



# HDPE PIPE PP COMPRESSION FITTINGS



SYSTEM **IFAN**

**Catalogue**

Technical Information

<https://www.ifanfittings.com/>

## Polyethylene(PE)

### General Information

Polymers which consist only of carbon and hydroge are called polyolefin.

Polyethylene(PE)belongs to this group.It is a semi-crystalline thermoplastic.Polyethylene is the best known standard polymer.

It is an environmentally friendly hydrocar-bon product so that it's the most common plastic.

PE is considered a non-polar material,meaning it does not dissolve in common solvents and hardly swells.

As a result,PE pipes cannot be solvent cemented.The appropriate joining method for this material is heat fusion.

## HDPE:High Density Polyethylene (PE 100)

### Description

PE 100 is a black high desity polyethylene designed for water pressure pipes,irrigation,chemicalindustrial and underground drainge.

PE 100 contains minimum 2% of well dispersed,fine particle size carbon black and stabilizers to ensure excellent weathering resistance and long term stability.

PE 100 shows excellent resistance to rapid crack propagation and slow crack growth,both being important parameters for pressure pipe design.

PE 100 can easily be welded by butt fusion,using standard HDPE parameters or by electrofusion.

PE 100 rwa material has the highest performance of all HDPE material(PE63 and PE80)

## Material Properties (PE 100)

### Material Data

The following table lists typical physical properties of polyethylene thermoplastic materials. Variations may exist depending on specific compounds and product.

PHYSICAL PROPERTIES		Typical Value	Unit	Test Method
Density	(Base resin)	949	Kg/m <sup>3</sup>	ISO 1183/ISO 1872-2B
Density	(Compound)	959	Kg/m <sup>3</sup>	ISO 1183/ISO 1872-2B
Melt Flow Rate	(190°C/2.16kg)	<0.1	g/10min	ISO 1133
Melt Flow Rate	(190°C/5.0kg)	0.25	g/10min	ISO 1133
Tensile Stress at Yield	50mm/min	25	Mpa	ISO 527-2
Elongation at Break		>600	%	ISO 527-2
Charpy impact, notched	(0°C)	16	KJ/m <sup>2</sup>	ISO 179/1eA
Hardness, Shore D		60	-	ISO 868
Carbon Black Content		≥2	%	ASTM D 1603
Brittleness Temperature		<-70	°C	ASTM D 746
ESCR	(10% Igepal), F <sub>50</sub>	>10000	h	ASTM D 1693-A
Thermal Stability	(210°C)	>15	min	EN 728

**High Impact Strength:**

The high impact strength of PE 100 pipes compared with other materials ensures a greater resistance to the rigours of pipe laying conditions.

**Damage Resistance:**

PE 100 has low notch sensitivity, providing a high level of resistance to the effect of external damage, especially important for pipe bursting operations and others where like hood such damage.

**Ease of Installation:**

PE 100 pipes are easy to install with their light weight and long lengths. PE coiled pipes are widely used in applications such as stick watering, irrigation systems, communications, gas, and reticulated water mains due to rapid installation and the ease and less frequent joining.

**High Flow Capacity:**

HDPE pipes have lower friction factors than the most non-plastic materials.

The surface energy characteristics of PE 100 ensure that the material deposition is inhibited and the smooth bore characteristic is maintained over the working life of the pipe line.

**Long life:**

PE 100 pipes have a proven high reliability record across a wide range of industries and applications, now approaching a period of 50 years. PE 100 also provides alone maintenance free lifetime with low whole life costs, compared to many other materials.

**Trenchless Construction:**

PE 100 pipes offer many advantages in slip lining, pipes bursting, directional drilling and microtunneling including features such as long lengths, corrosion resistance, light weight and ease of installation with minimum disruption.

Allowable working pressure for PE 100 pipes according to DIN 8074 with safety factor of 1.25

Allowable working pressure for pipes made from PE 100, conveying water, with a safety factor of 1.25

Tem- pera- ture, in °C	Years of service	Pipes series														
		Standard dimension (SDR)														
		25	20	16	12.5	10.5	10	8.3	8	6.3	5	4	3.2	2.5	2	
10	5	4.0	5.0	6.3	7.9	9.4	10.1	12.1	12.6	15.7	20.2	25.2	31.5	40.4	50.5	
		3.9	4.9	6.2	7.8	9.3	9.9	11.9	12.4	15.5	19.8	24.8	31.0	39.7	49.6	
		3.8	4.8	6.0	7.6	9.0	9.6	11.6	12.1	15.1	19.3	24.2	30.2	38.7	48.4	
		3.8	4.7	5.9	7.5	8.9	9.5	11.4	11.9	14.8	19.0	23.8	29.7	38.0	47.6	
		3.7	4.6	5.8	7.3	8.7	9.3	11.2	11.6	14.6	18.7	23.3	29.2	37.4	46.7	
	20	3.3	4.2	5.3	6.6	7.9	8.4	10.2	10.6	13.2	16.9	21.2	26.5	33.9	42.4	
		3.3	4.1	5.2	6.5	7.8	8.3	10.0	10.4	13.0	16.6	20.8	26.0	33.3	41.6	
		3.2	4.0	5.0	6.4	7.6	8.1	9.8	10.1	12.7	16.2	20.3	25.4	32.5	40.7	
		3.2	4.0	5.0	6.3	7.5	8.0	9.6	10.0	12.5	16.0	20.0	25.0	32.0	40.0	
		3.1	3.9	4.9	6.1	7.3	7.8	9.4	9.8	12.2	15.7	19.6	24.5	31.4	39.2	
30	2.8	3.6	4.5	5.6	6.7	7.2	8.6	9.0	11.2	14.4	18.0	22.5	28.8	36.0		
	2.8	3.5	4.4	5.5	6.6	7.0	8.5	8.8	11.0	14.1	17.7	22.1	28.3	35.4		
	2.7	3.4	4.3	5.4	6.4	6.9	8.3	8.6	10.8	13.8	17.2	21.6	27.6	34.5		
	2.7	3.3	4.2	5.3	6.3	6.7	8.1	8.4	10.6	13.5	16.9	21.2	27.1	33.9		
	2.4	3.0	3.8	4.8	5.8	6.1	7.4	7.7	9.6	12.3	15.4	19.3	24.7	30.9		
40	2.4	3.0	3.8	4.7	5.7	6.0	7.3	7.6	9.5	12.1	15.2	19.0	24.3	30.4		
	2.3	2.9	3.7	4.6	5.5	5.9	7.1	7.4	9.2	11.8	14.8	18.5	23.7	29.7		
	2.3	2.9	3.6	4.5	5.4	5.8	7.0	7.2	9.1	11.6	14.5	18.2	23.3	29.1		
	2.1	2.6	3.3	4.2	5.0	5.3	6.4	6.7	8.3	10.7	13.4	16.7	21.4	26.8		
	2.0	2.6	3.2	4.0	4.8	5.2	6.2	6.5	8.1	10.4	13.0	16.2	20.3	26.0		
50	1.9	2.3	2.9	3.7	4.4	4.7	6.7	5.9	7.4	9.5	11.8	14.8	19.0	23.7		
	1.5	1.9	2.4	3.0	3.6	3.8	4.6	4.8	6.0	7.7	9.7	12.1	15.5	19.4		
60	1.2	1.5	1.9	2.4	2.9	3.1	3.7	3.9	4.9	6.2	7.8	9.8	12.5	15.7		
70	1.2	1.5	1.9	2.4	2.9	3.1	3.7	3.9	4.9	6.2	7.8	9.8	12.5	15.7		



Allowable working pressure for PE 100 pipes according to DIN 8074 with safety factor of 1.6

Allowable working pressure for pipes made from PE 100, conveying water, with a safety factor of 1.6

Tem- pera- ture, in °C	Years of service	Pipes series														
		25	20	16	12.5	10.5	10	8.3	8	6.3	5	4	3.2	2.5	2	
		51	41	33	26	22	21	17.6	17	13.6	11	9	7.4	6	5	
		<b>Standard dimension (SDR)</b>														
		<b>Allowable working pressure</b>														
10	5	3.1	3.9	4.9	6.3	7.5	7.8	9.5	9.8	12.5	15.7	19.7	24.2	31.5	39.4	
	10	3.1	3.8	4.8	6.2	7.3	7.7	9.3	9.6	12.3	15.5	19.3	23.8	31.0	38.7	
	25	3.0	3.8	4.7	6.0	7.2	7.5	9.1	9.4	12.0	15.1	18.9	23.3	30.2	37.8	
	50	2.9	3.7	4.6	5.9	7.0	7.4	8.9	9.3	11.8	14.8	18.6	22.8	29.7	37.2	
	100	2.9	3.6	4.5	5.8	6.9	7.3	8.8	9.1	11.6	14.6	18.2	22.4	29.2	36.5	
20	5	2.6	3.3	4.1	5.3	6.3	6.6	7.9	8.2	10.5	13.2	16.5	20.4	26.5	33.1	
	10	2.6	3.2	4.0	5.2	6.2	6.5	7.8	8.1	10.3	13.0	16.2	20.0	26.0	32.5	
	25	2.5	3.1	3.9	5.0	6.0	6.3	7.6	7.9	10.0	12.7	15.9	19.5	25.4	31.8	
	50	2.5	3.1	3.9	5.0	5.9	6.2	7.5	7.8	9.9	12.5	15.6	19.2	25.0	31.2	
	100	2.4	3.0	3.8	4.9	5.8	6.1	7.3	7.6	9.7	12.2	15.3	18.8	24.5	30.6	
30	5	2.2	2.8	3.5	4.5	5.3	5.6	6.7	7.0	8.9	11.2	14.0	17.3	22.5	28.1	
	10	2.2	2.7	3.4	4.4	5.2	5.5	6.6	6.9	8.7	11.0	13.8	17.0	22.1	27.6	
	25	2.1	2.7	3.3	4.3	5.1	5.4	6.5	6.7	8.5	10.8	13.5	16.6	21.6	27.0	
	50	2.1	2.6	3.3	4.2	5.0	5.3	6.3	6.6	8.4	10.6	13.2	16.3	21.2	26.5	
	100	1.9	2.4	3.0	3.8	4.6	4.8	5.8	6.0	7.6	9.6	12.0	14.8	19.3	24.1	
40	5	1.9	2.3	2.9	3.8	4.5	4.7	5.7	5.9	7.5	9.5	11.8	14.6	19.0	23.7	
	10	1.9	2.3	2.9	3.7	4.4	4.6	5.5	5.8	7.3	9.2	11.6	14.2	18.5	23.2	
	25	1.8	2.2	2.8	3.6	4.3	4.5	5.4	5.6	7.2	9.1	11.3	14.0	18.2	22.7	
	50	1.6	2.0	2.6	3.3	3.9	4.1	5.0	5.2	6.6	8.3	10.4	12.8	16.7	20.9	
	100	1.6	2.0	2.5	3.2	3.8	4.0	4.8	5.0	6.4	8.1	10.1	11.4	16.2	20.3	
60	15	1.4	1.8	2.3	2.9	3.5	3.7	4.4	4.6	5.8	7.4	9.2	11.4	14.8	18.5	
	5	1.2	1.5	1.9	2.4	2.8	3.0	3.6	3.8	4.8	6.0	7.6	9.3	12.1	15.2	
70	2	0.9	1.2	1.5	1.9	2.3	2.4	2.9	3.0	3.8	4.8	6.1	7.5	9.8	12.2	

## Mechanical Properties

modern PE100 grades show a bimodal molecular weight distribution, i.e.:they consist a high tensile strength with a high resistance against fast and slow crack propagation. PE also shows a very high impact resistance throughout its entire temperature range.

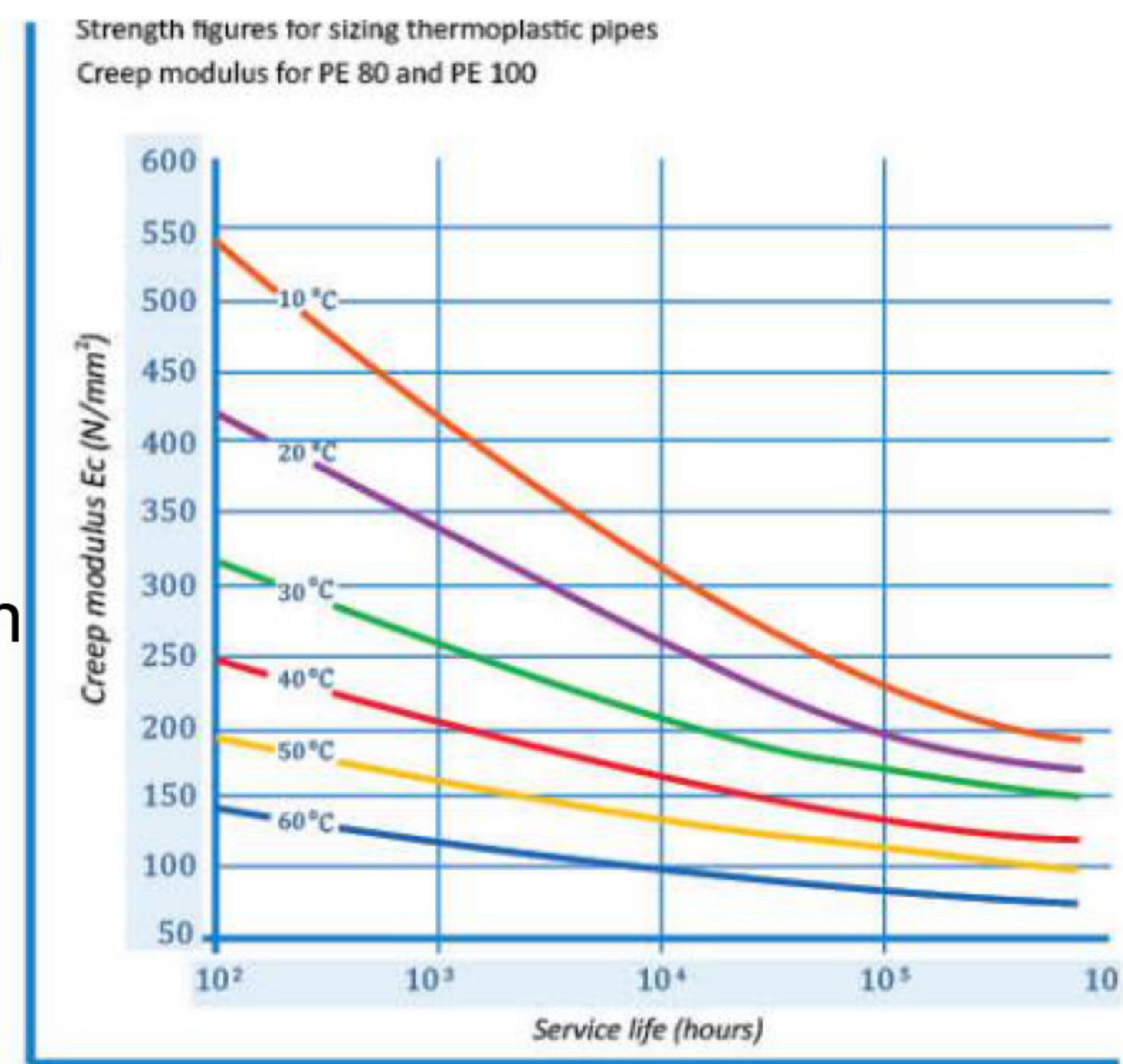
### Creep under internal pressure

One of the most important methods of verifying the service life of PE pipes are to determine creep under internal pressure also referred to simply as creep.

Even after 100 years of continuous service temperature of 20 degree no thermo oxidative processes will occur i PE 80 or PE 100 pipes. The tests conducted within this area provide comparative data used for the purpose of design/sizing pipes to be exposed to sustained loading

### Time-dependent modulus of elasticity

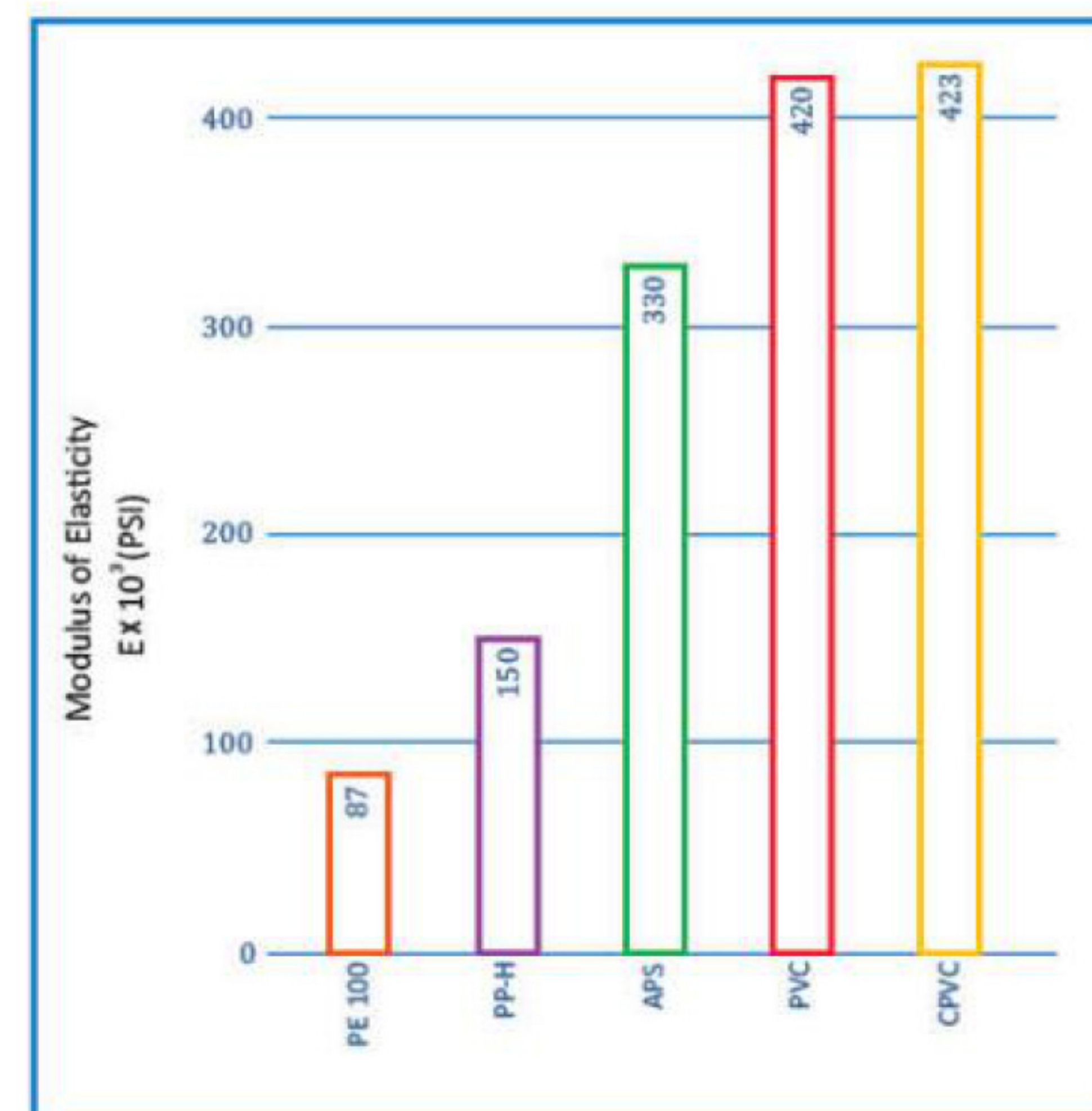
data relating to the modulus of elasticity is essential when is comes to performing stability analyses, e.g. in the case of buried pipes exposed to soil loads, live loads or groundwater. In the case of pipes made of thermoplastic materials, the time-dependent



### Expansion / Contraction

Allowing for length Changes in PE pipelines

Variations in temperature cause greater changes in thermoplastic materials than in metals. In the case of above ground, wall or duct mounted pipe work, particularly where subjected to varying working temperatures, it is necessary to make suitable provision for length changes in order to prevent additional stresses.



(fig.3)

PIPE



# IFANPlus<sup>+</sup>

VALVES

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GAS

PIPE

VALVES

FITTINGS

HEATING  
& HVAC

GAS

## Thermal Properties

Polyethylene pipes can be used at temperatures ranging from -50 °C to 60.

The thermal conductivity of PE100 is 0.4W/mk. Because of its inherent insulating properties a PE piping system is notably more economical due to not requiring secondary insulation when compared to a system made of metals such as stainless steel and copper. Expansion and contraction of pipes occurs with changes in the pipe material temperature this is in common with all pipe material and in order to determine the actual amount of expansion or contraction, the actual temperature change, and the degree of restraint of the installed pipeline need to be known. For design purposes, an average value of  $2.0 \times 10^{-4} / ^\circ\text{C}$  for PE pipes may be used.

The relationship between temperature change and length change for different materials. Where pipes are buried, the changes in temperature are small and slow acting and the amount of expansion/contraction of the pipe is relatively small. In addition, the frictional support of the backfill against the outside of the pipe restrains the movement and any thermal effects are translated into stress in the wall of the pipe.

Accordingly, in buried pipelines the main consideration of thermal movement is during installation in high ambient temperatures. Above ground PE pipe require no expansion/contraction considerations for free ended pipe or where lateral movement is of no concern on site.

Alternatively, pipes may be anchored at intervals to allow lateral movement to be spread evenly along the length of the pipeline.





## Applications of PE 100 Pipes

### Water Networks:

HDPE(PE100) pipes are used for potable water network which is not affecting the water properties or validity,as its chemically inert.

In addition,the networks are totally safe and very secure from any leakage problems resulted from water hammering due to the joining methods using butt welding and its high flexibility.

The smooth surface which prevents any kind of bacteria to accumulate makes the pipes is the most suitable choice when dealing with potable water.

### Sanitary and industrial drainage:

HDPE pipes are used for both sanitary and industrial drainage due to their excellent chemical resistance for(Acids,Alkaline,Salts) and their non-penetration nature,besides the network leakage free.

### Irrigation System:

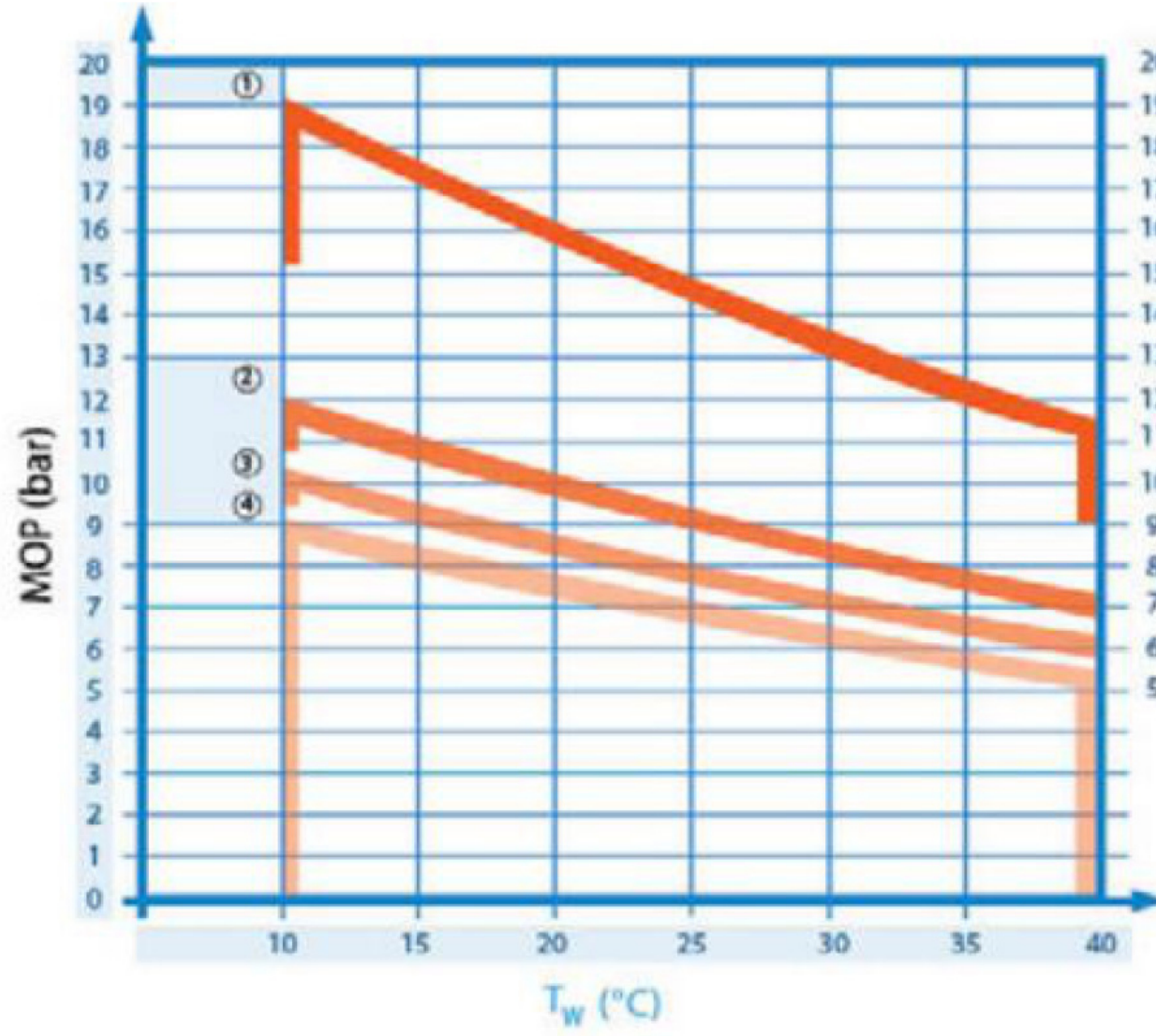
Due to flexibility,HDPE pipes have high resistance for environmental conditions especially ultraviolet rays.Same as PE pipes.One considered the optimum choice for irrigation networks by using it up ground and underground.

### Other uses:

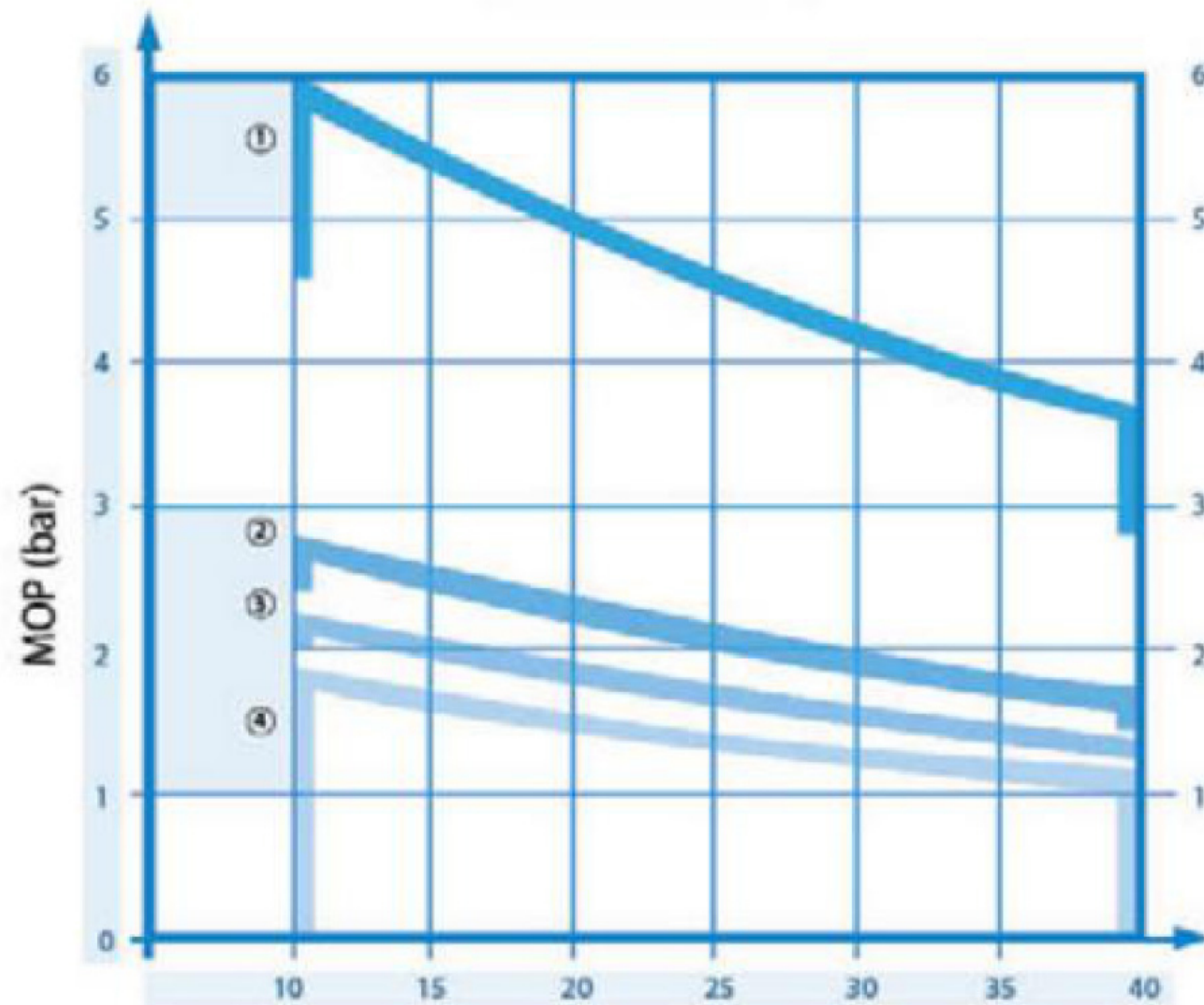
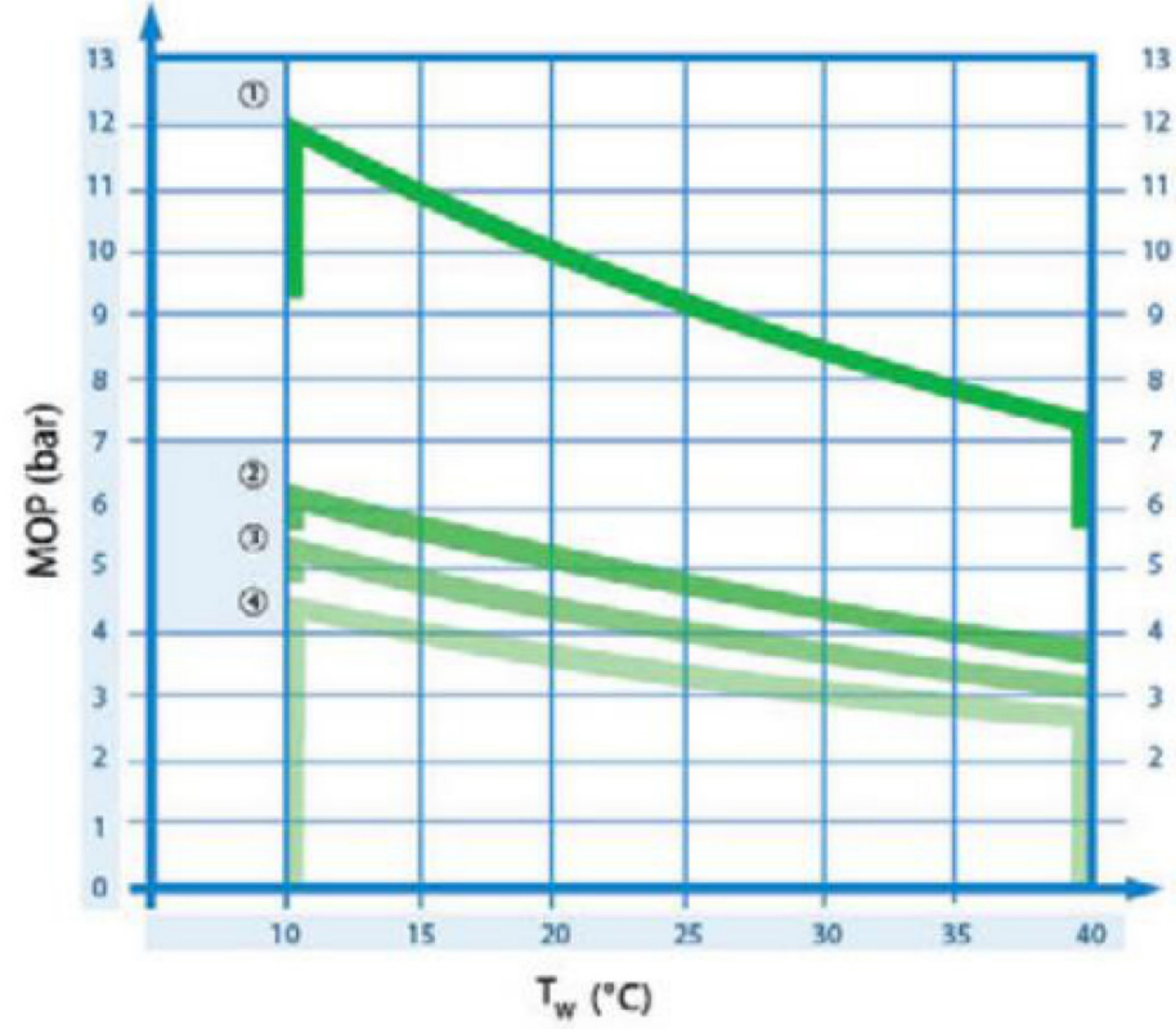
Siphons under canals,railway lines&aircraft runways where the pipes are installed by directional drilling,Cables ducts and water injection system of oilwells.

## Maximum Operation Pressure for PE 100 Pipes and Fittings

PE 100/SDR11



PE 100/SDR17



The indicated values don't apply to pipes exposed to UV radiation. maximum operating pressure of <1 are not included in the tables. for siphonic roof drainage and soil & waste systems, see the technical manual and pricelist for akatherm specialist drainage systems.

- ① = pipe, injection fittings, seamless bends and welded bends = 30°
- ② = welded bends >30°-90°, tees 90° welded
- ③ = welded 60° tees
- ④ = welded 45° tees

SF = safety factor 1.25  
 $t_{id}$  = lifespan 25a  
 MOP = internal pressure  
 $T_w(^{\circ}C)$  = pipe wall temperature

## PPH-H/B PROPERTIES

Technical features PP-H/B PIPES SYSTEM with high thermal stability.

Typical values	Test method	Unit	Mean value
<b>Properties</b>			
Abbreviated term	ISO 1043	-	PP-H/B
Colour	-	-	Heavy (7035 RAL) Normal (7042 RAL)
Density 23°C	ISO 1183	g/cm <sup>3</sup>	0.9
<b>Rheology</b>			
Melt Mass Flow Rate MFR (230°C/2,16Kg)	ISO 1133	g/10 min	0.4
<b>Mechanical properties</b>			
Tensile Modulus (1 mm/min)	ISO 527-1, -2	MPa	1300
Tensile Stress at Yield (50 mm/min)	ISO 527-1, -2	MPa	28
Tensile Strain at Yield (50 mm/min)	ISO 527-1, -2	%	10
Notched Impact Strength Izod 23°C	ISO 180/1A	KJ/m <sup>2</sup>	59
Notched Impact Strength Izod -20°C	ISO 180/1A	KJ/m <sup>2</sup>	6.2
Notched Impact Strength Charpy 23°C	ISO 179/1eA	KJ/m <sup>2</sup>	65
Notched Impact Strength Charpy -20°C	ISO 179/1eA	KJ/m <sup>2</sup>	5.2
Flexural Modulus (2mm/min)	ISO 178	MPa	1400
<b>Thermal properties</b>			
Vicat Softening Point, A120	ISO 306	°C	150
Vicat Softening Point, B120	ISO 306	°C	79
Heat Deflection Temperature 1,8 MPa (HDT/A)	ISO 75-1, -2	°C	48
Heat Deflection Temperature 0,45 MPa (HDT/B)	ISO 75-1, -2	°C	87

- MFR is measured at °c under a load of 2.16 kg with standard nozzle having a diameter of 2.095 mm.
- Average mechanical property values of several measurements carried out on standard injection moulded specimens (ISO 3167) conditioned at room temperature (ISO 291).
- Data contained above represent typical values of individual properties. They are informative, please do not construed as specifications.

PP-H/B PIPES SYSTEM is a kind of pipes and fittings with high resistance against strike and external pressure, with fast and easy installation and highly light weight.

### Chemical Resistance of PP

PP-H/B PIPE SYSTEM conforming to this standard is resistance to corrosion by water a wide range of PH-values such as soil and waste water, rain water, surface water and ground water.

Source:ISO/TR 10358

## Chemical Resistance of Polypropylene, Not Subjected to Mechanical Stress, to Various Fluids at 20, 60 and 100°C.

Chemical or Product	Concentration	Temperature °C		
		20	60	100
Acetic acid	Up to 40 %	S	S	-
Acetic acid	50 %	S	S	L
Acetic acid, glacial	> 96 %	S	L	NS
Acetic anhydride	100 %	S	-	-
Acetone	100 %	S	S	-
Acetophenone	100 %	S	L	-
Acrylonitrile	100 %	S	-	-
Air		S	S	S
Allyl alcohol	100 %	S	S	-
Almond oil		S	-	-
Alum	Sol	S	-	-
Ammonia, aqueous	Sat.sol	S	S	-
Ammonia, dry gas	100%	S	S	-
Ammonia, liquid	100%	S	S	-
Ammonium acetate	Sat. sol	S	S	-
Ammonium chloride	Sat. sol	S	S	-
Ammonium fluoride	Up to 20 %	S	S	-
Ammonium hydrogen carbonate	Sat.sol	S	S	-
Ammonium metaphosphate	Sat.sol	S	-	S
Ammonium nitrate	Sat.sol	S	S	S
Ammonium persulphate	Sat.sol	S	S	-
Ammonium phosphate	Sat.sol	S	-	-
Ammonium sulphate	Sat.sol	S	S	S
Ammonium sulphide	Sat.sol	S	S	-
Amyl acetate	100 %	L	-	-
Amyl alcohol	100 %	S	S	S
Aniline	100 %	S	S	-
Apple juice		S	-	-
Aqua regia	HCl/HNO <sub>3</sub> =3/1	NS	NS	NS
Barium bromide	Sat.sol	S	S	S
Barium carbonate	Sat.sol	S	S	S
Barium chloride	Sat.sol	S	S	S

## Technical Data

The Clamp Saddle line has been designed for side outputs on Polyethylene pipes(PE)and it is available in the following range of sizes:



Item 2024/2045 with single or double output. They have diameters for the coupling with  $\varnothing 20$  to  $\varnothing 315$ mm pipes and threaded outputs(1/2" to 3"),provided with 2 and 4 bolts according to the diameters.

Item 2022/2023 with single or double output,They have diameters for the coupling with  $\varnothing 20$  to  $\varnothing 315$ mm pipes and threaded outputs(1/2" to 4"),provided with 2 and 4 bolts according to the diameters,and metal grommet on the output threads.

### Sanitary Prescriptions

The Clamp Saddle line is fit for conveying food fluids because its materials are conform to the national and international standard in force

### Lab tests

The high quality of the products is ensured by periodical quality audits,through strict lab tests,under the most severe testing conditions.

### Working Pressures

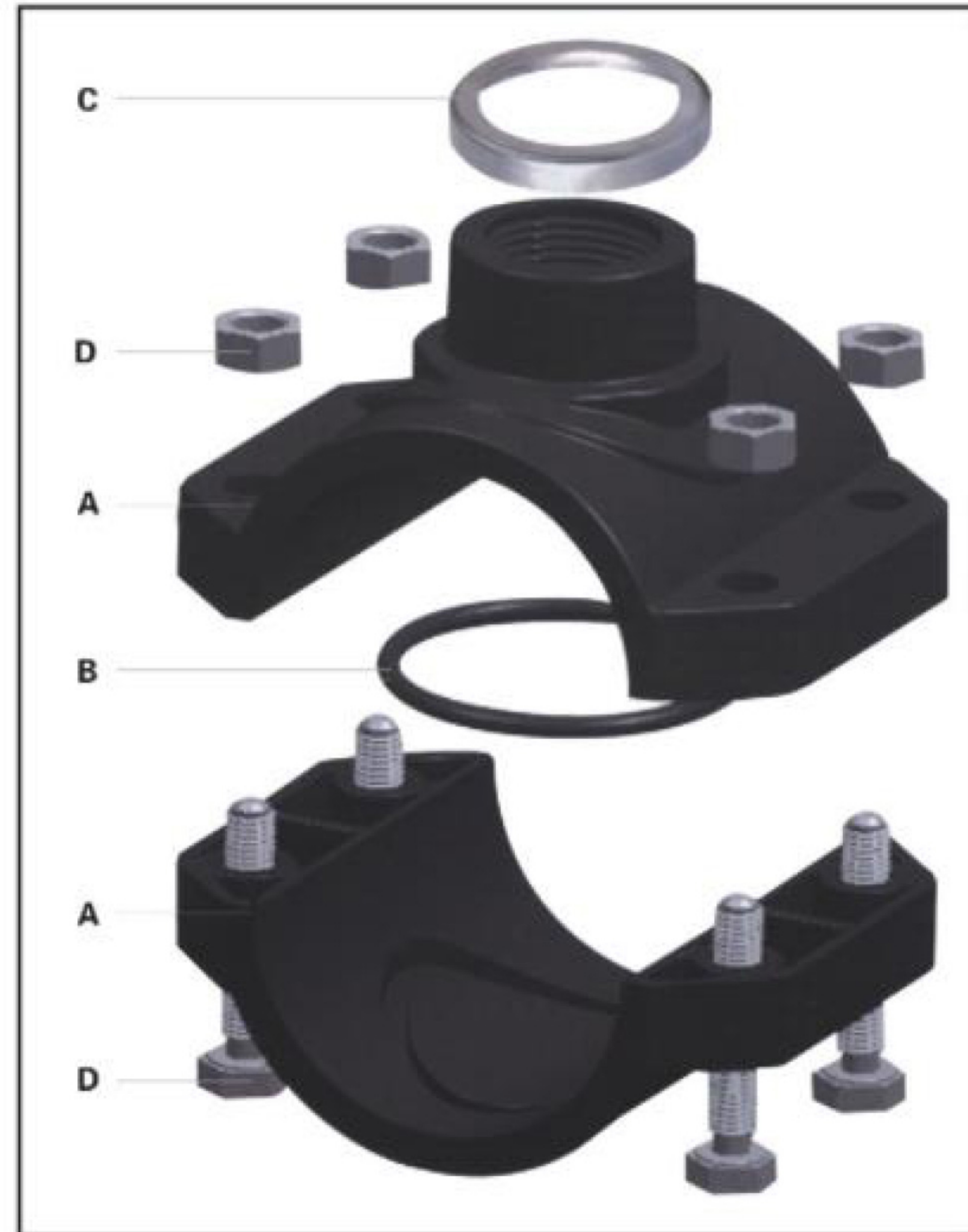
The Clamp saddle line allows a maximum working pressure (PN~PFA\*) from 4 to 16 bar,at a temperature of 20°C.

### Reference Standards

Pipes:UNI 7990,DIN 8074,UNI EN 12201

Threads:UNI ISO 7/1,UNI ISO 228/1,ANSI ASME B1-20.1

International standards:ISO 13460



### Material

Body and cover(A)	Black mastered polypropylene Copolymer,with a high level of stabilization to UV.	black
Gasket(B)	Acrlonitrile elastomeric Rubber(NBR)70 Shors A	black
Reinforcing ring(C)	AISI 430(UNI X8Cr17.W.nr 14828) Stainless steel for type 105-106 only	
Bolts(D)	chromium-plated galvanized steel Screws and nuts made of chromium-plated galvanized steel threaded hexagonal-head screws UNI 5739 Nuts compliant with UNI 5588	zinc chromate steel

## ASSEMBLY INSTRUCTIONS...

### Compression fittings 16mm–63mm



1. Cut the pipe squarely using special pipe cutting tools or circular or band saw. It is advisable to use a guide box to ensure a square cut.



2. Eliminate any burrs and bevel the end of the pipe to facilitate easy assembly and to prevent damage to the fitting gasket. The outer surface of the pipe must be free from imperfections or indentations where the body of the fitting makes contact with the pipe.



3. Unscrew the blue nut and put it onto pipe followed by the white clamping ring. Make sure the clamping ring is in the correct position, with the largest diameter facing the fitting.



4. Press the pipe axially into the fitting, past the gasket, until it touches the internal register inside the fitting body.



5. Tighten the ring nut by hand and then use the torque wrench provided. The ring nut must be tight, but it does not need to reach the end of the fitting Body.

## ASSEMBLY INSTRUCTIONS...

### Compression fittings 75mm–110mm



1. Cut at 90° the pipe extremity to be connected and eliminate possible flashes.



2. Unscrew of 3–4 turns the fitting nut and make sure that the OR and the blocking bush are in the highlight position.



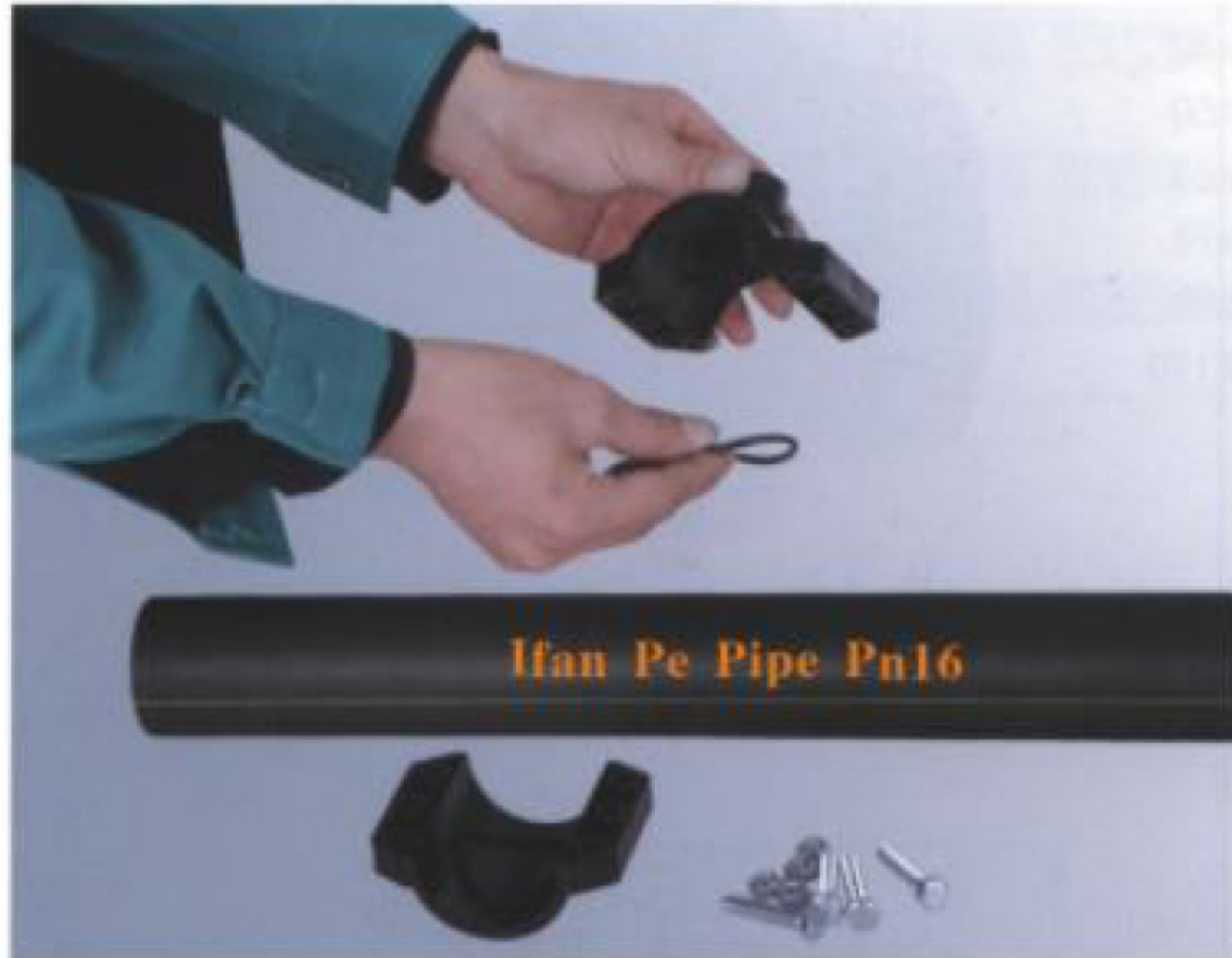
3. Introduce the pipe into the fitting till reaching the three ribs in the inside wall of the body.



4. Screw the nut up to the end using a belt or chain wrench.

## Assembling instructions

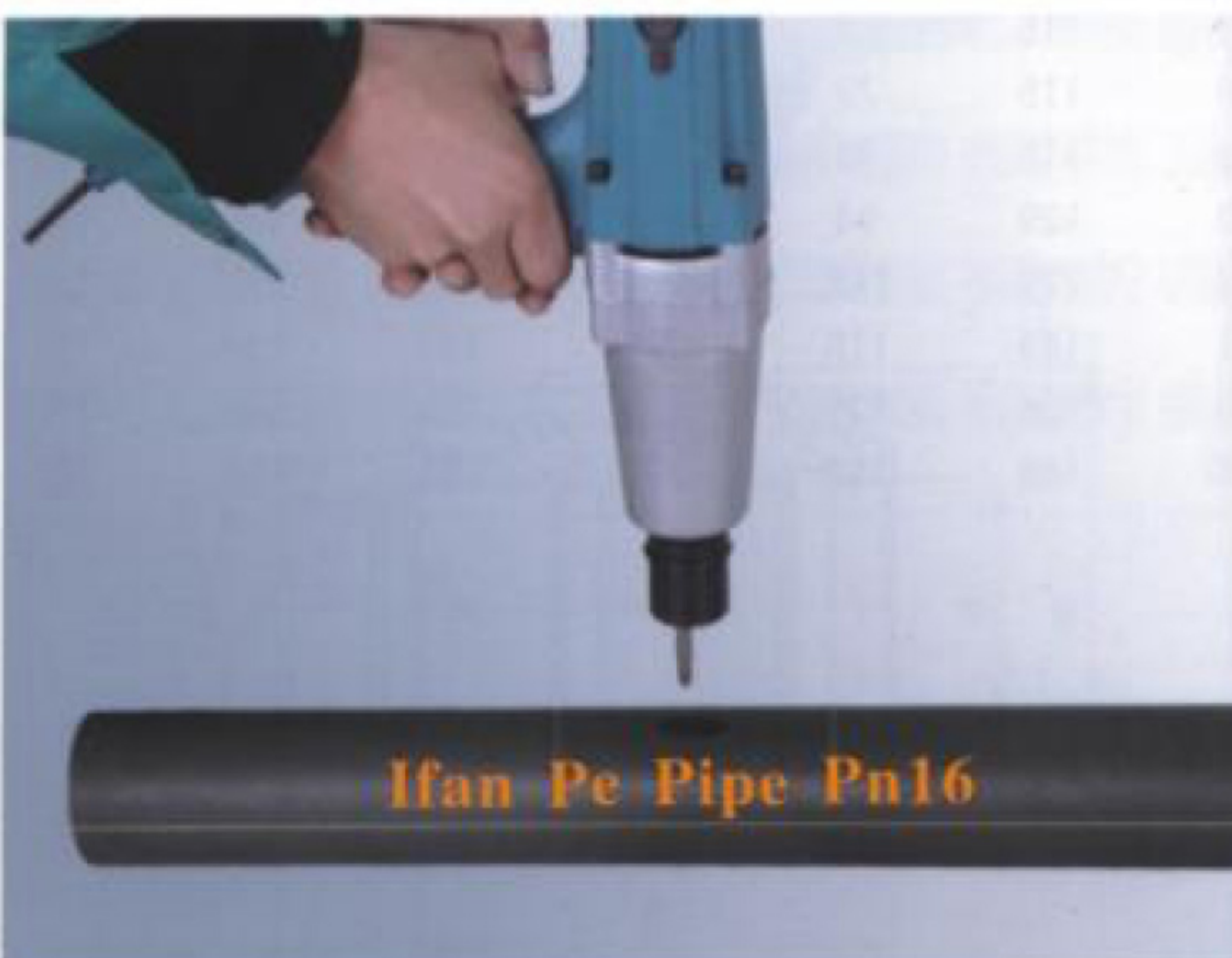
### Clamp saddles –alternative procedure–



1. Select the hole point and make sure that the external surface of the pipe is free from any impurity, put the gasket into the indentation of the saddle seat.



3. Drill a hole in the pipe wall, be careful not to damage the thread and the O-ring.



5. Drill the hole in the pipe wall being careful not to damage the other side of the pipe and remove the scraps.



2. Position the bottom part of the saddle on the chosen point and couple the upper part, then insert the screws from below and tighten the nuts one by one.



4. Use a marker to draw a reference line on the pipe to allow reinstalling the saddle, unscrew the nuts and remove the saddle.



6. Assemble the saddle according to the marked lines, to keep the hole in the same axis with the saddle's screw hole.



# IFANPlus<sup>+</sup>

Ifan-1001



$\Phi$  20  
 $\Phi$  25  
 $\Phi$  32  
 $\Phi$  40  
 $\Phi$  50  
 $\Phi$  63  
 $\Phi$  75  
 $\Phi$  90  
 $\Phi$  110

PE Pipe  
Tuyaux panaflexes

Ifan-1002



Size  
 S20  
 S25  
 S32  
 S40  
 S50  
 S63  
 S75  
 S90  
 S110

Socket  
Manchon

Ifan-1003



Size  
 S25x20 S90x63  
 S32x20 S90x75  
 S32x25 S110x75  
 S40x25 S110x90  
 S40x32  
 S50x25  
 S50x32  
 S50x40  
 S63x32  
 S63x40  
 S63x50  
 S75x50  
 S75x63

Raduce Socket  
Manchon reduit

Ifan-1004



Size  
 S20X1/2F S63X1-1/4F  
 S20X3/4F S63X1-1/2F  
 S20X1F S63X2F  
 S25X1/2F S63X2-1/2F  
 S25X3/4F S75x1-1/2F  
 S25X1F S75X2F  
 S32X3/4F S75X2-1/2F  
 S32X1F S75X3F  
 S32X1-1/4F S90X2F  
 S40X1F S90X2-1/2F  
 S40X1-1/4F S90X3F  
 S40X1-1/2F S90X4F  
 S40X2F S110X2-1/2F  
 S50X1F S110X3F  
 S50X1-1/4F S110X4F  
 S50X2F

Female Socket  
Ambout femelle

Ifan-1005



Size  
 S20X1/2M S75X2M  
 S20x3/4M S75X2-1/2M  
 S20x1M S75x3M  
 S25X1/2M S90x2M  
 S25X3/4M S90X2-1/2M  
 S25x1M S90X3M  
 S32X3/4M S90X4M  
 S32X1M S110x2-1/2M  
 S32x1-1/4M S110X3M  
 S40x1M S110X4M  
 S40X1-1/4M  
 S50x1M  
 S50X1-1/4M  
 S50X1-1/2M  
 S50X2M  
 S63X2M  
 S63X2-1/2M

Male Socket  
Ambout male

Ifan-1006



Size  
 L20  
 L25  
 L32  
 L40  
 L50  
 L63  
 L75  
 L90  
 L110

Elbow  
Coude

Ifan-1007



Size  
 L20X1/2F L63X1-1/2F  
 L20X3/4F L63X2F  
 L25X1/2F L63X2-1/2F  
 L25X3/4F L75X2F  
 L25X1F L75X2-1/2F  
 L32X1/2F L75X3F  
 L32X3/4F L90X3F  
 L32X1F L90X4F  
 L32X1-1/4F L110X3F  
 L40X1F L110X4F  
 L40X1-1/4F  
 L40X1-1/2F  
 L50X1-1/4F  
 L50X1-1/2F  
 L50X2F

Female Elbow  
Coude femelle

Ifan-1008



Size  
 L20X1/2M L63X1-1/4M  
 L20X3/4M L63X1-1/2M  
 L25X1/2M L63X2M  
 L25X3/4M L63X2-1/2M  
 L25X1M L90X3M  
 L32X1/2M L90X4M  
 L32X3/4M L110X3M  
 L32X1M L110X4M  
 L40X1M  
 L40X1-1/4M  
 L40X1-1/2M  
 L50X1-1/4M  
 L50X1-1/2M  
 L50X2M

Male Elbow  
Coude male



## FIELDS OF APPLICATION

Ifan compression fittings and clamp saddles are designed specifically for connecting polyethylene pipes with an outside diameter of 16–110 mm (135 mm for clamp saddles). They are fully compatible with all PELD, PEHD, PE40, PE80 and Pe100 pipes complying with EN 12201, ISO 4427, ISO 14236, ISO 13460, DIN 8074. They are normally used to convey drinking water and fluids at pressures up to 16 bar for generic applications. The quality of the materials used makes these fittings resistant to etching by numerous chemical substances and to UV-rays. The Ifan universal fitting can be used to connect systems using PE metric piping with existing pipes made of any material, with external diameters of 15–34 mm.

## STANDARDS

### Fittings and saddles

Complying with UNI 9561, UNI 9562, DIN 8076–3, ISO 14236, ISO 13460.

### Threads

Complying with ISO 7/1, DIN 2999, BS 21

### Flanges

Complying with UNI 2278, DIN 8063

## QUALITY CERTIFICATIONS

Ifan fittings have been tested and approved by all the leading certification agencies.

Ifan quality system is UNI EN ISO 9001:2000 certified.

## OPERATING TEMPERATURES

Fittings and clamp saddles are not suitable for use with hot water for the limits dictated by the uses of polyethylene pipes.

Maximum operating temperatures refer to the use of polyethylene pipes; it is therefore necessary to refer to the regulations applicable in the country of use. The fittings and clamp saddles can withstand temperatures below 0°C. The table below shows the maximum operating pressure during continuous operation (PFA) with changes in temperature if the liquid conveyed is water, in compliance with EN 805, EN 12201 and ISO 13761. For values falling within the set range, a linear interpolation can be obtained.

Operating T [°C]	≤20°	25°	30°	35°	40°	45°
PFA [bar]	16	14.9	13.9	12.8	11.8	10.8
PFA [bar]	10	9.3	8.7	8	7.4	6.7





## TENSILE STRENGTH

All Ifan fittings undergo tensile strength tests with the loads shown in the table below, in compliance with the strictest standards and regulations.

PIPE PE 100-PN16		
Ø(Mm)	F(N)	F(kgf)
16	833	85
20	1225	125
25	1774	181
32	2950	301
40	4557	465
50	7076	722
63	11250	1148
75	15719	1604
90	22736	2320
110	33898	3459



## Technical data

The Ifan compression fittings line has been designed for the conveyance of fluids at high pressures, for water conveyance, for potable water distribution and applications in the thermo-hydraulic sector. This product line is designed in accordance with the most severe international standards in terms of mechanical properties and alimentary compatibilities.



## Materials

Part	Material	Colour
Body(A)	Polypropylene block copolymer (PP-B) of exceptional mechanical properties even at high temperature.	black
Nut(B)	Polypropylene with dye master of high stability to UV rays and solidity to heat (8 grade according to standard DIN 54004) (RAL 5005)	blue
Clinching ring(C)	Polyacetal resin (POM) with high mechanical resistance and hardness.	white
Blocking bush(D)	Polypropylene	black
O Ring gasket(E)	Special elastomeric acrylonitrile rubber (NBR) for alimentary use	black
Reinforcing ring	AISI 430 (UNI X8Cr17, W.nr 14828) Stainless steel for female threads for 1-1/4" to 4"	

## Sanitary Prescriptions

The Compression fittings line is suitable for the conveyance of potable water and alimentary fluids according to the most important national and international standards.

## Working Pressures

The Compression fittings allows the maximum working pressure (PN-PFA\*) of 16 bar (UNI 9562) at the temperature of 20°C.

## Reference Standards

Dimensions: UNI 9561

Working Pressures: UNI 9562, DIN 8076-3, ISO 14236, BRL-K03.

Tubi in Polietilene (PE)/Polyethylene (PE) Pipes:

UNI 7990, DIN 8074, UNI EN 12201

Threads: UNI ISO 7/1, UNI EN 10226-1, ANSI ASME B1-20.1

Flanges: DIN 2501-1, UNI EN 1452-3, ISO 7005-2

## Materials

### Compression fittings

- 1a. Threaded metal insert in brass stamped in the body.
- 1b. Body: Polypropylene block copolymer (PP-B) of exceptional mechanical properties even at high temperature.
2. O Ring gasket: Special elastomeric acrylonitrile rubber (NBR) for alimentary use
3. Blocking bush: Polypropylene
4. Clinching ring: Polyacetal resin (POM) with high mechanical resistance and hardness.
5. Nut: Polypropylene with dye master of high stability to UV rays and solidity to heat (8 grade according to standard DIN 54004)





Ifan®

# IFAN PPR

Better PIPE, Better Life!

## GUARANTEE LETTER

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Add:No.3 Central Road,Diankou,Zhuji,Zhejiang

Mob: 0086-19884503412 E-mail: sales18-ifan@ifangroup.com web: <https://www.ifanfittings.com>