34,20	H 3/4"	24,20	81,00	70
I2130G3234	32 - 3/4"	64,50	45,00	34,20	H 3/4"	30,80	90,50	40
I2130G321	32 - 1"	70,60	55,10	42,00	H 1"	31,80	170,00	35
	∅	mm	mm	mm	mm	mm	g	uns.

FEMALE ELBOW



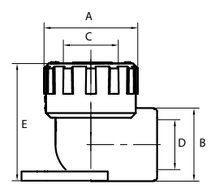
Reference	Measure	A	B	C	D	Weight	
I2090G2012	20 - 1/2"	38,50	28,00	H 1/2"	19,30	53,00	100
I2090G2034	20 - 3/4"	44,70	28,00	H 3/4"	19,30	65,50	60
I2090G2512	25 - 1/2"	38,80	34,30	H 1/2"	24,20	60,50	80
I2090G2534	25 - 3/4"	44,50	34,20	H 3/4"	24,20	78,50	70
I2090G3234	32 - 3/4"	45,00	42,30	H 3/4"	30,80	70,00	40
I2090G321	32 - 1"	55,10	42,30	H 1"	31,80	164,00	30
	∅	mm	mm	mm	mm	g	uns.

MALE ELBOW



Reference	Measure	A	B	C	D	Weight	
I2092G2012	20 - 1/2"	38,50	28,00	M 1/2"	19,30	60,00	60
I2092G2034	20 - 3/4"	44,70	28,00	M 3/4"	19,30	77,00	50
I2092G2512	25 - 1/2"	38,80	34,30	M 1/2"	24,20	67,00	50
I2092G2534	25 - 3/4"	44,50	34,20	M 3/4"	24,20	85,00	40
I2092G3234	32 - 3/4"	45,00	42,30	M 3/4"	30,80	93,00	30
I2092G321	32 - 1"	55,10	42,30	M 1"	31,80	193,00	20
	∅	mm	mm	mm	mm	g	uns.

WALL PLATED FEMALE ELBOW

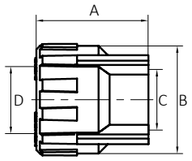


Reference	Measure	A	B	C	D	E	Weight	
I2472G2012	20 - 1/2"	39,00	27,80	H 1/2"	19,30	63,50	56,00	50
I2472G2512	25 - 1/2"	44,80	34,20	H 1/2"	24,20	67,00	75,50	35
	∅	mm	mm	mm	mm	mm	g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

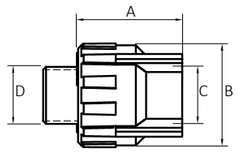
POLYPROPYLENE ACCESSORIES (PP-R)

FEMALE UNION



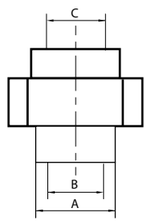
Reference	Measure	A	B	C	D	Weight	
I2270G2012	20 - 1/2"	41,5	41,5	19,0	H 1/2"	50,0	100
I2270G2034	20 - 3/4"	42,5	47,0	19,0	H 3/4"	66,0	80
I2270G2512	25 - 1/2"	42,5	41,5	24,2	H 1/2"	50,0	100
I2270G2534	25 - 3/4"	44,8	47,0	24,2	H 3/4"	66,0	50
I2270G3234	32 - 3/4"	44,8	47,0	31,0	H 3/4"	70,5	35
I2270G0321	32 - 1"	44,8	58,0	31,0	H 1"	144,0	30
I2270G40114	40 - 1 1/4"	51,5	71,8	39,0	H 1 1/4"	243,5	18
I2270G50112	50 - 1 1/2"	55,0	83,3	49,0	H 1 1/2"	331,5	12
I2270G632	63 - 2"	62,5	97,5	61,8	H 2"	480,0	8
I2270G75212	75 - 2 1/2"	66,5	116,8	74,0	H 2 1/2"	785,5	4
I2270G903	90 - 3"	77,5	119,5	87,8	H 3"	735,0	4
	∅	mm	mm	mm	mm	g	uns.

MALE UNION



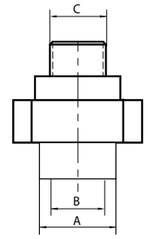
Reference	Measure	A	B	C	D	Weight	
I2243G2012	20 - 1/2"	41,50	38,80	19,30	M 1/2"	55,50	100
I2243G2034	20 - 3/4"	42,50	47,00	19,30	M 3/4"	74,00	70
I2243G2512	25 - 1/2"	42,50	41,50	24,20	M 1/2"	57,00	90
I2243G2534	25 - 3/4"	44,80	47,00	24,20	M 3/4"	75,50	50
I2243G3234	32 - 3/4"	44,80	47,00	31,00	M 3/4"	78,00	35
I2243G321	32 - 1"	44,80	58,00	31,00	M 1"	171,50	30
I2243G40114	40 - 1" 1/4"	51,50	71,80	39,00	M 1" 1/4"	259,00	18
I2243G50112	50 - 1" 1/2"	55,00	83,30	49,00	M 1" 1/2"	340,00	12
I2243G632	63 - 2"	62,50	97,50	61,80	M 2"	546,50	8
I2243G75212	75 - 2" 1/2"	66,50	116,80	73,80	M 2" 1/2"	910,00	4
I2243G903	90 - 3"	77,50	119,50	88,80	M 3"	977,00	4
	∅	mm	mm	mm	mm	g	uns.

DESMOUNTABLE FEMALE UNION



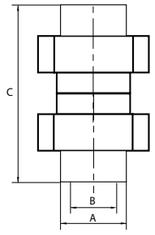
Reference	Measure	A	B	C	Weight	
I23322012	20 - 1/ 2"	27,60	18,90	1/2"	93,30	120
I23322034	20 - 3/4"	27,60	18,90	3/4""	86,3	100
I23322512	25 - 1/2"	34,10	23,80	1/2"	135,00	100
I23322534	25 - 3/4"	34,10	23,80	3/4"	128,00	80
I2332251	25 - 1"	34,10	23,80	1"	159,00	50
I2332321	32 - 1"	43,20	30,9	1"	199,50	50
I233240114	40 - 1 1/4"	53,80	38,6	1 1/4"	337,00	30
I233250112	50 - 1 1/2"	67,00	48,40	1 1/2"	612,00	12
I2332632	63 - 2"	82,90	61,30	2"	1004,3	8
	∅	mm	mm	mm	g	uns.

DESMOUNTABLE MALE UNION



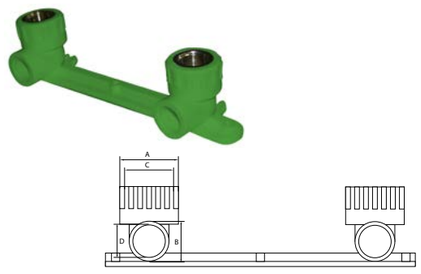
Reference	Measure	A	B	C	Weight	
I2333G2012	20 - 1/2"	27,60	18,90	1/2"	93,30	100
I2333G2034	20 - 3/4"	27,60	18,90	3/4""	115,00	100
I2333G2512	25 - 1/2"	34,10	23,80	1/2"	145,00	100
I2333G2534	25 - 3/4"	34,10	23,80	3/4"	128,00	60
I2333G251	25 - 1"	34,10	23,80	1"	195,00	50
I2333G321	32 - 1"	43,20	30,90	1"	199,50	40
I2333G40114	40 - 1 1/4"	53,80	38,60	1 1/4"	337,00	24
I2333G50112	50 - 1 1/2"	67,00	48,40	1 1/2"	612,00	12
I2333G632	63 - 2"	82,90	61,30	2"	1004,30	6
	∅	mm	mm	mm	g	uns.

DESMOUNTABLE 2 PIECES UNION



Reference	Measure	A	B	C	Weight	
I233020	20	37,60	18,90	77,00	190,60	50
I233025	25	34,10	23,80	91,00	268,00	36
I233032	32	43,20	30,90	101,10	416,00	24
I233040	40	53,80	38,60	110,00	723,00	15
I233050	50	67,00	48,40	126,00	1263,00	8
I233063	63	82,90	61,30	149,00	2038,60	4
	∅	mm	mm	mm	g	uns.

BATH / SHOWER COLLECTOR

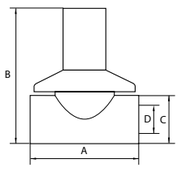


Reference	Measure	A	B	C	D	Weight	
CGBD2012	20 - 1/2"	38,50	28,00	H 1/2"	19,30	130,0	20
	∅	mm	mm	mm	mm	g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

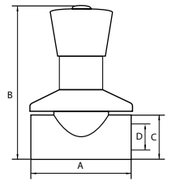
POLYPROPYLENE ACCESSORIES (PP-R)

VALVE WITH OCCULT HANDLE



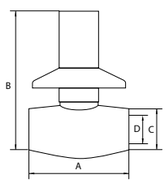
Reference	Measure	A	B	C	D	Peso	
IVM020	20	66,30	84,90	28,00	18,80	190,00	50
IVM025	25	77,80	93,90	34,00	23,80	235,00	40
IVM032	32	82,00	99,65	42,50	30,80	271,00	35
	∅	mm	mm	mm	mm	g	uns.

VALVE WITH TRIANGULAR HANDLE



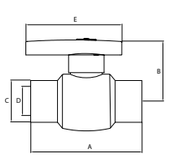
Reference	Measure	A	B	C	D	Peso	
IVMC20	20	66,30	107,40	28,00	18,80	269,00	35
IVMC25	25	77,80	115,90	34,00	23,80	312,00	30
IVMC32	32	82,00	121,65	42,50	30,80	334,60	25
	∅	mm	mm	mm	mm	g	uns.

BALL VALVE WITH OCCULT HANDLE



Reference	Measure	A	B	C	D	Peso	
IV50020	20	66,46	104,00	37,00	19,00	251,00	20
IV50025	25	70,50	108,00	42,00	24,00	275,00	15
	∅	mm	mm	mm	mm	g	uns.

BALL VALVE



Reference	Measure	A	B	C	D	E	Peso	
I885020	20	74,50	46,50	28,30	18,90	80,00	55,70	70
I885025	25	78,00	50,20	35,60	23,80	85,00	85,30	50
I885032	32	87,50	58,50	44,00	30,80	100,00	129,00	30
I885040	40	104,00	65,60	53,60	38,80	115,00	201,60	18
I885050	50	124,00	79,00	65,60	48,80	150,00	368,40	10
I885063	63	145,00	90,00	83,00	61,70	170,00	1431,00	5
I885075	75	147,00	99,50	98,50	73,40	181,00	1757,00	4
	∅	mm	mm	mm	mm	mm	g	uns.

THE PP-R ACCESSORIES ARE MANUFACTURED REGARDING THE STANDARD UNE-EN ISO 15874

POLYPROPYLENE ACCESSORIES (PP-R)

SCISSORS

Reference	For tubes	Long	Width	Deep	Weight		
TIJ1632	Ø16 until Ø40	10,50	23,00	2,50	544	-	1
	∅	cm	cm	cm	g	uns.	uns.

WELDING MACHINE 63 WITH METAL BOX 600 Watt - NO WELDING ADAPTERS

Reference	For tubes	Long box	Width box	Deep box	Weight box		
I29801663	Ø16 until Ø63	28,00	45,00	15,00	6,80	-	1
	∅	cm	cm	cm	g	uns.	uns.

WELDING MACHINE 110 WITH METAL BOX 900 Watt - NO WELDING ADPATERS

Reference	For tubes	Long box	Width box	Deep box	Weight box		
I298020110	Ø20 until Ø110	28,00	45,00	15,00	6,80	-	1
	∅	cm	cm	cm	g	uns.	uns.

WELDING ADAPTERS

Reference	Measure	Long	Width	Weight	
I298220	20	43,00	25,00	37,00	1
I298225	25	34,00	40,00	96,00	1
I298232	32	54,00	49,50	180,00	1
I298240	40	56,00	60,00	286,00	1
I298250	50	62,00	69,70	381,00	1
I298263	63	72,00	79,50	526,00	1
I298275	75	64,00	82,00	289,00	1
I298290	90	69,00	97,00	394,00	1
I2982110	110	-	-	-	1
	∅	mm	mm	g	uns.