Technical catalogue

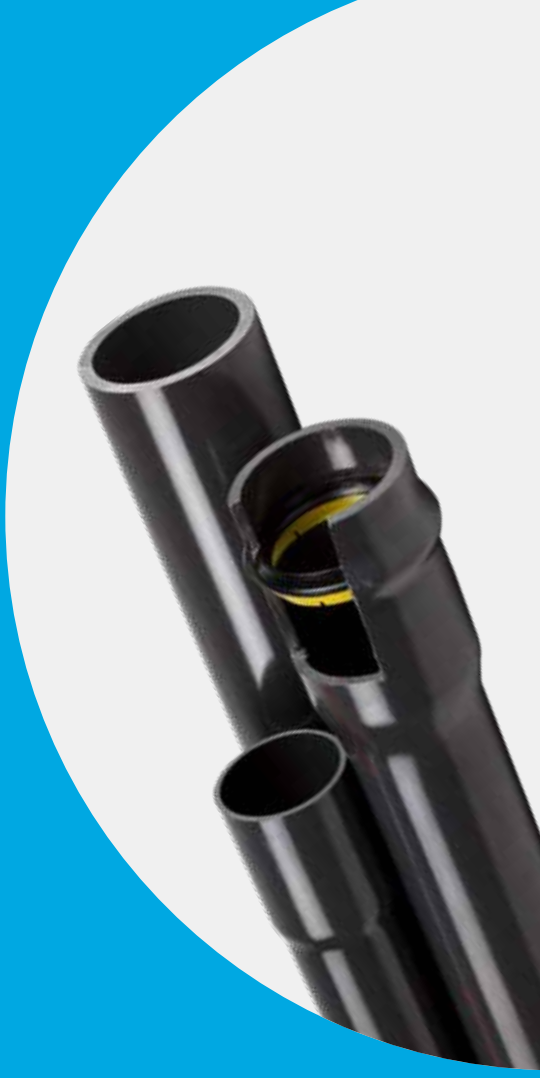
LARETER

PVC-U thermoformed pipes and fittings

Transport of pressurised fluids

aliaxis

Contents



General characteristics
Pressure PVC-U pipes

Developed in 1930 in Germany, PVC-U (rigid polyvinyl chloride- unplasticized) is obtained through the polymerization of a vinyl chloride monomer.
The presence of chlorine in the PVC-U molecule results in a high performance resin, in terms of thermal stability and chemical and mechanical resistance, up to temperatures of 60° C.

The different formulations obtained by adding suitable additives and stabilizers render the PVC-U the most versatile of all plastic materials, allowing it to be adapted to many applications involving fluids under pressure.

PVC-U represents one of the more economic solutions in the field of thermoplastic and metal materials for resolving problems in the transport of corrosive chemical fluids, and in the distribution and treatment of water in general.

The mains reasons for this preference are the unique characteristics of the resin, which include:

- **Good chemical resistance:** PVC-U resins have excellent chemical resistance to most acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions. It is not recommended for the transport of polar organic compounds, including some types of chlorinated and aromatic solvents.
PVC-U resins are also fully compatible with the transport of foodstuffs, demineralised water, potable water and unconditioned water, as provided for by current national and international standards.
PVC-U resins are also characterised by their low permeability to oxygen and reduced water absorption (0.1% at 23 °C according to ASTM D 570).

- **Good thermal stability:** PVC-U resins have good thermal stability in the temperature range between 20 °C and 50 °C and are typically used in industrial and water supply applications, guaranteeing excellent mechanical strength, sufficient rigidity for the purpose, reduced thermal expansion coefficients and high factors of safety in service.
I PVC-U compounds are also resistant to combustion with a flash point of 399 °C. The flame, in fact, only persists if the oxygen concentration is twice that of atmospheric or in the presence of a flame from an external source. Flash point: 399 °C. Oxygen index: 45%. UL 94 class: V0. Thanks to the reduced coefficient of thermal conductivity (λ = 0.15 W/m °C according to ASTM C177) the use of PVC-U resin for transporting hot fluids reduces heat loss and virtually eliminates condensation problems.

- **Good mechanical strength:** The thermal stability of the material leads to good impact resistance and the capacity to support service pressures of 6 – 25 bar at 20°C.

- **Resistance to ageing:** PVC-U resins have a high circumferential breaking strength (Minimum Required Strength MRS ≥ 25.0 MPa at 20°C) and allow long installation lifetimes without showing any signs of significant physical-mechanical deterioration.

Density	
Test method	ISO 1183 - ASTM D792
Unit of measurement	g/cm^3
Value	1.38
Modulus of elasticity	
Test method	ISO 527
Unit of measurement	$MPa = N/mm^2$
Value	3200
Chapry resistance with notch at 23°C	
Test method	ASTM D256
Unit of measurement	KJ/m^2
Value	5-8
Ultimate elongation	
Test method	ISO 527
Unit of measurement	%
Value	50
Shore hardness	
Test method	ISO 868
Unit of measurement	Shore D
Value	80
Tensile strength	
Test method	ISO 527
Unit of measurement	$MPa = N/mm^2$
Value	50
VICAT softening point (B/50)	
Test method	ISO 306
Unit of measurement	°C
Value	76
Heat distortion temperature HDT (0.46 N/mm^2)	
Test method	ASTM D648
Unit of measurement	°C
Value	86
Thermal conductivity at 23° C	
Test method	DIN 52612-1 - ASTM C177
Unit of measurement	W/(m °C)
Value	0.16
Coefficient of linear thermal expansion	
Test method	DIN 53752 - ASTM D696
Unit of measurement	m/(m °C)
Value	8 x 10-5
Limiting Oxygen Index	
Test method	ISO 4859-1 - ASTM D2863
Unit of measurement	%
Value	45

General characteristics

Pipe size table

Rigid PVC-U pipes for pressurised fluid pipes with Forsheda gasket

RAL 7011 dark grey colour. Standard total length of 6 m. including gasket joint or gasket joint pre-inserted and locked FORSHEDA 601 POWER-LOCK® or glue joint or smooth bar.
Compliance mark: Lareter rigid PVC pipes for pressure pipes are guaranteed by the certifications issued by IIP, CSTB, DVGW, WRAS and IMO.

The pipes can be supplied in different colours (blue, orange, yellow...) and with different lengths (from 9 m to 0.15 m).

Øe	PN 6		PN 10			PN 12.5
	th	th	th	th	th	th
mm	mm	mm	mm	mm	mm	mm
16	-	-	-	-	-	-
20	-	-	-	-	-	-
25	-	-	-	-	-	1.5
32	-	-	1.6	-	1.6	1.9
40	1.5	-	1.9	-	1.9	2.4*
50	1.6	-	2.4	-	2.4	3.0*
63	2.0	-	3.0	3.0	3.0	3.8*
75	2.3	-	3.6	3.6	3.6	4.5*
90	2.8	-	4.3	4.3	4.3	5.4*
110	2.7	3.2*	4.2	5.3	5.3	5.3
125	3.1	3.7*	4.8	6.0	6.0	6.0
140	3.5	3.7*	5.4	6.1	6.7	6.7
160	4.0	4.0*	6.2	6.2	7.7	7.7
180	4.4	4.4*	6.9	6.9	8.6	8.6*
200	4.9	4.9*	7.7	7.7	9.6	9.6*
225	5.5	5.5*	8.6	8.6	10.8	10.8*
250	6.2	6.2*	9.6	9.6	11.9	11.9*
280	6.9	-	10.7	-	13.4	13.4*
315	7.7	7.7*	12.1	12.1	15.0	15.0*
355	8.7	-	13.6	-	16.9	16.9*
400	9.8	9.8*	15.3	15.3	19.1	19.1*
500	12.3	12.3*	19.1	19.1	23.9	23.9*

* Upon request

UNI EN ISO 1452-2
PN 6 - 10 - 12.5 - 16 - 20
d 16 - 500 mm

NF EN 1452
PN 6 - 10 - 16 - 25
d 16 - 315 mm

DIN-8061 - 62
Reihe 4, Reihe 5
PN 10 - 16
d 16 - 500 mm

Øe mm	PN 16 th mm	PN 16 th mm	PN 16 th mm	PN 20 th mm	PN 25 th mm	Packaging No. pipes/pallet	Useful length Ring mt	Useful length Solvent welding mt
16	-	-	-	1.5	1.8	Bulk	-	-
20	1.5	-	1.5	1.9*	2.3	1166	-	5.96
25	1.9	-	1.9	2.3*	2.8	757	-	5.96
32	2.4	2.4	2.4	2.9*	3.6	449	-	5.93
40	3	3	3	3.7*	4.5	275	5.90	5.93
50	3.7	3.7	3.7	4.6*	5.6*	194	5.90	5.91
63	4.7	4.7	4.7	5.8*	7.1*	123	5.89	5.91
75	5.6	5.6	5.6	6.8*	-	87	5.88	5.89
90	6.7	6.7	6.7	8.2*	-	96	5.87	5.87
110	6.6	8.1	8.1	8.1*	-	57	5.87	5.86
125	7.4	9.2	9.2	9.2*	-	51	5.85	5.85
140	8.3	9.3	10.3	10.3*	-	45	5.84	5.83
160	9.5	9.5	11.8	11.8*	-	33	5.83	5.82
180	10.7	10.7	13.3	13.3*	-	28	5.83	5.82
200	11.9	11.9	14.7	14.7*	-	20	5.82	5.8
225	13.4	13.4	16.6	16.6*	-	18	5.8	5.78
250	14.8	14.8	18.4	18.4*	-	12	5.79	5.80
280	16.6	-	20.6*	20.6*	-	11	5.79	5.80
315	18.7	18.7	-	-	-	9	5.77	5.76
355	21.1*	-	-	-	-	6	5.75	5.72
400	23.7*	23.7*	-	-	-	5	5.75	5.72
500	29.7*	-	-	-	-	2	5.74	5.65

* Upon request

BV IMO A.753 (18)
Ø 16 - 315
PN 6 - PN 10 - PN 12.5 -
PN 16 - PN 20

UNI EN ISO 9001

UNI EN ISO 14001

ISO 45001

General characteristics

Dimensional table of threadable pipes

Standard PVC-U threadable pipes in bars of mt. 5 smooth. Quotation for thread, colour, different lengths on request.

DN inches	Øe mm	PN 10 th mm	PN 16 th mm	Packaging Tubes/pallet
3/8"	**17.1**	-	2.6	Bulk
1/2"	**21.2**	2.6	3	1103
3/4"	**26.6**	2.6	3.4	664
1"	**33.4**	3.3	4.3	436
1" 1/4	**42.1**	3.7	5	292
1" 1/2	**48.1**	4	5.4	207
2"	**60.2**	4.6	6.4	252
2"1/2	**75**	5.3	-	87
3"	**88.7**	6	-	96
4"	**114.1**	7	-	67

Pressure U-PVC pipes BS-EN 1452, BS 3505

Pipes for aqueducts, wastewater, sewage and chemical applications. Dimensions in inches according to EN 1452 BS 3505 standards.

Grey RAL 7011 colour, standard length 6 metres with smooth or threadable ends.

Use for public water supply is certified by WRAS.

Øe inches	PN 9/CLASS C th mm	PN 12/CLASS D th mm	PN 15/CLASS E th mm	CLASS 7 th mm	Packaging Tubes/pallet
3/8"	-	-	1.5	-	Bulk
1/2"	-	-	1.7	3.7	1103
3/4"	-	-	1.9	3.9	664
1"	-	-	2.2	4.5	436
1" 1/4	-	2.2	2.7	4.8	292
1" 1/2	-	2.5	3.1	5.1	207
2"	2.5	3.1	3.9	5.5	252
2"1/2	3	-	4.8	-	87
3"	3.5	4.6	5.7	-	96
4"	4.5	6	7.3	-	67
5"	5.5	-	-	-	45
6"	6.6	8.8	10.8	-	30
8"	7.8	-	-	-	18

WRAS APPROVED MATERIAL

Reference standards

PVC-U

Production of the PVC-U lines is carried out according to the highest quality standards and in full compliance with the environmental restrictions set by the applicable laws in force and in accordance with ISO 14001.

All products are made in accordance with the quality guarantee system in compliance with ISO 9001.

- **ASTM D 1784 cl. 12454**
  Rigid PVC-U compound (for industrial applications)
- **ASTM D 1785**
  Standard specification for pipes in PVC, Sch. 40-80-120
- **BS 3505**
  PVC-U pipes for cold water
- **EN 10226-1/2**
  Pipe threads, where pressure-tight joints are made on the threads - Part 2: Tapered external threads and tapered internal threads - Dimensions, tolerances
- **DIN 8061**
  PVC-U pipes: General quality and testing requirements
- **DIN 8062**
  Dimensions of PVC-U pipes
- **DVS 2204 - DVS 2221**
  Solvent welding of thermoplastic materials PVC-U
- **EN ISO 1452**
  Characteristics of fittings and pipes in PVC-U for piping systems intended for water supply
- **EN ISO 15493**
  Component systems (Tubes, Fittings and Valves) in ABS, PVC-U, PVC-C for industrial applications
- **ISO 161-1**
  Dimensions of PVC-U pipes and fittings - metric series
- **ISO 727**
  PVC-U pipes and fittings. Dimensions and tolerances, metric series
- **UNI 11242**
  Solvent welding of PVC-U PVC-C pipes, fittings and valves

Approvals and quality marks

- **ACS France (Attestation de conformité Sanitaire)**
  Suitability of PVC-U for application with water intended for human consumption

- **Bureau Veritas**
  Suitability of PVC-U for conveyance, sanitary water treatment and air conditioning in the naval sector

- **CSTB PVC-U**
  pipe and fittings in accordance with NF T 54-028

- **IIP Italian Institute of Plastics PVC-U**
  pipe and fittings in accordance with UNI EN ISO 1452

- **WRAS (Water regulations advisory scheme - UK)**
  Suitability of PVC-U and PVC-C for the transport of drinking water (Water Regulation Advisory Scheme - UK)

- **DVGW (Deutscher Verein des Gas und Wasserfaches)**
  Potability issued by the Hygiene-Institut on behalf of DVGW

Sustainability

Plastic Second Life

On 25 November 2024, Aliaxis Italia Holding obtained certification no. 3196/2024 **"Plastic Second Life"** " for the production sites of Casella (GE), Fiesso Umbertiano (RO) and Zola Predosa (BO). This certification applies to PVC-U piping systems obtained by extrusion and molding using internal by-product.
Through this document, IIP Srl, a body accredited by IPPR (Institute for the Promotion of Recycled Plastics) licensee of the brand, certifies that the products listed above obtained from the use of a percentage of production scraps comply with the requirements specified in the "Plastic Second Life" Certification Regulation Ed. 2 rev. 1 of 10/2022, which includes compliance with the requirements of the EN15343:2007 standard. Specifically, this certification is confirmed as a useful option to demonstrate the presence of the minimum value of reused plastic material and is part of the CAM "Minimum Environmental Criteria" measures.
The minimum environmental criteria, dictated by Ministerial Decree no. 256 of 23 June 2022, are requirements aimed at identifying, in the various phases of the life cycle of the work, the best design solution, product or service from an environmental point of view. As regards PVC-U pipes, during the tender, the afore mentioned Ministerial Decree provides the application of the following:

Criteria
PVC pipes must be produced with a content of recycled materials, i.e. recovered, or by-products of at least 20% of the weight of the product, understood as the sum of the three fractions. The percentage indicated is intended as the sum of the contributions given by the individual fractions used and is verified in accordance with the provisions of paragraph "2.5 - Technical specifications for construction products - indications to the contracting authority".

Verification
The CAM Report, referred to criterion "2.2.1-CAM Report", illustrates how the project has considered this design criterion.

Indications to the contracting authority (2.5 TECHNICAL SPECIFICATIONS FOR CONSTRUCTION PRODUCTS)
The percentage value of the content of recycled or recovered material or by-products is demonstrated by producing the relevant certificate in which the number of the same, the percentage value required, the name of the certified product, the dates of issue and expiry are clearly indicated: "Plastic second life" mark, with indication of the percentage of recycled material on the certificate.

The Ecovadis certification of the plant "Environmental performance evaluation system"

Ecovadis manages the 1st collaborative platform that allows companies to monitor the sustainability performance of their suppliers, in 150 sectors and 110 countries. World-class standards-based assessment model: GRI (Global Reporting Initiative), UNGC (United Nations Global Compact), ISO 26000

The Ecovadis certification is a tool for evaluating the environmental, social and governance (ESG) performance of companies at an international level. It is issued following an independent assessment based on a standardized and transparent methodology through which companies must demonstrate that they adopt sustainable and responsible practices in different areas, including work, the environment, ethics and governance. The certification process starts with a questionnaire that covers a range of issues relevant to sustainability, such as water management, respect for human rights, environmental protection and the fight against corruption. Once the questionnaire is completed, the data is analyzed by a team of experts who evaluate the company's ESG performance and assign a score based on a scale from 0 to 100

Since 2022, the Aliaxis plant in Fiesso Umbertiano (RO) has been certified.This result represents one of the key milestones to help reduce the environmental and social impact in the industrial sector.

Solvent welding instructions

Solvent welding, or cement jointing, is the longitudinal joining system for connecting rigid PVC-U pipes and fittings.

The "cementing" is carried out using adhesives/cements obtained by dissolving PVC-U polymer in a solvent mixture. This solvent liquefies the walls of the pipe and/or fitting, allowing the constituent material to chemically combine and be subsequently welded. Chemical welding allows permanent joints be achieved possessing chemical and mechanical strength characteristics identical to those of the pipes and fittings joined.
The adhesives/solvent cements must be selected according to the type of thermoplastic resin to weld, in that the nature of the solvents vary, as does the weld material contained in them. It must be remembered, therefore, that all the solvent cements designed for joining thermoplastic pipes and fittings must be used to join pipes, fittings and valves of the same material.

Before starting any solvent welding operations, the efficiency and condition of the equipment used and the pieces to be assembled must be verified, in particular the uniformity, fluidity and expiry date of the solvent cement.

1) Cut the pipe perpendicular to its axis to obtain a clean square section, preferably using a wheeled pipe cutter designed specifically for thermoplastic pipes (fig. 1).

2) Chamfer the outer edges of the pipe in order to ensure that it enters the socket of the fitting at an angle of 15°. The chamfering operation must be carried out at all costs, otherwise the lack of chamfer can lead to the solvent being scraped off the surface of the fitting, thus compromising the effectiveness of the joint. The chamfering must be carried out using the appropriate chamfering tool (fig. 2).

3) Measure the depth of the socket of the fitting to the internal shoulder and mark the corresponding distance on the end of the pipe (fig. 3 and 4).
For more details, refer to the "Socket depth, cement and chamfer length" table.

4) Using an clean paper towel or applicator soaked in Cleaner-Primer, remove any traces of dirt or grease from the outer surface of the pipe for the entire cementing length. Repeat the same operation on the internal surface of the socket of the fitting: leaving the surfaces softened (fig. 5).

Leave the surfaces to dry for a few minutes before applying the solvent cement. Remember that, in addition to cleaning the joint surfaces, the Cleaner-Primer also performs the important role of softening and preparing the surface to receive the solvent, an operation that enables a perfect joint to be obtained.

5) Apply the solvent cement in a uniform manner longitudinally over both parts to be assembled (outer surface of the pipe and internal coupling surface of the fitting) using an applicator or suitably sized coarse brush.

For more detailed information, refer to the “Brush-applicator characteristics and dimensions” table.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

It is advisable to use an applicator/brush of dimension not less than half the diameter of the pipe. The solvent cement must be applied along the entire length of the joining surface of both the pipe and the fitting:

- for the entire joint length of the pipe previously marked on the outer surface (fig. 6)
- for the entire depth of the socket as far as the internal shoulder (fig.7)

6) Fully insert the pipe into the fitting immediately and without any rotation. Only after this operation will it be possible to slightly rotate both ends (max. 1/4 of a turn between pipe and fitting). This rotation movement will render the layer of applied solvent cement more uniform (fig. 8)

7) The pipe must be inserted in the fitting as soon and as quick as possible (after no more than 20-25 seconds is recommended). Depending on the external diameter of the pipe and, as a result, possible handling difficulties, the insertion of the pipe into the fitting must be carried out:

- manually by one person for external diameters < 90 mm.
- manually by two people for external diameters from d 90 to d < 160 mm.
- using mechanical pipe-pullers for external diameters > 160 mm.

8) Immediately after fully inserting the pipe in the fitting, apply pressure to the joined parts for a few seconds. Then use crepe paper or a clean cloth to remove any excess solvent cement from the outer surfaces, and from internal surfaces where possible (fig. 9).

9) Solvent cement setting: the joined parts must be left to stand in order to allow the solvent cement to set naturally without generating any unnecessary stress. The setting time depends on the amount of stress that the joint will be placed under.

In particular, the following minimum setting times must be respected according to the ambient temperature:

- before handling the joint:

- from 5 to 10 minutes for ambient T. >10°C
- from 15 to 20 minutes for ambient T. <10°C

- for repair joints on pipes of any size or pressure not subject to hydraulic testing:

- 1 hour for each atm of applied pressure

- for joints in pipes and fittings of any diameter subject to pressure testing up to PN 16:

- minimum 24 hours

The solvent cement setting times indicated are valid at ambient temperature (approx. 25°C.). For particular climatic conditions (humidity, temperature, etc...), we recommend you contact our technical services department and/or the solvent cement manufacturer for more information (fig. 10 and 11).

Fig. 6

Fig. 7


Fig.8

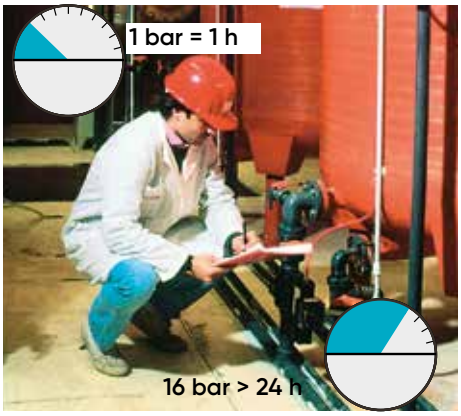


Fig.11

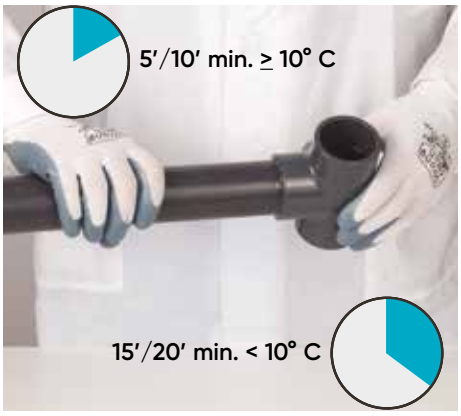
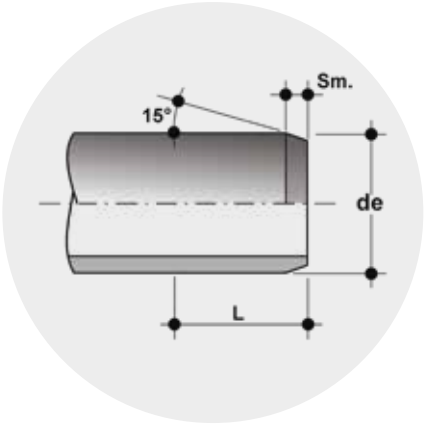


Fig.10


Fig.9

Insertion, solvent welding and chamfer length



External diameter de (mm)		Solvent welding length L(mm)		Chamfer Sm (mm)
Metric series de (mm)	BS Series (inch)	Metric series	BS series	
16	3/8"	14	14.5	
20	1/2"	16	16.5	1.5
25	3/4"	18.5	19.5	3
32	1"	22	22.5	3
40	1" 1/4	26	27	3
50	1" 1/2	31	30	3
63	2"	37.5	36	5
75	2"1/2	43.5	43.5	5
90	3"	51	50.5	5
110	4"	61	63	5
125	-	68.5	-	5
140	5"	76	76	5
160	6"	86	90	5
180	-	96	-	5÷6
200	-	106	-	5÷6
225	8"	118.5	115.5	5÷6
250	-	131	-	5÷6
280	10"	146	142.5	5÷6
315	12"	163.5	168	5÷6

Characteristics and dimensions of brushes- applicators

External diameter		Type and size of brush or applicator
de (mm)	(inches)	
16 - 25	3/8" - 3/4"	Round (8 - 10 mm)
32 - 63	1" - 2"	Round (20 - 25 mm)
75 - 160	2" 1/2 - 6"	Rectangular / round (45 - 50 mm)
>160	>6"	Rectangular / cylindrical (45 - 50 mm)
>160 - 315	>6" - 12"	Rectangular / Cylindrical (60 - 65 mm)

Warnings

•In the case where the external diameter of the pipe and the internal diameter of the fitting are at opposite extremes of their tolerance values, the dry pipe cannot be inserted in the dry socket of the fitting. Insertion will only be possible after having applied the Cleaner and Solvent Cement to both parts to be joined.

• The solvent cement is manufactured from the same PVC resin used for the production of the pipes, fittings and valves. Unless otherwise specified, the solvent cement used on the surfaces to join must also be usable with the following tolerances:

- Maximum interference 0.2 mm,

- Maximum clearance 0.6 mm.

• When using the Cleaner and Solvent Cement, the following precautions should be adopted:

- Use gloves and safety glasses to protect hands and eyes,

- Use the cleaner and solvent cement in a working environment with sufficient ventilation to avoid the formation of pockets of air containing concentrations of evaporated solvent, which can irritate the respiratory tract and eyes,

- Due to the volatile nature of the solvents in the cleaner and cement, the containers must be closed immediately after use,

- Solvents in the gaseous phase tend to form flammable mixtures. Therefore, remove any ignition sources such as welding operations, accumulation of electrostatic charges, etc. from the work area, and do not smoke. In all cases, it is advisable to adhere strictly to the solvent cement manufacturer's warnings written on the packaging,

- In order to prevent a deterioration in the performance of the cleaner and solvent cement, the joining operations should be carried out within an ambient temperature range of between + 5 and + 40° C.

• The amount of solvent cement used on the joints depends on a number of factors (environmental conditions, pipe size, cement viscosity, operator experience, etc.) which are often difficult to quantify. In this respect, Table “Rigid PVC-C pipes and fittings. Theoretical solvent cement consumption” reports the approximate quantities of cement normally used for joining various diameter pipes and fittings.

• After having completed all the joints and prior to putting the lines into service, make sure that the insides of the pipes and fittings are completely free of any solvent traces/vapours. This will prevent contamination of the fluids conveyed.

• Table “Most common defects” reports the most common types of defect found if the correct solvent welding procedure is not followed.

Rigid PVC-U pipes and fittings. Theoretical solvent cement consumption

Pipe/Fitting diameter		Number of joints per 1 kg of solvent cement
d (mm)	d (inches)	
16	3/8"	550
20	1/2"	500
25	3/4"	450
32	1"	400
40	1" 1/4	300
50	1" 1/2	200
63	2"	140
75	2"1/2	90
90	3"	60
110	4"	40
125	-	30
140	5"	25
160	6"	15
180	-	12
200	-	10
225	8"	6
250	-	4
280	10"	2
315	12"	2

Most common defects

Solvent cement too fluid (incorrect diluent addition)	
Immediate effect	Solvent weld failure
Consequence	Joint separation or leaks from between the pipe and fitting
Excess solvent cement	
Immediate effect	Internal and external runs beyond the joint zone
Consequence	Weakening of the outer surface of the joint area and formation of bubbles with micro-cracks/sources of fracture in the base material
Excessively dense solvent cement due to evaporated solvent	
Immediate effect	Solvent weld failure
Consequence	Joint separation or leaks from between the pipe and fitting. Possible surface cracking triggering cracks in the base material
Insufficient and/or incorrect distribution of solvent cement	
Immediate effect	Solvent weld failure or local weakness
Consequence	Joint separation or leaks from between the pipe and fitting
Incorrect pipe insertion (incomplete, excessive, misaligned)	
Immediate effect	Imperfect joint
Consequence	Transmission of mechanical stresses from the pipe to the fitting and/or leaks from the joint
Impurities and/or humidity on the surfaces of the parts to join	
Immediate effect	Imperfect joint.
Consequence	Joint separation or leaks (fluid seepage) from between the pipe and fitting

Instructions for installing threaded joints

To ensure the hydraulic seal of the junction of fittings and valves with threaded ends, it is advisable to carry out the following operations:

1. Start winding the PTFE sealing tape on the outer side of the threaded male end taking care not to obstruct the passage hole of the pipe, fitting or valve (fig. 1);

2. Complete the first winding layer by turning the tape clockwise until the thread root is reached. It is recommended to keep the tape in tension throughout the operation (fig. 2).

3. Press on the crests of the thread to ensure that the tape adheres perfectly to the support;

4. Increase the thickness of the PTFE layer, continuing to apply the tape in tension by rotating it clockwise until the optimal level is reached (fig. 3);

5. Connect the male end previously sealed with the female one and proceed manually by screwing the two elements;

6. Ensure that the PTFE layer is not removed during screwing, as it would compromise the hydraulic seal of the joint;

7. Complete the screwing of the two ends using the entire length of the thread with the help of a band wrench or similar;

8. Avoid excessive tightening of the elements, as it could damage the threads or cause stress to the elements themselves.

Fig. 1

Fig.2

Fig.3

Recommendations

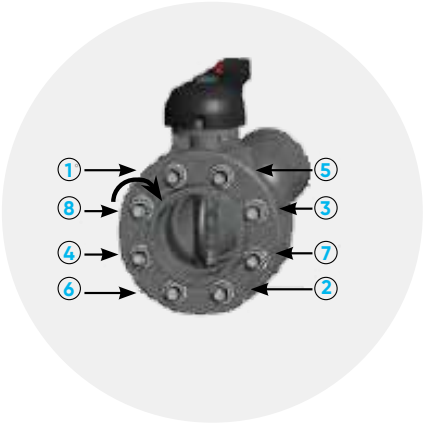
For proper installation it is recommended to use only unsintered PTFE sealing tape. The use of materials such as hemp, down or paints normally used to carry out the hydraulic seal on metal threads is absolutely to be avoided.

Warnings

Avoid the use of threaded joints in the following cases:

- highly critical applications, such as conveying chemically aggressive or toxic fluids,
- in the presence of medium or high pressures. It is advisable in this case to use glued, hot welded or flanged joints,
- plants subject to mechanical and/or thermal stresses such as water hammer, strong thermal excursions, bending, misalignments and transverse stresses that can cause an early breakage of the threaded joint,
- coupling between elements with excessive mutual distance.

Instructions for installing flanged joints



To ensure the correct installation of the flanged components, it is advisable to carry out the following operations:

1. insert any free flange on the pipe, before installing the collar;

2. in the case of a fixed flange, check the correct alignment of the drilling with the counter-flange;

3. check that the positioning of the counterflanges takes into account the dimensions of the face-to-face gauge of the components;

4. insert the flat seal between the collars (unnecessary passage for butterfly valves) making sure that the sealing surfaces of the flanges to be welded are not separated by an excessive distance, as this would cause compression of the same;

5. proceed with the gluing or welding of the fixed flanges or the collar (in the case of free flanges) following the welding or gluing instructions provided by FIP;

6. insert all bolts, washers and nuts;

7. once the cooling time is over, tighten the bolts following the "cross" order (fig.1);

8. complete the tightening of the bolts with a torque wrench until the tightening torques shown in the table are reached.

Tightening torque

Tightening torques of bolts and nuts to achieve sealing with PVC-U or PVC-C flanges with EPDM/FKM/NBR seals during the pressure test (1.5 x PN and water at 20°C),

DN	40	50	65	80	100	125	150	200	250	300	350	400
Nm	9	12	15	18	20	35	40	55	70	70	75	75

It should be noted that:

- the use of coated metal or fiberglass flanges can allow the application of higher tightening torques, as long as it does not exceed the elasto-plastic limit of the material,
- the use of elastomeric sealing materials other than those listed in the table above may require slightly higher tightening torques,
- FIP always recommends the use of suitably sized washers for any bolts used in the coupling flange.

Minimum bolt length

For flanged butterfly valves	
DN	**Lmin**
40	M 16x150
50	M 16x150
65	M 16x170
80	M 16x180
100	M 16x180
125	M 16x210
150	M 20x240
200	M 20x260
250	M 20x310
300	M 20x340
350	M 20x360
400	M 24x420

For flanging pipes by means of free flanges		
d	**DN**	**L min**
20	15	M 12x70
25	20	M 12x70
32	25	M 12x70
40	32	M 16x85
50	40	M 16x85
63	50	M 16x95
75	65	M 16x95
90	80	M 16x105
110	100	M 16x105
125	125	M 16x115
140	125	M 16x120
160	150	M 20x135
200	200	M 20x140
225	200	M 20x140
250	250	M 20x150
280	250	M 20x160
315	300	M 20x180
355	350	M 20x180
400	400	M 22x180

Forsheda ring installation instructions

- The assembly of PVC-U pipes with FORSHEDA 601 POWER-LOCK gasket is faster and less tiring than with traditional installations
- The coupling does not require the use of equipment, it is sufficient to lubricate the pipe mouth and the gasket before proceeding with the insertion.
- To further facilitate the work, the VDA pipes are provided with a marking to indicate the correct insertion depth.

Recommendations

It is recommended to use a brush for better lubrication.
Insert the male to the depth indicated by the marking.

Underground installation instructions

- The backfill is made manually up to half the diameter of the pipe and then compacted, simply by walking on it with your feet (Fig. 1).
- The backfill up to the upper pipe generatrix is done manually and compacted again with the feet (Fig. 2).
- A 150mm machine compacted layer can then be added, but not directly onto the upper pipe generatrix (Fig.3).
- The backfill up to 150 mm above the upper generatrix of the pipe can be carried out in a single event when material such as sand or loose and screened soil is used (Fig. 4).
- The spoil material for the remaining backfill can be used compacted in layers no thicker than 250 mm, as long as they are not compacted directly above the pipe until reaching 300 mm in height from the upper generatrix of the pipe (Fig. 5).
- The remaining backfill can be completed and compacted according to the needs of the surface finish (Fig. 6).

Fig. 1 - Layer of filling material compacted by hand up to the middle of the pipe.

Fig. 2 - Layer of filling material compacted by hand up to the upper pipe generatrix.

Fig. 3 - Layer of filling material up to 150 mm compacted by machine.

Fig. 1

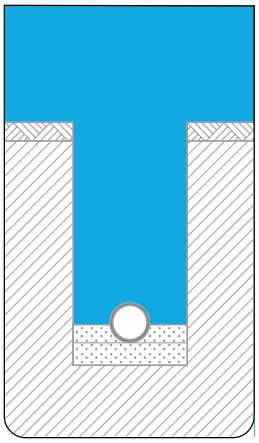


Fig. 2

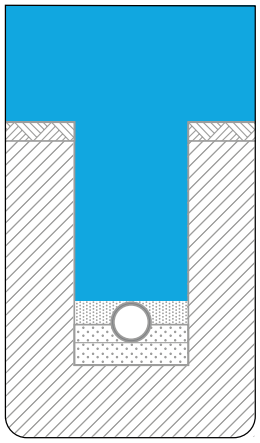


Fig. 3

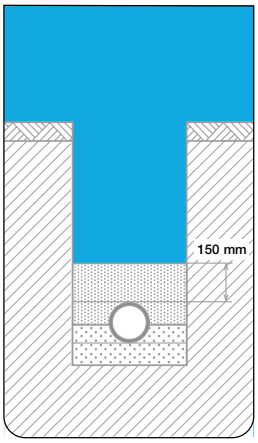


Fig. 4 - Backfill up to 150 mm above the upper generatrix of the pipe in a single event if it is used as a loose and screened sand or soil material.

Fig. 5 - Backfill with spoil material in layers no thicker than 250 mm.

Fig. 6 - Total backfill with spoil material in layers depending on the surface finish requirements.

Fig. 4

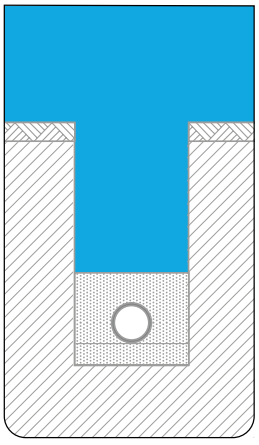


Fig. 5

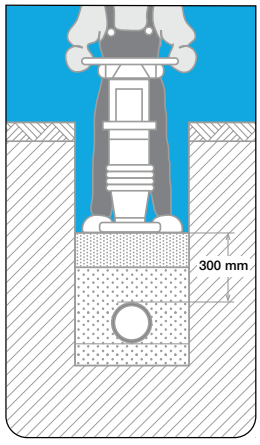
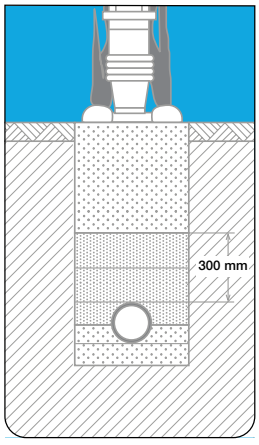


Fig. 6



Main properties
PVC-U

Properties of PVC-U		Benefits
Thermal resistance		• Service range 0-60°C (see pressure/temperature regression bend)
Low surface roughness		• High flow coefficients (extremely smooth internal walls) • Pressure drop constant over time • Low risk of stoppages due to scaling • Reduced transfer of material to the transported fluid
Chemical resistance		• Good chemical resistance for conveying acids and alkalis, paraffin/aliphatic hydrocarbons and saline solutions.
Abrasion resistance		• Extremely low operating costs due to its long service life
Insulating		• Non-conductive (immune to galvanic corrosion) • No condensation problems • Minimum heat loss
Linear thermal expansion coefficients		• Reduced need for supports and expansion joints, resulting in considerable advantages in terms of plant design
Easy to join (solvent weld sockets)		• Reduced installation costs thanks to the "solvent weld" joint obtained using a suitable solvent cement
Fire behaviour		• Good resistance to combustion also due to the presence of self-extinguishing chlorine
Good mechanical resistance		• PVC-U satisfies the need to provide adequate mechanical strength and complies with the requirements of industrial plant design

Correspondence between nominal pressure and ring stiffness

Lareter PVC pressure pipe can be suitable for drain back fluids. In this case the mechanical quantity is: Ring Rigidity SN (KN/m^2)

PN (bar)	6	10	12,5	16	20
SN (KN/m^2)	4	16	32	61	99

Ease of coupling

To overcome the difficulties in installing fittings in pipes "dry", LARETER has renewed all the equipment for the extrusion of pipes from 16 mm to 90 mm diameter to produce PVC PIPES of GUARANTEED QUALITY with tighter tolerances (external diameter, ovalization) in order to improve coupling with the fittings of any manufacturer.

External diameter			**Ovalisation PN 6**			**Ovalisation PN 10/16**		
Øe O/D	**Norm**	**Lareter**	**Øe O/D**	**Norm**	**Lareter**	**Øe O/D**	**Norm**	**Lareter**
(mm)	**(mm)**	**(mm)**	**(mm)**	**(mm)**	**(mm)**	**(mm)**	**(mm)**	**(mm)**
20	20-20,20	20-20,10	20	-	-	20	0,50	0,45
25	25-25,20	25-25,10	25	-	-	25	0,50	0,45
32	32-32,20	32-32,10	32	-	-	32	0,50	0,40
40	40-40,20	40-40,10	40	1,40	0,80	40	0,50	0,40
50	50-50,20	50-50,10	50	1,40	0,80	50	0,60	0,50
63	63-63,30	63-63,15	63	1,50	0,90	63	0,80	0,70
75	75-75,30	75-75,15	75	1,60	1,00	75	0,90	0,70
90	90-90,30	90-90,15	90	1,80	1,20	90	1,10	0,90

ISO PIPE

LARETER

PRESSURE PIPE

aliaxis

ISO PIPE

Pressure pipes for joint system by cold chemical welding (gluing through the use of suitable WELD-ON adhesive and detergent primer) or FORSHEDA 601 POWERLOCK® pre-inserted and locked gasket joint.

Lareter rigid PVC pipes for pressure pipes are guaranteed by the certifications issued by IIP, CSTB, DVGW, WRAS and IMO.

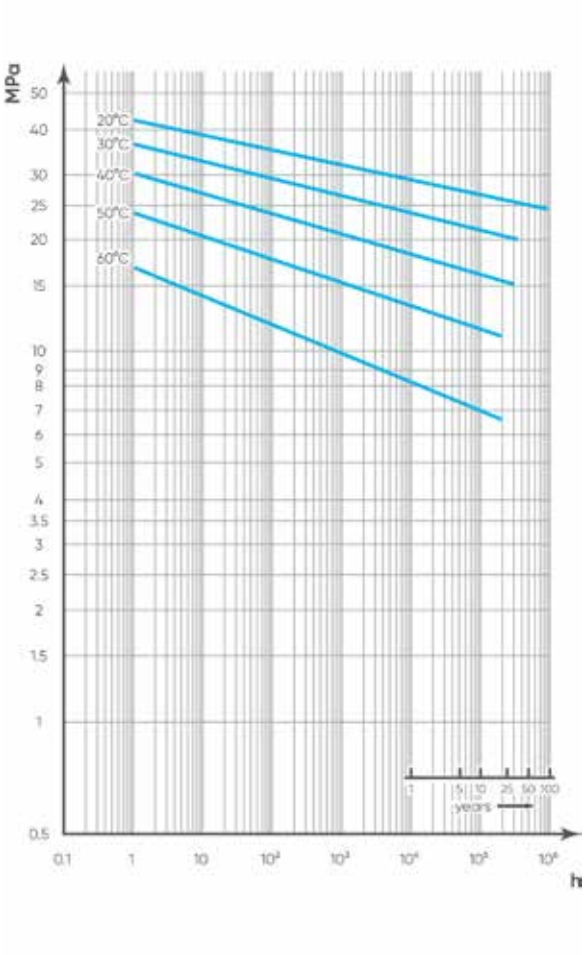
PRESSURE PIPE

Technical specifications	
Size range	d 16 - d 500 (mm)
Nominal pressure	PN 6-10-12,5-16-20-25 with water at 20° C
Temperature range	0 °C ÷ 60 °C
Coupling standards	**Solvent welding:** EN ISO 15493, EN ISO 1452, DIN 8061/2. **Coupling:** Forsheda 601 POWER-LOCK ® **Gasket**
Reference standards	**Construction criteria:** EN ISO 15493, EN ISO 1452, DIN 8061/2
	Test methods and requirements: EN ISO 15493, EN ISO 1452, DIN 8061/2
	Installation criteria: DVS 2204, DVS 2221, UNI 11242, EN ISO 1452, DIN 8061/2
Pipe material	PVC-U dark grey RAL 7011

TECHNICAL DATA

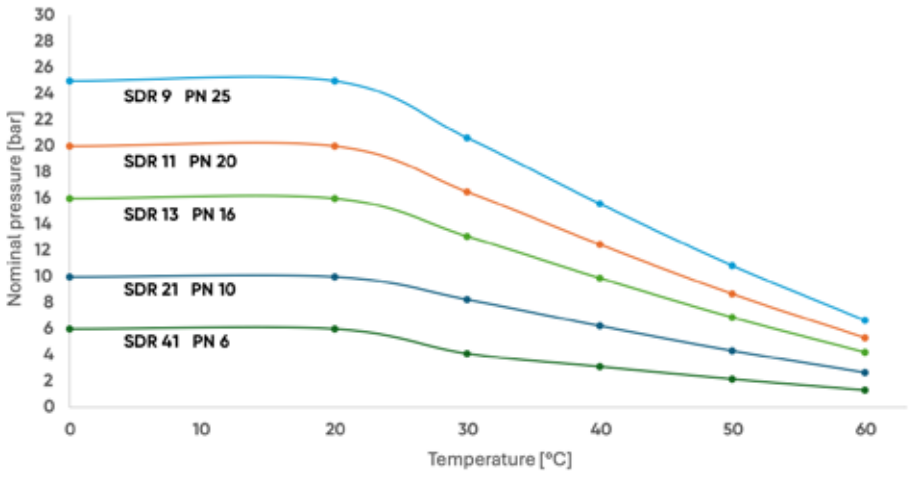
REGRESSION CURVES FOR PVC- U

Regression coefficients according to EN ISO 1452 and EN ISO 15493 for MRS (minimum) values = 25 N/mm² (MPa) (PVC-U 250 classification).

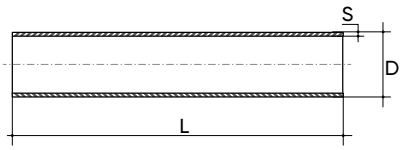


PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and non-hazardous fluids for which the material is classified as CHEMICALLY RESISTANT (life expectancy 25 years). In other cases, a reduction of the nominal pressure PN is required.



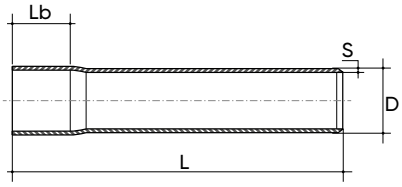
DIMENSIONS



PVC-U PN6 Pressure pipe plain end UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

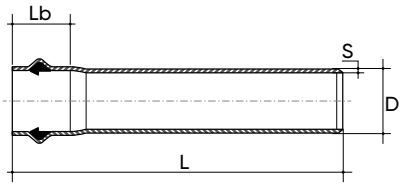
D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN6 Smooth Code
40	1.5	0.29	275	PIPEV2604006L
50	1.6	0.39	194	PIPEV3305006L
63	2	0.60	123	PIPEV3306306L
75	2.3	0.83	87	PIPEV3307506L
90	2.8	1.15	96	PIPEV3309006L
110	2.7	1.42	57	PIPEV4111006L
125	3.1	1.86	51	PIPEV4112506L
140	3.5	2.36	45	PIPEV4114006L
160	4	3.08	33	PIPEV4116006L
180	4.4	3.78	28	PIPEV4118006L
200	4.9	4.66	20	PIPEV4120006L
225	5.5	5.89	18	PIPEV4122506L
250	6.2	7.31	12	PIPEV4125006L
280	6.9	9.12	11	PIPEV4128006L
315	7.7	11.45	9	PIPEV4131506L
355	8.7	14.71	6	PIPEV4135506L
400	9.8	18.45	5	PIPEV4140006L
500	12.3	28.82	2	PIPEV4150006L



PVC-U PN6 Pressure pipe solvent socket UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN6 solvent socket Code
40	1.5	70	0.29	275	PIPEV2604016L
50	1.6	85	0.39	194	PIPEV3305016L
63	2	90	0.60	123	PIPEV3306316L
75	2.3	105	0.83	87	PIPEV3307516L
90	2.8	130	1.15	96	PIPEV3309016L
110	2.7	140	1.42	57	PIPEV4111016L
125	3.1	150	1.86	51	PIPEV4112516L
140	3.5	165	2.36	45	PIPEV4114016L
160	4	175	3.08	33	PIPEV4116016L
180	4.4	180	3.78	28	PIPEV4118016L
200	4.9	200	4.66	20	PIPEV4120016L
225	5.5	215	5.89	18	PIPEV4122516L
250	6.2	200	7.31	12	PIPEV4125016L
280	6.9	200	9.12	11	PIPEV4128016L
315	7.7	240	11.45	9	PIPEV4131516L
355	8.7	280	14.71	6	PIPEV4135516L
400	9.8	280	18.45	5	PIPEV4140016L
500	12.3	350	28.82	2	PIPEV4150016L

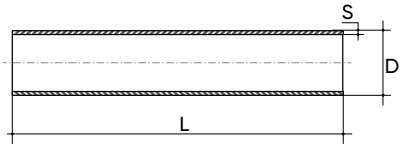


Pressure pipe PVC-U PN6 UNI EN ISO 1452-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN6 coupling Code
40*	1.5	100	0.29	275	PIPEV26040S6L
50*	1.6	100	0.39	194	PIPEV26050S6L
63	2	110	0.60	123	PIPEV33063F6L
75	2.3	120	0.83	87	PIPEV33075F6L
90	2.8	130	1.15	96	PIPEV33090F6L
110	2.7	130	1.42	57	PIPEV41110F6L
125	3.1	150	1.86	51	PIPEV41125F6L
140	3.5	160	2.36	45	PIPEV41140F6L
160	4	165	3.08	33	PIPEV41160F6L
180*	4.4	170	3.78	28	PIPEV41180S6L
200	4.9	180	4.66	20	PIPEV41200F6L
225	5.5	200	5.89	18	PIPEV41225F6L
250	6.2	210	7.31	12	PIPEV41250F6L
280	6.9	210	9.12	11	PIPEV41280F6L
315	7.7	230	11.45	9	PIPEV41315F6L
355	8.7	250	14.71	6	PIPEV41355F6L
400	9.8	250	18.45	5	PIPEV41400F6L
500	12.3	255	28.82	2	PIPEV41500F6L

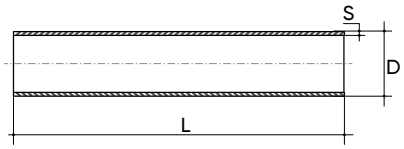
* Rubber ring



PVC-U PN10 Pressure pipe plain end UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

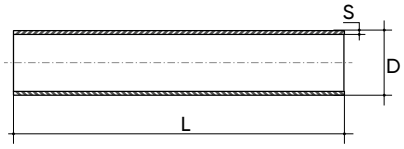
D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN10 Smooth Code
32	1.6	0.24	449	PIPEV2103206L
40	1.9	0.36	275	PIPEV2104006L
50	2.4	0.56	194	PIPEV2105006L
63	3	0.89	123	PIPEV2106306L
75	3.6	1.24	87	PIPEV2107506L
90	4.3	1.78	96	PIPEV2109006L
110	4.2	2.15	57	PIPEV2611006L
125	4.8	2.77	51	PIPEV2612506L
140	5.4	3.54	45	PIPEV2614006L
160	6.2	4.61	33	PIPEV2616006L
180	6.9	5.78	28	PIPEV2618006L
200	7.7	7.16	20	PIPEV2620006L
225	8.6	8.99	18	PIPEV2622506L
250	9.6	11.14	12	PIPEV2625006L
280	10.7	13.88	11	PIPEV2628006L
315	12.1	17.61	9	PIPEV2631506L
355	13.6	22.33	6	PIPEV2635506L
400	15.3	28.23	5	PIPEV2640006L
500	19.1	43.91	2	PIPEV2650006L



PVC-U PN10 Pressure pipe plain end NF EN 1452

Pressure pipe PVC-U, Grey RAL 7011, length 6m

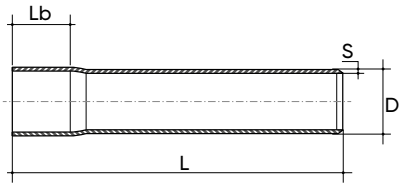
D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN10 Smooth Code
63	3	0.89	123	PIPEV2106306L
75	3.6	1.24	87	PIPEV2107506L
90	4.3	1.78	96	PIPEV2109006L
110	5.3	2.67	57	PIPEV2111006L
125	6	3.41	51	PIPEV2112506L
140	6.1	3.94	45	PIPEV2114006L
160	6.2	4.61	33	PIPEV2616006L
200	7.7	7.16	20	PIPEU2620006L
225	8.6	8.99	18	PIPEU2622506L
250	9.6	11.14	12	PIPEU2625006L
315	12.1	17.61	9	PIPEU2631506L
400	15.3	28.22	5	PIPEU2640006L



PVC-U PN10 Pressure pipe plain end DIN -8061-62

Pressure pipe PVC-U, Grey RAL 7011, length 6m

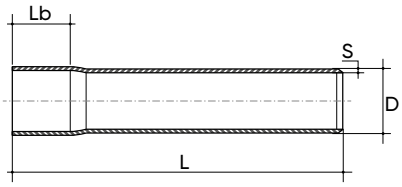
D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN10 Smooth Code
32	1.6	0.24	449	PIPEV2103206L
40	1.9	0.36	275	PIPEV2104006L
50	2.4	0.56	194	PIPEV2105006L
63	3.0	0.89	123	PIPEV2106306L
75	3.6	1.24	87	PIPEV2107506L
90	4.3	1.78	96	PIPEV2109006L
110	5.3	2.67	57	PIPEV2111006L
125	6.0	3.41	51	PIPEV2112506L
140	6.7	4.33	45	PIPEV2114006L
160	7.7	5.67	33	PIPEV2116006L
180	8.6	7.32	28	PIPEV2118006L
200	9.6	8.81	20	PIPEV2120006L
225	10.8	11.13	18	PIPEV2122506L
250	11.9	13.62	12	PIPEV2125006L
280	13.4	17.19	11	PIPEV2128006L
315	15.0	21.59	9	PIPEV2131506L
355	16.9	27.11	6	PIPEV2135506L
400	19.1	34.77	5	PIPEV2140006L



PVC-U PN10 Pressure pipe solvent socket UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

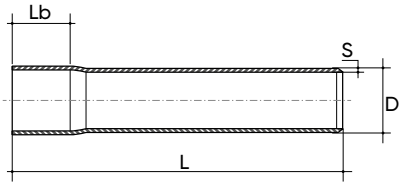
D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 solvent socket Code
32	1.6	65	0.24	449	PIPEV21032I6L
40	1.9	70	0.36	275	PIPEV21040I6L
50	2.4	85	0.56	194	PIPEV21050I6L
63	3	90	0.89	123	PIPEV21063I6L
75	3.6	105	1.24	87	PIPEV21075I6L
90	4.3	130	1.78	96	PIPEV21090I6L
110	4.2	140	2.15	57	PIPEV26110I6L
125	4.8	150	2.77	51	PIPEV26125I6L
140	5.4	165	3.54	45	PIPEV26140I6L
160	6.2	175	4.61	33	PIPEV26160I6L
180	6.9	180	5.78	28	PIPEV26180I6L
200	7.7	200	7.16	20	PIPEV26200I6L
225	8.6	215	8.99	18	PIPEV26225I6L
250	9.6	200	11.14	12	PIPEV26250I6L
280	10.7	200	13.88	11	PIPEV26280I6L
315	12.1	240	17.61	9	PIPEV26315I6L
355	13.6	280	22.33	6	PIPEV26355I6L
400	15.3	280	28.23	5	PIPEV26400I6L
500	19.1	350	43.91	2	PIPEV26500I6L



PVC-U PN10 Pressure pipe solvent socket NF EN 1452

Pressure pipe PVC-U, Grey RAL 7011, length 6m

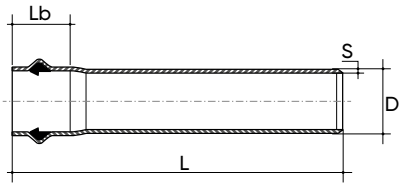
D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 solvent socket Code
63	3	90	0.89	123	PIPEV21063I6L
75	3.6	105	1.24	87	PIPEV21075I6L
90	4.3	130	1.78	96	PIPEV21090I6L
110	5.3	140	2.67	57	PIPEV21110I6L
125	6	150	3.41	51	PIPEV21125I6L
140	6.1	165	3.94	45	PIPEV21140I6L
160	6.2	175	4.61	33	PIPEV26160I6L
200	7.7	200	7.16	20	PIPEU26200I6L
225	8.6	215	8.99	18	PIPEU26225I6L
250	9.6	200	11.14	12	PIPEU26250I6L
315	12.1	240	17.61	9	PIPEU26315I6L
400	15.3	280	28.22	5	PIPEU26400I6L



PVC-U PN10 Pressure pipe solvent socket DIN-8061 - 62

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 solvent socket Code
32	1.6	65	0.24	449	PIPEV21032I6L
40	1.9	70	0.36	275	PIPEV21040I6L
50	2.4	85	0.56	194	PIPEV21050I6L
63	3	90	0.89	123	PIPEV21063I6L
75	3.6	105	1.24	87	PIPEV21075I6L
90	4.3	130	1.78	96	PIPEV21090I6L
110	5.3	140	2.67	57	PIPEV26110I6L
125	6	150	3.41	51	PIPEV26125I6L
140	6.7	165	4.33	45	PIPEV21140I6L
160	7.7	175	5.67	33	PIPEV21160I6L
180	8.6	180	7.32	28	PIPEV21180I6L
200	9.6	200	8.81	20	PIPEV21200I6L
225	10.8	215	11.13	18	PIPEV21225I6L
250	11.9	200	13.62	12	PIPEV21250I6L
280	13.4	200	17.19	11	PIPEV21280I6L
315	15	240	21.59	9	PIPEV21315I6L
355	16.9	280	27.11	6	PIPEV21355I6L
400	19.1	280	34.77	5	PIPEV21400I6L

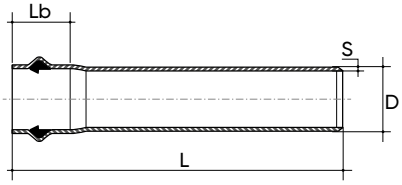


Pressure pipe PVC-U PN10 UNI EN ISO 1452-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 Forsheeda Code
40*	1.9	100	0.36	275	PIPEV21040S6L
50*	2.4	100	0.56	194	PIPEV21050S6L
63	3	110	0.89	123	PIPEV21063F6L
75	3.6	120	1.24	87	PIPEV21075F6L
90	4.3	130	1.78	96	PIPEV21090F6L
110	4.2	130	2.15	57	PIPEV26110F6L
125	4.8	150	2.77	51	PIPEV26125F6L
140	5.4	160	3.54	45	PIPEV26140F6L
160	6.2	165	4.61	33	PIPEV26160F6L
180	6.9	170	5.78	28	PIPEV26180S6L
200	7.7	180	7.16	20	PIPEV26200F6L
225	8.6	200	8.99	18	PIPEV26225F6L
250	9.6	210	11.14	12	PIPEV26250F6L
280	10.7	210	13.88	11	PIPEV26280F6L
315	12.1	230	17.61	9	PIPEV26315F6L
355	13.6	250	22.33	6	PIPEV26355F6L
400	15.3	250	28.23	5	PIPEV26400F6L
500	19.1	255	43.91	2	PIPEV26500F6L

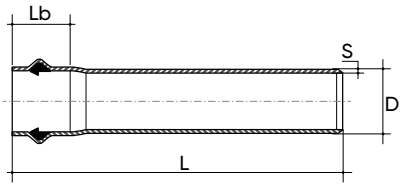
* Rubber ring



Pressure pipe PVC-U PN10 NF EN 1452 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 Forsheeda Code
63	3	110	0.89	123	PIPEV21063F6L
75	3.6	120	1.24	87	PIPEV21075F6L
90	4.3	130	1.78	96	PIPEV21090F6L
110	5.3	130	2.67	57	PIPEV21110F6L
125	6	150	3.41	51	PIPEV21125F6L
140	6.1	160	3.94	45	PIPEV21140F6L
160	6.2	165	4.61	33	PIPEV26160F6L
200	7.7	180	7.16	20	PIPEU26200F6L
225	8.6	200	8.99	18	PIPEU26225F6L
250	9.6	210	11.14	12	PIPEU26250F6L
315	12.1	230	17.61	9	PIPEU26315F6L
400	15.3	250	28.22	5	PIPEU26400F6L

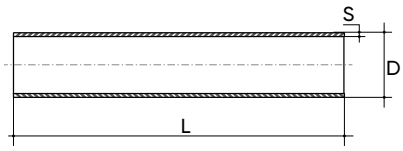


Pressure pipe PVC-U PN10 DIN-8061-62 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m plus solvent socket

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN10 Forsheeda Code
40*	1.9	100	0.36	275	PIPEV21040S6L
50*	2.4	100	0.56	194	PIPEV21050S6L
63	3	110	0.89	123	PIPEV21063F6L
75	3.6	120	1.24	87	PIPEV21075F6L
90	4.3	130	1.78	96	PIPEV21090F6L
110	5.3	130	2.67	57	PIPEV26110F6L
125	6	150	3.41	51	PIPEV26125F6L
140	6.7	160	4.33	45	PIPEV21140F6L
160	7.7	165	5.67	33	PIPEV21160F6L
180*	8.6	170	7.32	28	PIPEV21180S6L
200	9.6	180	8.81	20	PIPEV21200F6L
225	10.8	200	11.13	18	PIPEV21225F6L
250	11.9	210	13.62	12	PIPEV21250F6L
280	13.4	210	17.19	11	PIPEV21280F6L
315	15	230	21.59	9	PIPEV21315F6L
355	16.9	250	27.11	6	PIPEV21355F6L
400	19.1	250	34.77	5	PIPEV21400F6L

* Rubber ring

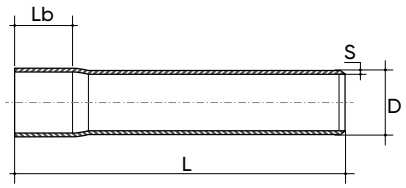


PVC-U PN12.5 Pressure pipe plain end UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN12.5 Smooth Code
25	1.5	0.18	757	PIPEV1702506L
32	1.9	0.28	449	PIPEV1703206L
50	3.0*	0.68	194	PIPEV1705006L
63	3.8*	1.08	123	PIPEV1706306L
75	4.5*	1.53	87	PIPEV1707506L
110	5.3	2.67	57	PIPEV2111006L
125	6	3.41	51	PIPEV2112506L
140	6.7	4.33	45	PIPEV2114006L
160	7.7	5.67	33	PIPEV2116006L
180	8.6*	7.32	28	PIPEV2118006L
200	9.6*	8.81	20	PIPEV2120006L
225	10.8*	11.13	18	PIPEV2122506L
250	11.9*	13.62	12	PIPEV2125006L
280	13.4*	17.18	11	PIPEV2128006L
315	15.0*	21.59	9	PIPEV2131506L
355	16.9*	27.11	6	PIPEV2135506L
400	19.1*	34.77	5	PIPEV2140006L

* Upon request

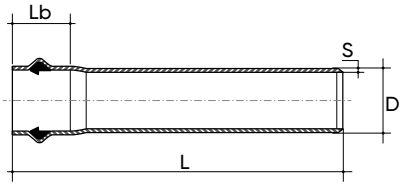


PVC-U PN12.5 Pressure pipe solvent socket UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	LB (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN12.5 solvent socket Code
25	40	1.5	0.18	757	PIPEV17025I6L
32	65	1.9	0.28	449	PIPEV17032I6L
50	85	3.0*	0.68	194	PIPEV17050I6L
63	90	3.8*	1.08	123	PIPEV17063I6L
75	105	4.5*	1.53	87	PIPEV17075I6L
110	140	5.3	2.67	57	PIPEV21110I6L
125	150	6	3.41	51	PIPEV21125I6L
140	165	6.7	4.33	45	PIPEV21140I6L
160	175	7.7	5.67	33	PIPEV21160I6L
180	180	8.6*	7.32	28	PIPEV21180I6L
200	200	9.6*	8.81	20	PIPEV21200I6L
225	215	10.8*	11.13	18	PIPEV21225I6L
250	200	11.9*	13.62	12	PIPEV21250I6L
280	200	13.4*	17.18	11	PIPEV21280I6L
315	240	15.0*	21.59	9	PIPEV21315I6L
355	280	16.9*	27.11	6	PIPEV21355I6L
400	280	19.1*	34.77	5	PIPEV21400I6L

* Upon request



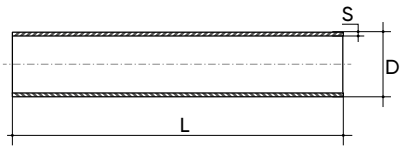
Pressure pipe PVC-U PN12.5 UNI EN ISO 1452-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	LB (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN12.5 solvent socket Code
110	130	5.3	2.67	57	PIPEV21110F6L
125	150	6	3.41	51	PIPEV21125F6L
140	160	6.7	4.33	45	PIPEV21140F6L
160	165	7.7	5.67	33	PIPEV21160F6L
180**	170	8.6*	7.32	28	PIPEV21180S6L
200	180	9.6*	8.81	20	PIPEV21200F6L
225	200	10.8*	11.13	18	PIPEV21225F6L
250	210	11.9*	13.62	12	PIPEV21250F6L
280	210	13.4*	17.18	11	PIPEV21280F6L
315	230	15.0*	21.59	9	PIPEV21315F6L
355	250	16.9*	27.11	6	PIPEV21355F6L
400	250	19.1*	34.77	5	PIPEV21400F6L

* Upon request

** Rubber ring

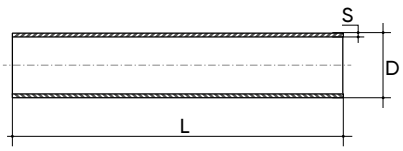


Pressure pipe PVC-U PN16 UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 smooth Code
20	1.5	0.14	1166	PIPEV1302006L
25	1.9	0.22	757	PIPEV1302506L
32	2.4	0.35	449	PIPEV1303206L
40	3	0.54	275	PIPEV1304006L
50	3.7	0.83	194	PIPEV1305006L
63	4.7	1.31	123	PIPEV1306306L
75	5.6	1.86	87	PIPEV1307506L
90	6.7	2.66	96	PIPEV1309006L
110	6.6	3.26	57	PIPEV1711006L
125	7.4	4.15	51	PIPEV1712506L
140	8.3	5.29	45	PIPEV1714006L
160	9.5	6.89	33	PIPEV1716006L
180	10.7	8.72	28	PIPEV1718006L
200	11.9	10.75	20	PIPEV1720006L
225	13.4	13.63	18	PIPEV1722506L
250	14.8	16.70	12	PIPEV1725006L
280	16.6	20.91	11	PIPEV1728006L
315	18.7	26.49	9	PIPEV1731506L
355	21.1*	33.31	6	PIPEV1735506L
400	23.7*	42.44	5	PIPEV1740006L
500	29.7*	63.6	2	PIPEV1750006L

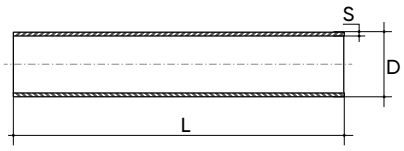
* Upon request



Pressure pipe PVC-U PN16 NF-EN 1452

Pressure pipe PVC-U, Grey RAL 7011, length 6m

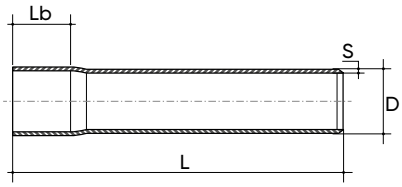
D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 smooth Code
32	2.4	0.35	449	PIPEV1303206L
40	3	0.54	275	PIPEV1304006L
50	3.7	0.83	194	PIPEV1305006L
63	4.7	1.31	123	PIPEV1306306L
75	5.6	1.86	87	PIPEV1307506L
90	6.7	2.66	96	PIPEV1309006L
110	8.1	3.94	57	PIPEV1311006L
125	9.2	5.07	51	PIPEV1312506L
140	9.3	5.86	45	PIPEV1714006L
160	9.5	6.89	33	PIPEV1716006L
200	11.9	10.75	20	PIPEV1720006L
225	13.4	13.63	18	PIPEV1722506L
250	14.8	16.70	12	PIPEV1725006L
315	18.7	26.49	9	PIPEV1731506L



Pressure pipe PVC-U PN16 DIN-8061-62

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 smooth Code
20	1.5	0.14	1166	PIPEV1302006L
25	1.9	0.216	757	PIPEV1302506L
32	2.4	0.35	449	PIPEV1303206L
40	3	0.54	275	PIPEV1304006L
50	3.7	0.83	194	PIPEV1305006L
63	4.7	1.31	123	PIPEV1306306L
75	5.6	1.86	87	PIPEV1307506L
90	6.7	2.66	96	PIPEV1309006L
110	8.1	3.94	57	PIPEV1311006L
125	9.2	5.07	51	PIPEV1312506L
140	10.3	6.43	45	PIPEV1314006L
160	11.8	8.40	33	PIPEV1316006L
200	14.7	13.06	20	PIPEV1320006L
225	16.6	16.53	18	PIPEV1322506L
250	18.4	20.37	12	PIPEV1325006L

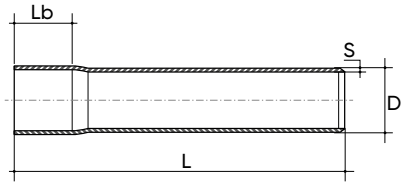


PVC-U PN16 Pressure pipe solvent socket UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
20	37	1.5	0.14	1166	PIPEV13020I6L
25	40	1.9	0.22	757	PIPEV13025I6L
32	65	2.4	0.35	449	PIPEV13032I6L
40	70	3	0.54	275	PIPEV13040I6L
50	85	3.7	0.83	194	PIPEV13050I6L
63	90	4.7	1.31	123	PIPEV13063I6L
75	105	5.6	1.86	87	PIPEV13075I6L
90	130	6.7	2.66	96	PIPEV13090I6L
110	140	6.6	3.26	57	PIPEV17110I6L
125	150	7.4	4.15	51	PIPEV17125I6L
140	165	8.3	5.29	45	PIPEV17140I6L
160	175	9.5	6.89	33	PIPEV17160I6L
180	180	10.7	8.72	28	PIPEV17180I6L
200	200	11.9	10.75	20	PIPEV17200I6L
225	215	13.4	13.63	18	PIPEV17225I6L
250	200	14.8	16.70	12	PIPEV17250I6L
280	200	16.6	20.91	11	PIPEV17280I6L
315	240	18.7	26.49	9	PIPEV17315I6L
355	280	21.1*	33.31	6	PIPEV17355I6L
400	280	23.7*	42.44	5	PIPEV17400I6L
500	350	29.7*	63.6	2	PIPEV17500I6L

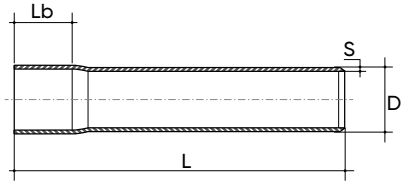
* Upon request



PVC-U PN16 Pressure pipe solvent socket NF.EN 1452

Pressure pipe PVC-U, Grey RAL 7011, length 6m

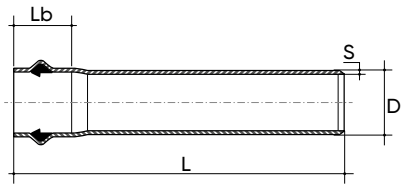
D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
32	65	2.4	0.35	449	PIPEV13032I6L
40	70	3	0.54	275	PIPEV13040I6L
50	85	3.7	0.83	194	PIPEV13050I6L
63	90	4.7	1.31	123	PIPEV13063I6L
75	105	5.6	1.86	87	PIPEV13075I6L
90	130	6.7	2.66	96	PIPEV13090I6L
110	140	8.1	3.94	57	PIPEV13110I6L
125	150	9.2	5.07	51	PIPEV13125I6L
140	165	9.3	5.86	45	PIPEV17140I6L
160	175	9.5	6.89	33	PIPEV17160I6L
200	200	11.9	10.75	20	PIPEV17200I6L
225	215	13.4	13.63	18	PIPEV17225I6L
250	200	14.8	16.70	12	PIPEV17250I6L
315	240	18.7	26.49	9	PIPEV17315I6L



PVC-U PN16 Pressure pipe solvent socket DIN-8061-62

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
20	37	1.5	0.14	1166	PIPEV13020I6L
25	40	1.9	0.216	757	PIPEV13025I6L
32	65	2.4	0.35	449	PIPEV13032I6L
40	70	3	0.54	275	PIPEV13040I6L
50	85	3.7	0.83	194	PIPEV13050I6L
63	90	4.7	1.31	123	PIPEV13063I6L
75	105	5.6	1.86	87	PIPEV13075I6L
90	130	6.7	2.66	96	PIPEV13090I6L
110	140	8.1	3.94	57	PIPEV13110I6L
125	150	9.2	5.07	51	PIPEV13125I6L
140	165	10.3	6.43	45	PIPEV13140I6L
160	175	11.8	8.40	33	PIPEV13160I6L
200	200	14.7	13.06	20	PIPEV13200I6L
225	215	16.6	16.53	18	PIPEV13225I6L
250	200	18.4	20.37	12	PIPEV13250I6L



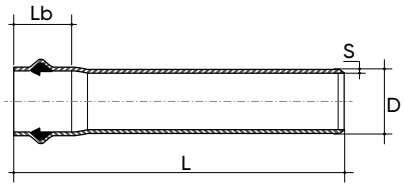
Pressure pipe PVC-U PN16 UNI EN ISO 1452-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
40**	100	3	0.54	275	PIPEV13040S6L
50**	100	3.7	0.83	194	PIPEV13050S6L
63	110	4.7	1.31	123	PIPEV13063F6L
75	120	5.6	1.86	87	PIPEV13075F6L
90	130	6.7	2.66	96	PIPEV13090F6L
110	130	6.6	3.26	57	PIPEV17110F6L
125	150	7.4	4.15	51	PIPEV17125F6L
140	160	8.3	5.29	45	PIPEV17140F6L
160	165	9.5	6.89	33	PIPEV17160F6L
180**	170	10.7	8.72	28	PIPEV17180S6L
200	180	11.9	10.75	20	PIPEV17200F6L
225	200	13.4	13.63	18	PIPEV17225F6L
250	210	14.8	16.70	12	PIPEV17250F6L
280	210	16.6	20.91	11	PIPEV17280F6L
315	230	18.7	26.49	9	PIPEV17315F6L
355	250	21.1*	33.31	6	PIPEV17355F6L
400	250	23.7*	42.44	5	PIPEV17400F6L
500	255	29.7*	63.6	2	PIPEV17500F6L

* Upon request

** Rubber ring

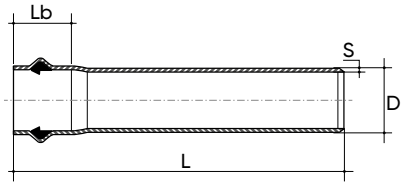


Pressure pipe PVC-U PN16 NF-EN 1452 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
40*	100	3	0.54	275	PIPEV13040S6L
50*	100	3.7	0.83	194	PIPEV13050S6L
63	110	4.7	1.31	123	PIPEV13063F6L
75	120	5.6	1.86	87	PIPEV13075F6L
90	130	6.7	2.66	96	PIPEV13090F6L
110	130	8.1	3.94	57	PIPEV13110F6L
125	150	9.2	5.07	51	PIPEV13125F6L
140	160	9.3	5.86	45	PIPEV17140F6L
160	165	9.5	6.89	33	PIPEV17160F6L
200	180	11.9	10.75	20	PIPEV17200F6L
225	200	13.4	13.63	18	PIPEV17225F6L
250	210	14.8	16.70	12	PIPEV17250F6L
315	230	18.7	26.49	9	PIPEV17315F6L

* Rubber ring

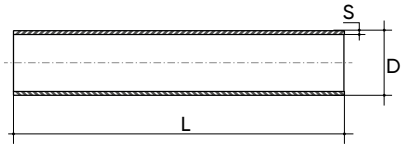


Pressure pipe PVC-U PN16 DIN-8061-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m plus solvent socket

D (mm)	Lb (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 16 solvent socket Code
40*	100	3	0.54	275	PIPEV13040S6L
50*	100	3.7	0.83	194	PIPEV13050S6L
63	110	4.7	1.31	123	PIPEV13063F6L
75	120	5.6	1.86	87	PIPEV13075F6L
90	130	6.7	2.66	96	PIPEV13090F6L
110	130	8.1	3.94	57	PIPEV13110F6L
125	150	9.2	5.07	51	PIPEV13125F6L
140	160	10.3	6.43	45	PIPEV13140F6L
160	165	11.8	8.40	33	PIPEV13160F6L
200	180	14.7	13.06	20	PIPEV13200F6L
225	200	16.6	16.53	18	PIPEV13225F6L
250	210	18.4	20.37	12	PIPEV13250F6L

* Rubber ring

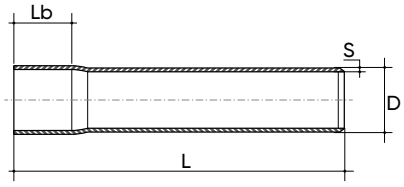


Pressure pipe PVC-U PN20 UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 20 smooth Code
16	1.5	0.109	Bulk	PIPEV1101606L
20	1.9*	0.169	1166	PIPEV1102006L
25	2.3*	0.26	757	PIPEV1102506L
32	2.9*	0.41	449	PIPEV1103206L
40	3.7*	0.65	275	PIPEV1104006L
50	4.6*	1.00	194	PIPEV1105006L
63	5.8*	1.58	123	PIPEV1106306L
75	6.8*	2.21	87	PIPEV1107506L
90	8.2*	3.19	96	PIPEV1109006L
110	8.1*	3.94	57	PIPEV1311006L
125	9.2*	5.07	51	PIPEV1312506L
140	10.3*	6.43	45	PIPEV1314006L
160	11.8*	8.40	33	PIPEV1316006L
200	14.7*	13.06	20	PIPEV1320006L
225	16.6*	16.53	18	PIPEV1322506L
250	18.4*	20.37	12	PIPEV1325006L

* Upon request

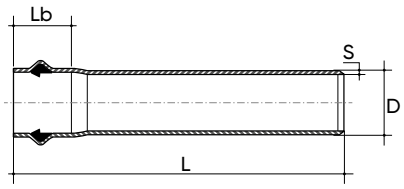


PVC-U PN20 Pressure pipe solvent socket UNI EN ISO 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN 20 solvent socket Code
16	1.5		0.109	Bulk	PIPEV11016I6L
20	1.9*	37	0.169	1166	PIPEV11020I6L
25	2.3*	40	0.26	757	PIPEV11025I6L
32	2.9*	65	0.41	449	PIPEV11032I6L
40	3.7*	70	0.65	275	PIPEV11040I6L
50	4.6*	85	1.00	194	PIPEV11050I6L
63	5.8*	90	1.58	123	PIPEV11063I6L
75	6.8*	105	2.21	87	PIPEV11075I6L
90	8.2*	130	3.19	96	PIPEV11090I6L
110	8.1*	140	3.94	57	PIPEV13110I6L
125	9.2*	150	5.07	51	PIPEV13125I6L
140	10.3*	165	6.43	45	PIPEV13140I6L
160	11.8*	175	8.40	33	PIPEV13160I6L
200	14.7*	200	13.06	20	PIPEV13200I6L
225	16.6*	215	16.53	18	PIPEV13225I6L
250	18.4*	200	20.37	12	PIPEV13250I6L

* Upon request

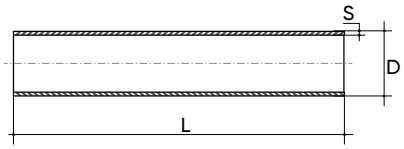


Pressure pipe PVC-U PN20 UNI EN ISO 1452-2 FORSHEDA 601 POWER-LOCK®

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN 20 solvent socket Code
40**	3.7*	100	0.65	275	PIPEV11040S6L
50**	4.6*	100	1.00	194	PIPEV11050S6L
63	5.8*	110	1.58	123	PIPEV11063F6L
75	6.8*	120	2.21	87	PIPEV11075F6L
90	8.2*	130	3.19	96	PIPEV11090F6L
110	8.1*	130	3.94	57	PIPEV13110F6L
125	9.2*	150	5.07	51	PIPEV13125F6L
140	10.3*	160	6.43	45	PIPEV13140F6L
160	11.8*	165	8.40	33	PIPEV13160F6L
200	14.7*	180	13.06	20	PIPEV13200F6L
225	16.6*	200	16.53	18	PIPEV13225F6L
250	18.4*	210	20.37	12	PIPEV13250F6L

* Upon request
** Rubber ring

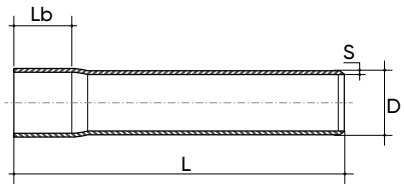


Pressure pipe PVC-U PN25 NF-EN 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN 25 smooth Code
16	1.8	0.13	Bulk	PIPEV0901606L
20	2.3	0.2	1166	PIPEV0902006L
25	2.8	0.30	757	PIPEV0902506L
32	3.6	0.49	449	PIPEV0903206L
40	4.5	0.77	275	PIPEV0904006L
50	5.6*	1.19	194	PIPEV0905006L
63	7.1*	1.89	123	PIPEV0906306L

* Upon request

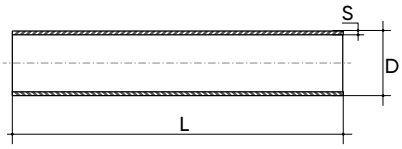


PVC-U PN25 Pressure pipe solvent socket NF-EN 1452-2

Pressure pipe PVC-U, Grey RAL 7011, length 6m

D (mm)	S (mm)	Lb (mm)	Weight (kg/m)	Qty x pallet	PN 25 solvent socket Code
16	1.8		0.13	Bulk	PIPEV09016I6L
20	2.3	37	0.2	1166	PIPEV09020I6L
25	2.8	40	0.30	757	PIPEV09025I6L
32	3.6	65	0.49	449	PIPEV09032I6L
40	4.5	70	0.77	275	PIPEV09040I6L
50	5.6*	85	1.19	194	PIPEV09050I6L
63	7.1*	90	1.89	123	PIPEV09063I6L

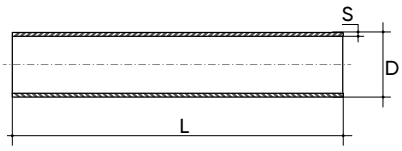
* Upon request



Pressure pipe PVC-U PN9/CLASS C BS-EN 1452, BS 3505

Pressure pipe PVC-U, Grey RAL 7011, length 6m

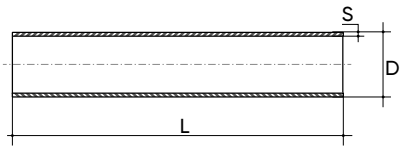
D (inches)	S (mm)	Weight (kg/m)	Qty x pallet	PN9 CLASS C Code
2"	2.5	0.73	252	PIPEVBSC20006L
2"1/2	3	1.22	87	PIPEVBSC21206L
3"	3.5	1.48	96	PIPEVBSC30006L
4"	4.5	2.42	67	PIPEVBSC40006L
5"	5.5	3.63	45	PIPEVBSC50006L
6"	6.6	5.20	30	PIPEVBSC60006L
8"	7.8	8.05	18	PIPEVBSC80006L



Pressure pipe PVC-U PN12/CLASS D BS-EN 1452, BS 3505

Pressure pipe PVC-U, Grey RAL 7011, length 6m

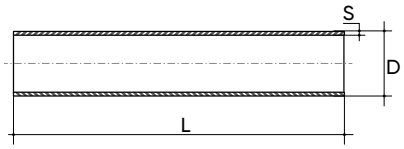
D (inches)	S (mm)	Weight (kg/m)	Qty x pallet	PN12 CLASS D Code
1" 1/4	2.2	0.44	292	PIPEVBSD11406L
1" 1/2	2.5	0.58	207	PIPEVBSD11206L
2"	3.1	0.88	252	PIPEVBSD20006L
3"	4.6	1.90	96	PIPEVBSD30006L
4"	6	3.17	67	PIPEVBSD40006L
6"	8.8	6.81	30	PIPEVBSD60006L
8"	10,3	10,36	18	PIPEVBSD80006L



PVC-U pressure pipe PN15/CLASS E BS-EN 1452, BS 3505

Pressure pipe PVC-U, Grey RAL 7011, length 6m

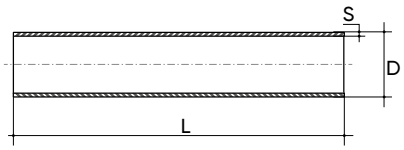
D (inches)	S (mm)	Weight (kg/m)	Qty x pallet	PN15 CLASS E Code
3/8"	1.5	0.116	Bulk	PIPEVBSE03806L
1/2"	1.7	0.17	1103	PIPEVBSE01206L
3/4"	1.9	0.24	664	PIPEVBSE03406L
1"	2.2	0.34	436	PIPEVBSE10006L
1" 1/4	2.7	0.54	292	PIPEVBSE11406L
1" 1/2	3.1	0.70	207	PIPEVBSE11206L
2"	3.9	1.08	252	PIPEVBSE20006L
2"1/2	4.8	1.82	87	PIPEVBSE21206L
3"	5.7	2.32	96	PIPEVBSE30006L
4"	7.3	3.79	67	PIPEVBSE40006L
6"	10.8	8.20	30	PIPEVBSE60006L



Pressure pipe PVC-U CLASS 7 BS-EN 1452, BS 3505

Pressure pipe PVC-U, Grey RAL 7011, length 6m

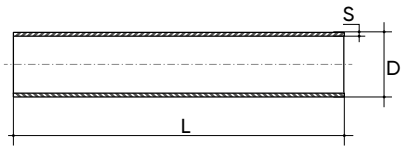
D (inches)	S (mm)	Weight (kg/m)	Qty x pallet	CLASS 7 Code
1/2"	3.7	0.32	1103	PIPEVBS701206L
3/4"	3.9	0.433	664	PIPEVBS703406L
1"	4.5	0.64	436	PIPEVBS710006L
1" 1/4	4.8	0.87	292	PIPEVBS711406L
1" 1/2	5.1	1.08	207	PIPEVBS701206L
2"	5.5	1.48	252	PIPEVBS720006L



PN10 Threadable PVC-U Pressure pipe

Pressure pipe PVC-U, Grey RAL 7011, length 5m

D (inches)	Øe (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN10 Code
1/2"	21.2	2.6	0.232	1103	PIPEVT10012T0L
3/4"	26.6	2.6	0.3	664	PIPEVT10034T0L
1"	33.4	3.3	0.481	436	PIPEVT10100T0L
1" 1/4	42.1	3.7	0.686	292	PIPEVT10114T0L
1" 1/2	48.1	4	0.852	207	PIPEVT10112T0L
2"	60.2	4.6	1,238	252	PIPEVT10200T0L
2"1/2	75	5.3	1,795	87	PIPEVT10212T0L
3"	88.7	6	2,386	96	PIPEVT10300T0L
4"	114.1	7	3,809	67	PIPEVT10400T0L



PN16 Threadable PVC-U Pressure pipe

Pressure pipe PVC-U, Grey RAL 7011, length 5m

D (inches)	Øe (mm)	S (mm)	Weight (kg/m)	Qty x pallet	PN16 Code
3/8"	17.1	2.6	0.179	Bulk	PIPEVT16038T0L
1/2"	21.2	3	0.26	1103	PIPEVT16012T0L
3/4"	26.6	3.4	0.38	664	PIPEVT16034T0L
1"	33.4	4.3	0.6	436	PIPEVT16100T0L
1" 1/4	42.1	5	0.894	292	PIPEVT16114T0L
1" 1/2	48.1	5.4	1,278	207	PIPEVT16112T0L
2"	60.2	6.4	1,648	252	PIPEVT16200T0L

PVC-U pipe

TRANSPARENT

LARETER

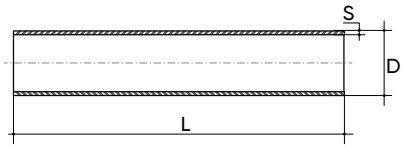
aliaxis

TRANSPARENT PVC-U PIPES

Pressure pipes for joint system by cold chemical welding (gluing through the use of suitable WELDON adhesive and detergent primer) in transparent rigid PVC that offers good impact resistance and high light permeability. Ideal economic solution for visible applications.

Technical specifications	
Size range	d 20 - d 160 (mm)
Bar length	Standard 5.0 m bars, other sizes on request
Coupling standards	Solvent welding
Sectors of use	Pool circulation and filtration systems
	Inspection points on small plants
Pipe material	PVC-U transparent

Density	
Test method	ISO 1183 - ASTM D792
Unit of measurement	g/cm^3
Value	1,370
Modulus of elasticity	
Test method	ISO 527
Unit of measurement	$MPa = N/mm^2$
Value	3300
Chapry Resistance	
Test method	ISO 179-1eA
Unit of measurement	KJ/m^2
Value	3
Yield stress elongation	
Test method	ISO 527
Unit of measurement	%
Value	4
Shore hardness	
Test method	ISO 868
Unit of measurement	Shore D
Value	84
Yield stress	
Test method	ISO 527
Unit of measurement	$MPa = N/mm^2$
Value	73
VICAT softening point (B/50)	
Test method	ISO 306
Unit of measurement	°C
Value	66
Surface resistivity	
Test method	DIN IEC 60093
Unit of measurement	Ohm
Value	$\geq 10^{13}$
Dielectric strength	
Test method	DIN IEC 60243-1
Unit of measurement	kV/mm
Value	30
Coefficient of linear thermal expansion	
Test method	ISO 11359-2
Unit of measurement	m/(m K)
Value	8×10^{-5}



Transparent PVC-U pipe

PVC-U Pressure pipe, transparent, length 5m

D (inches)	S (mm)	SDR	Weight (kg/m)	Code
20	1.5	13	0.13	PIPET13020
25	1.9	13	0.21	PIPET13025
32	2.4	13	0.34	PIPET13032
40	3	13	0.51	PIPET13040
50	2.4	21	0.54	PIPET21050
63	3	21	0.84	PIPET21063
75	3.6	21	1.19	PIPET21075
90	4.3	21	1.71	PIPET21090
110	5.3	21	2.56	PIPET21110
140	2.8	51	1.80	PIPET51140
160	3.2	51	2.36	PIPET51160

LARETER

PVC-U thermoformed fittings

PUSH-FIT, GLUABLE, FLANGED JOINTS

aliaxis

General characteristics
PVC-U pressure fittings

Applications and regulations

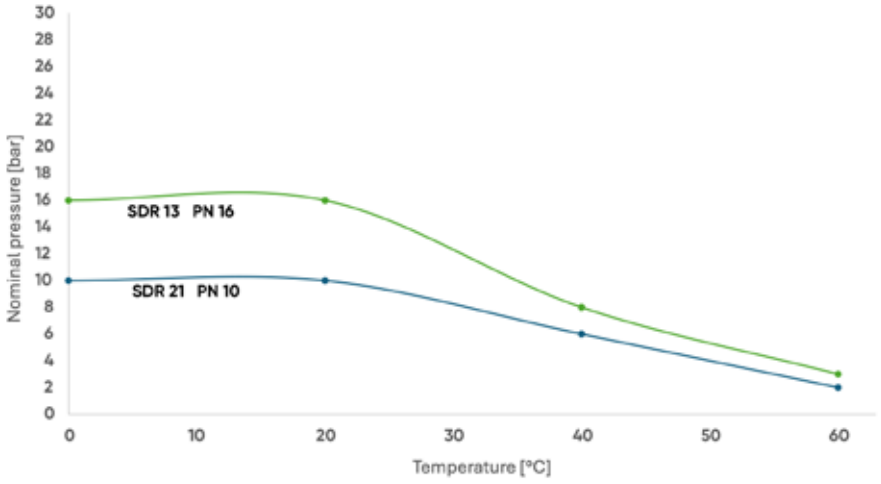
The fittings comply with UNI EN ISO 1452, DIN 8063, ISO 2045, ISO/DIS 6455 standards for the transport of pressurised fluids for the supply of drinking water, wastewater and food fluids: oil, wine, milk.

- **Hygiene and health requirements**

The fittings are produced with Lareter rigid PVC pipes for pressure pipes that comply with the Italian hygienic and sanitary requirements referred to in the Decree of the Minister of Health D.M. 21.03.1973 and Ministerial Decree 174/2004. For France: A.C.S. (Attestation de Conformité Sanitaire) issued by I.P.L. For Britain: Use for public water supply is certified by WRAS (Water Regulations Advisory Scheme). For Germany: Potability is issued by the Hygiene-Institut on behalf of DVGW.

- **Operating performance**

The operating pressures vary depending on the temperatures as indicated in the following table. In accordance with DIN 8061-62



- **General physical-mechanical characteristics**

Characteristics	Unit	Values	Methods
Min resistance required at 50 years MRS	Mpa	≥ 25	ISO 9080
Specific weight	gr/cm^3	1.35-1.46	ISO 1183
Yield load	Mpa	≥ 45	EN ISO 6259
Yield elongation	%	≥ 80	EN ISO 6259
Elastic modulus	Mpa	- 3000	EN ISO 6259
Longitudinal stresses	%	≤ 5	ISO 2505
VICAT softening temperature	°C	> 80	ISO 2507
Impact resistance	%	≤ 10	EN 744
Resistance to internal pressure			
1h at 20°C 42 Mpa	Hours	> 1	ISO 1167
Hydraulic seal of joints at internal pressure	Hours	> 1	ISO 1167
Shore D hardness	-	80 + 84	ASTM D676
Thermal conductivity	Kcal/h m°C	- 0.13	DIN 52612

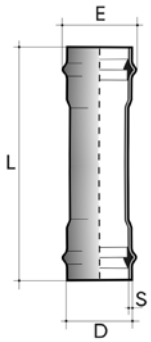
Applications and regulations

The ring joint (sliding connection)

It is generally adopted to automatically compensate for the expansions expected in the pipeline, following variations in temperature, and is characterised by the use of a gasket made of elastomeric material, of a section and geometry such as to allow hydraulic sealing, developing differentiated pressures on the generatrix of the introduced pipe section. Recent receiving cup forming techniques allow very small tolerances to be achieved and create the ideal condition for uniform stresses along the entire arc of the pipe circumference. The correct execution on site of the ring joint involves the following operations:

- scrupulous cleaning of the seat that will house the gasket;
- application of a sliding lubricant to facilitate the introduction of the gasket;
- introduction of the gasket in the correct position;
- introduction of the pipe end after thorough cleaning.

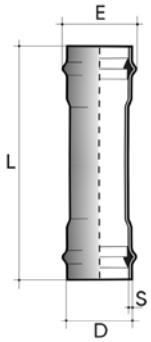
DIMENSIONS



Sliding sleeve PN10
(MANIC)

PVC-U Sleeve, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

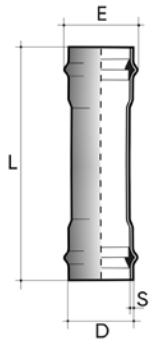
D (mm)	E (mm)	L (mm)	Weight (gr)	PN10 Code
50	72.4	295	170	MANPN10050SSL
63	89	285	360	MANPN10063SSL
75	103.5	280	540	MANPN10075SSL
90	121	295	820	MANPN10090SSL
110	143	317	720	MANPN10110SSL
125	160	320	1,310	MANPN10125SSL
140	180	346	1,870	MANPN10140SSL
160	207	350	1,690	MANPN10160SSL
180	224	390	3,340	MANPN10180SSL
200	248	418	4,320	MANPN10200SSL
225	276	435	5,810	MANPN10225SSL
250	306	505	8,170	MANPN10250SSL
280	338	494	7,010	MANPN10280SSL
315	378	494	13,350	MANPN10315SSL
355	441	635	22,680	MANPN10355SSL
400	482	642	27,550	MANPN10400SSL



Sliding sleeve PN16
(MANIC)

PVC-U Sleeve, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

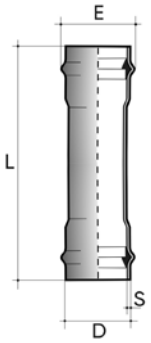
D (mm)	E (mm)	L (mm)	Weight (gr)	PN16 Code
50	72.4	295	180	MANPN16050SSL
63	89	285	380	MANPN16063SSL
75	103.5	280	570	MANPN16075SSL
90	121	295	870	MANPN16090SSL
110	143	317	1,080	MANPN16110SSL
125	160	320	1,380	MANPN16125SSL
140	180	346	1,970	MANPN16140SSL
160	207	350	2.530	MANPN16160SSL
180	224	390	3,510	MANPN16180SSL
200	248	418	4,550	MANPN16200SSL
225	276	435	6,120	MANPN16225SSL
250	306	505	8.600	MANPN16250SSL
280	338	494	7,380	MANPN16280SSL
315	378	494	14,050	MANPN16315SSL
355	441	635	23,870	MANPN16355SSL
400	482	642	29.000	MANPN16400SSL



Sliding sleeve (long) PN10
(MARIP)

PVC-U Sleeve, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

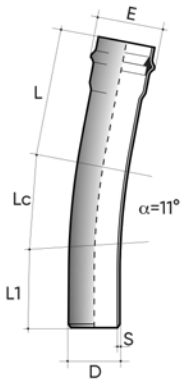
D (mm)	E (mm)	L (mm)	Weight (gr)	PN10 Code
63	90	494	640	MARPN10063SSL
75	104.7	488	900	MARPN10075SSL
90	121.5	515	1,380	MARPN10090SSL
110	143	543	1,770	MARPN10110SSL
125	160	537	2.190	MARPN10125SSL
140	180	545	2.890	MARPN10140SSL
160	196.5	600	2.890	MARPN10160SSL
180	224	590	5.010	MARPN10180SSL
200	247	645	6,510	MARPN10200SSL
225	276	645	8,710	MARPN10225SSL
250	306	670	10,760	MARPN10250SSL
280	338	640	14.400	MARPN10280SSL
315	378	640	15,800	MARPN10315SSL
355	441	635	22,680	MARPN10355SSL
400	482	642	27,550	MARPN10400SSL



Sliding sleeve (long) PN16
(MARIP)

PVC-U Sleeve, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

D (mm)	E (mm)	L (mm)	Weight (gr)	PN16 Code
63	90	494	670	MARPN16063SSL
75	104.7	488	950	MARPN16075SSL
90	121.5	515	1,450	MARPN16090SSL
110	143	543	1,860	MARPN16110SSL
125	160	537	2.310	MARPN16125SSL
140	180	545	3,050	MARPN16140SSL
160	196.5	600	4,320	MARPN16160SSL
180	224	590	5.270	MARPN16180SSL
200	247	645	6.850	MARPN16200SSL
225	276	645	9,170	MARPN16225SSL
250	306	670	11,330	MARPN16250SSL
280	338	640	13,700	MARPN16280SSL
315	378	640	17,300	MARPN16315SSL
355	441	635	23,870	MARPN16355SSL
400	482	642	29.000	MARPN16400SSL



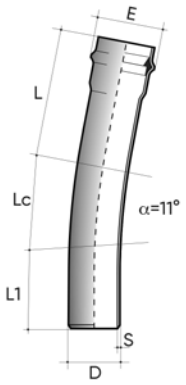
POWER-LOCK bend 11° M/F PN10

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	350	280	275	790	PBVPN10063F1L
75	102	280	280	355	1.120	PBVPN10075F1L
90	120	320	340	300	1,740	PBVPN10090F1L
110	144	315	295	300	1.930	PBVPN10110F1L
125	161	350	340	285	2,690	PBVPN10125F1L
140	178	330	375	315	3,610	PBVPN10140F1L
160	202	330	435	345	5.030	PBVPN10160F1L
180*	224	420	280	400	7,070	PBVPN10180S1L
200	238	430	280	390	10,950	PBVPN10200F1L
225	276	470	310	320	12.840	PBVPN10225F1L
250	305	520	310	380	15.900	PBVPN10250F1L
280	341	480	340	480	21,240	PBVPN10280F1L
315	382	480	370	450	26,950	PBVPN10315F1L
400	465	610	450	640	-	PBVPN10400F1L

*Rubber ring



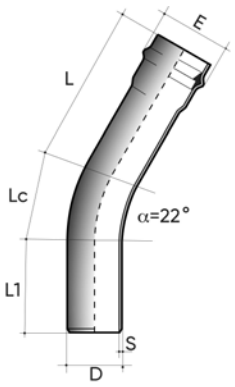
POWER-LOCK bend 11° M/F PN16

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	350	280	275	1,180	PBVPN16063F1L
75	102	280	280	355	1,690	PBVPN16075F1L
90	120	320	340	300	2,630	PBVPN16090F1L
110	144	315	295	300	2,930	PBVPN16110F1L
125	161	350	340	285	4,110	PBVPN16125F1L
140	178	330	375	315	5,610	PBVPN16140F1L
160	202	330	435	345	7,800	PBVPN16160F1L
180*	224	420	280	400	10,670	PBVPN16180S1L
200	238	430	280	390	13,710	PBVPN16200F1L
225	276	470	310	320	20,160	PBVPN16225F1L
250	305	520	310	380	24.700	PBVPN16250F1L
280	341	480	340	480	33,070	PBVPN16280F1L
315	382	480	370	450	41,880	PBVPN16315F1L
400	465	610	450	640	85,590	PBVPN16400F1L

*Rubber ring



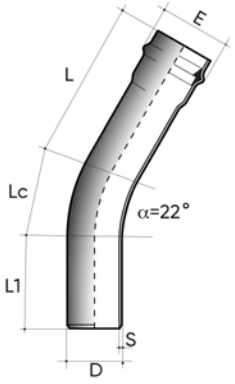
POWER-LOCK bend 22° M/F PN10

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	350	280	270	790	PBVPN10063F2L
75	102	280	280	355	1.120	PBVPN10075F2L
90	120	320	340	300	1,740	PBVPN10090F2L
110	144	315	295	300	1.930	PBVPN10110F2L
125	161	350	340	285	2,690	PBVPN10125F2L
140	178	330	375	315	3,610	PBVPN10140F2L
160	202	330	435	345	5.030	PBVPN10160F2L
180*	224	460	330	410	7,070	PBVPN10180S2L
200	238	470	330	400	10,950	PBVPN10200F2L
225	276	490	510	420	12.840	PBVPN10225F2L
250	305	510	520	370	15.900	PBVPN10250F2L
280	341	480	590	430	21,240	PBVPN10280F2L
315	382	540	510	450	26,950	PBVPN10315F2L
400	465	610	880	510	57,580	PBVPN10400F2L

*Rubber ring



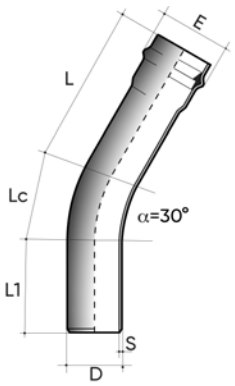
POWER-LOCK bend 22° M/F PN16

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	350	280	270	1,180	PBVPN16063F2L
75	102	280	280	355	1,690	PBVPN16075F2L
90	120	320	340	300	2,630	PBVPN16090F2L
110	144	315	295	300	2,930	PBVPN16110F2L
125	161	350	340	285	4,110	PBVPN16125F2L
140	178	330	375	315	5,610	PBVPN16140F2L
160	202	330	435	345	7,800	PBVPN16160F2L
180*	224	460	330	410	10,670	PBVPN16180S2L
200	238	470	330	400	13,710	PBVPN16200F2L
225	276	490	510	420	20,160	PBVPN16225F2L
250	305	510	520	370	24.700	PBVPN16250F2L
280	341	480	590	430	33,070	PBVPN16280F2L
315	382	540	510	450	41,880	PBVPN16315F2L
400	465	610	880	510	85,590	PBVPN16400F2L

*Rubber ring



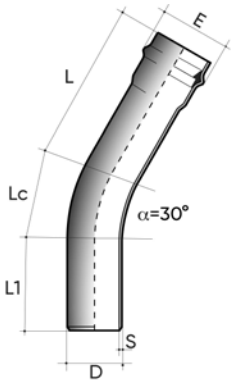
POWER-LOCK bend 30° M/F PN10

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	350	280	275	790	PBVPN10063F3L
75	102	280	280	355	1.120	PBVPN10075F3L
90	120	320	340	300	1,740	PBVPN10090F3L
110	144	315	295	300	1.930	PBVPN10110F3L
125	161	350	340	285	2,690	PBVPN10125F3L
140	178	330	375	315	3,610	PBVPN10140F3L
160	202	330	435	345	5.030	PBVPN10160F3L
180*	224	460	680	310	7,070	PBVPN10180S3L
200	238	475	680	295	10,950	PBVPN10200F3L
225	276	490	840	270	12.840	PBVPN10225F3L
250	305	490	840	370	15.900	PBVPN10250F3L
280	341	480	870	350	21,240	PBVPN10280F3L
315	382	590	870	390	26,950	PBVPN10315F3L
400	465	710	1070	720	57,580	PBVPN10400F3L

*Rubber ring



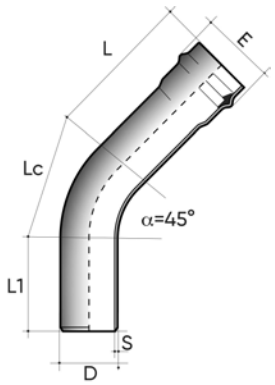
POWER-LOCK bend 30° M/F PN16

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	350	280	275	1,180	PBVPN16063F3L
75	102	280	280	355	1,690	PBVPN16075F3L
90	120	320	340	300	2,630	PBVPN16090F3L
110	144	315	295	300	2,930	PBVPN16110F3L
125	161	350	340	285	4,110	PBVPN16125F3L
140	178	330	375	315	5,610	PBVPN16140F3L
160	202	330	435	345	7,800	PBVPN16160F3L
180*	224	460	680	310	10,670	PBVPN16180S3L
200	238	475	680	295	13,710	PBVPN16200F3L
225	276	490	840	270	20,160	PBVPN16225F3L
250	305	490	840	370	24.700	PBVPN16250F3L
280	341	480	870	350	33,070	PBVPN16280F3L
315	382	590	870	390	41,880	PBVPN16315F3L
400	465	710	1070	720	85,590	PBVPN16400F3L

*Rubber ring



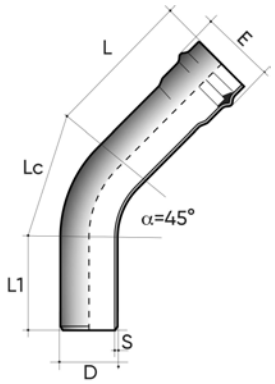
POWER-LOCK bend 45° M/F PN10

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	350	280	270	790	PBVPN10063F4L
75	102	280	280	355	1.120	PBVPN10075F4L
90	120	320	340	300	1,740	PBVPN10090F4L
110	144	315	295	300	1.930	PBVPN10110F4L
125	161	350	340	285	2,690	PBVPN10125F4L
140	178	330	375	315	3,610	PBVPN10140F4L
160	202	330	435	345	5.030	PBVPN10160F4L
180*	224	460	330	410	7,070	PBVPN10180S4L
200	238	470	330	400	10,950	PBVPN10200F4L
225	276	490	510	420	12.840	PBVPN10225F4L
250	305	510	520	370	15.900	PBVPN10250F4L
280	341	480	590	430	21,240	PBVPN10280F4L
315	382	540	510	450	26,950	PBVPN10315F4L
400	465	610	880	510	57,580	PBVPN10400F4L

*Rubber ring



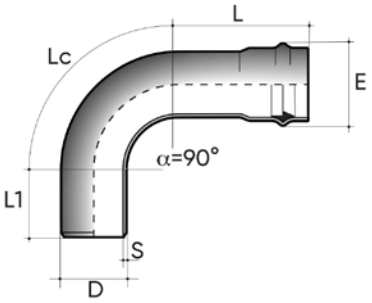
POWER-LOCK bend 45° M/F PN16

(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	350	280	270	1,180	PBVPN16063F4L
75	102	280	280	355	1,690	PBVPN16075F4L
90	120	320	340	300	2,630	PBVPN16090F4L
110	144	315	295	300	2,930	PBVPN16110F4L
125	161	350	340	285	4,110	PBVPN16125F4L
140	178	330	375	315	5,610	PBVPN16140F4L
160	202	330	435	345	7,800	PBVPN16160F4L
180*	224	460	330	410	10,670	PBVPN16180S4L
200	238	470	330	400	13,710	PBVPN16200F4L
225	276	490	510	420	20,160	PBVPN16225F4L
250	305	510	520	370	24.700	PBVPN16250F4L
280	341	480	590	430	33,070	PBVPN16280F4L
315	382	540	510	450	41,880	PBVPN16315F4L
400	465	610	880	510	85,590	PBVPN16400F4L

*Rubber ring

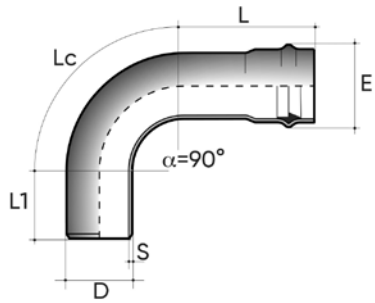


90° M/F PN10 POWER-LOCK bend
(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	265	350	255	790	PBVPN10063F9L
75	102	255	410	245	1.120	PBVPN10075F9L
90	120	285	480	275	1,850	PBVPN10090F9L
110	144	325	560	365	2,590	PBVPN10110F9L
125	161	320	685	260	3,360	PBVPN10125F9L
140	178	325	770	325	4,810	PBVPN10140F9L
160	202	360	880	230	6,440	PBVPN10160F9L
180*	224	490	780	440	9,430	PBVPN10180S9L
200	238	450	1460	270	15,340	PBVPN10200F9L
225	276	520	1710	380	23,390	PBVPN10225F9L
250	305	580	1720	390	28,400	PBVPN10250F9L
280	341	700	1930	480	42,480	PBVPN10280F9L
315	382	610	2240	450	57,480	PBVPN10315F9L

*Rubber ring

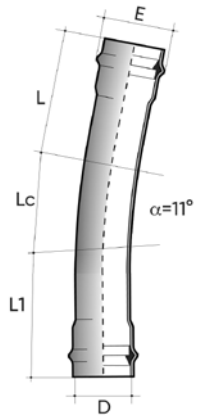


POWER-LOCK bend 90° M/F PN16
(BEND)

Bend PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	265	350	255	1,180	PBVPN16063F9L
75	102	255	410	245	1,690	PBVPN16075F9L
90	120	285	480	275	2.770	PBVPN16090F9L
110	144	325	560	365	3,290	PBVPN16110F9L
125	161	320	685	260	5.040	PBVPN16125F9L
140	178	325	770	325	7,170	PBVPN16140F9L
160	202	360	880	230	9,630	PBVPN16160F9L
180*	224	490	780	440	14,220	PBVPN16180S9L
200	238	450	1460	270	24,130	PBVPN16200F9L
225	276	520	1710	380	35,450	PBVPN16225F9L
250	305	580	1720	390	42.580	PBVPN16250F9L
280	341	700	1930	480	64,000	PBVPN16280F9L
315	382	610	2240	450	86,450	PBVPN16315F9L

*Rubber ring



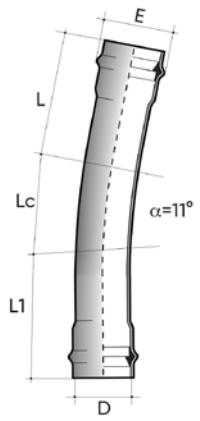
POWER-LOCK bend 11° F/F PN10

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	355	280	315	820	PBVPN10063FF1L
75	102	330	280	305	1.130	PBVPN10075FF1L
90	120	300	340	330	1,710	PBVPN10090FF1L
110	144	320	295	315	1,980	PBVPN10110FF1L
125	161	330	340	360	2.855	PBVPN10125FF1L
140	178	335	375	360	3,730	PBVPN10140FF1L
160	202	340	435	380	5.270	PBVPN10160FF1L
180*	224	560	280	560	9,430	PBVPN10180SS1L
200	238	560	280	560	11,700	PBVPN10200FF1L
225	276	545	310	545	14,680	PBVPN10225FF1L
250	305	570	310	570	21.000	PBVPN10250FF1L
280	341	555	340	555	23,370	PBVPN10280FF1L
315	382	565	370	565	29,650	PBVPN10315FF1L
400	465	750	450	800	63,340	PBVPN10400FF1L

*Rubber ring



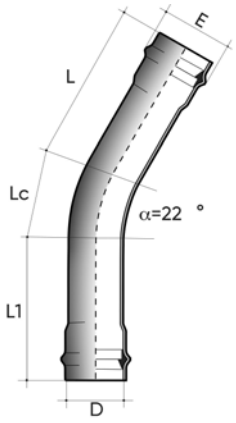
POWER-LOCK bend 11° F/F PN16

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	355	280	315	1,220	PBVPN16063FF1L
75	102	330	280	305	1,690	PBVPN16075FF1L
90	120	300	340	330	2,610	PBVPN16090FF1L
110	144	320	295	315	3.200	PBVPN16110FF1L
125	161	330	340	360	4,350	PBVPN16125FF1L
140	178	335	375	360	5,600	PBVPN16140FF1L
160	202	340	435	380	8,160	PBVPN16160FF1L
180*	224	560	280	560	14,220	PBVPN16180SS1L
200	238	560	280	560	17,550	PBVPN16200FF1L
225	276	545	310	545	22,240	PBVPN16225FF1L
250	305	570	310	570	31.510	PBVPN16250FF1L
280	341	555	340	555	39,470	PBVPN16280FF1L
315	382	565	370	565	49,950	PBVPN16315FF1L

*Rubber ring



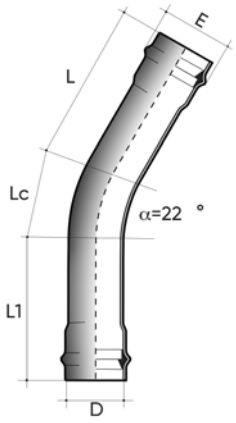
POWER-LOCK bend 22° F/F PN10

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK ® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	355	280	315	820	PBVPN10063FF2L
75	102	330	280	305	1.130	PBVPN10075FF2L
90	120	300	340	330	1,710	PBVPN10090FF2L
110	144	320	295	315	1,980	PBVPN10110FF2L
125	161	330	340	360	2.855	PBVPN10125FF2L
140	178	335	375	360	3,730	PBVPN10140FF2L
160	202	340	435	380	5.270	PBVPN10160FF2L
180*	224	635	330	635	9,430	PBVPN10180SS2L
200	238	635	330	635	11,700	PBVPN10200FF2L
225	276	545	510	545	14,680	PBVPN10225FF2L
250	305	665	520	665	21.000	PBVPN10250FF2L
280	341	530	590	530	23,370	PBVPN10280FF2L
315	382	570	510	570	29,650	PBVPN10315FF2L
400	465	660	880	660	63,340	PBVPN10400FF2L

*Rubber ring



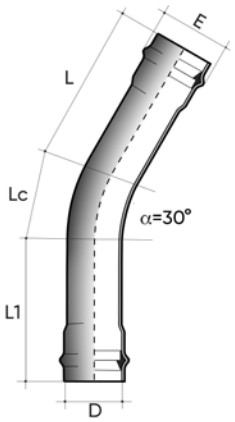
POWER-LOCK bend 22° F/F PN16

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK ® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	355	280	315	1,220	PBVPN16063FF2L
75	102	330	280	305	1,690	PBVPN16075FF2L
90	120	300	340	330	2,610	PBVPN16090FF2L
110	144	320	295	315	3.200	PBVPN16110FF2L
125	161	330	340	360	4,350	PBVPN16125FF2L
140	178	335	375	360	5,600	PBVPN16140FF2L
160	202	340	435	380	8,160	PBVPN16160FF2L
180*	224	635	330	635	14,220	PBVPN16180SS2L
200	238	635	330	635	17,550	PBVPN16200FF2L
225	276	545	510	545	22,240	PBVPN16225FF2L
250	305	665	520	665	31.510	PBVPN16250FF2L
280	341	530	590	530	39,470	PBVPN16280FF2L
315	382	570	510	570	49,950	PBVPN16315FF2L

*Rubber ring



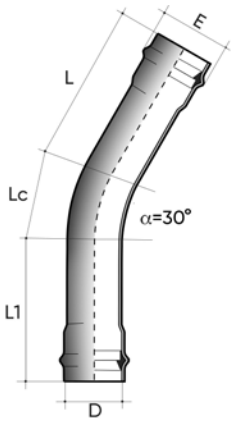
POWER-LOCK bend 30° F/F PN10

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	355	280	315	820	PBVPN10063FF3L
75	102	330	280	305	1.130	PBVPN10075FF3L
90	120	300	340	330	1,710	PBVPN10090FF3L
110	144	320	295	315	1,980	PBVPN10110FF3L
125	161	330	340	360	2.855	PBVPN10125FF3L
140	178	335	375	360	3,730	PBVPN10140FF3L
160	202	340	435	380	5.270	PBVPN10160FF3L
180*	224	540	680	540	9,430	PBVPN10180SS3L
200	238	550	680	540	11,700	PBVPN10200FF3L
225	276	505	840	505	14,680	PBVPN10225FF3L
250	305	580	840	580	21.000	PBVPN10250FF3L
280	341	565	870	565	23,370	PBVPN10280FF3L
315	382	615	870	615	29,650	PBVPN10315FF3L
400	465	810	1070	810	63,340	PBVPN10400FF3L

*Rubber ring



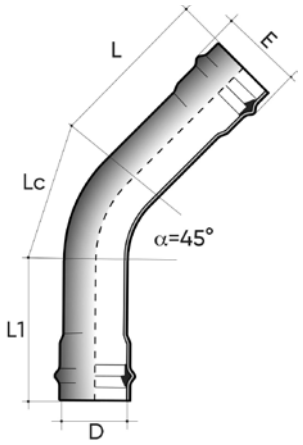
POWER-LOCK bend 30° F/F PN16

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	355	280	315	1,220	PBVPN16063FF3L
75	102	330	280	305	1,690	PBVPN16075FF3L
90	120	300	340	330	2,610	PBVPN16090FF3L
110	144	320	295	315	3.200	PBVPN16110FF3L
125	161	330	340	360	4,350	PBVPN16125FF3L
140	178	335	375	360	5,600	PBVPN16140FF3L
160	202	340	435	380	8,160	PBVPN16160FF3L
180*	224	540	680	540	14,220	PBVPN16180SS3L
200	238	550	680	540	17,550	PBVPN16200FF3L
225	276	505	840	505	22,240	PBVPN16225FF3L
250	305	580	840	580	31.510	PBVPN16250FF3L
280	341	565	870	565	39,470	PBVPN16280FF3L
315	382	615	870	615	49,950	PBVPN16315FF3L

*Rubber ring



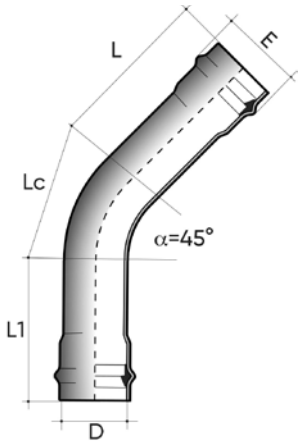
POWER-LOCK bend 45° F/F PN10

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	355	280	315	820	PBVPN10063FF4L
75	102	330	280	305	1.130	PBVPN10075FF4L
90	120	300	340	330	1,710	PBVPN10090FF4L
110	144	320	295	315	1,980	PBVPN10110FF4L
125	161	330	340	360	2.855	PBVPN10125FF4L
140	178	335	375	360	3,730	PBVPN10140FF4L
160	202	340	435	380	5.270	PBVPN10160FF4L
180*	224	540	680	540	9,430	PBVPN10180SS4L
200	238	550	680	540	11,700	PBVPN10200FF4L
225	276	505	840	505	14,680	PBVPN10225FF4L
250	305	580	840	580	21.000	PBVPN10250FF4L
280	341	565	870	565	23,370	PBVPN10280FF4L
315	382	615	870	615	29,650	PBVPN10315FF4L
400	465	810	1070	810	63,340	PBVPN10400FF4L

*Rubber ring



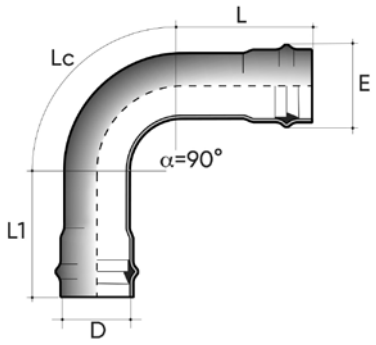
POWER-LOCK bend 45° F/F PN16

(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	355	280	315	1,220	PBVPN16063FF4L
75	102	330	280	305	1,690	PBVPN16075FF4L
90	120	300	340	330	2,610	PBVPN16090FF4L
110	144	320	295	315	3.200	PBVPN16110FF4L
125	161	330	340	360	4,350	PBVPN16125FF4L
140	178	335	375	360	5,600	PBVPN16140FF4L
160	202	340	435	380	8,160	PBVPN16160FF4L
180*	224	540	680	540	14,220	PBVPN16180SS4L
200	238	550	680	540	17,550	PBVPN16200FF4L
225	276	505	840	505	22,240	PBVPN16225FF4L
250	305	580	840	580	31.510	PBVPN16250FF4L
280	341	565	870	565	39,470	PBVPN16280FF4L
315	382	615	870	615	49,950	PBVPN16315FF4L

*Rubber ring

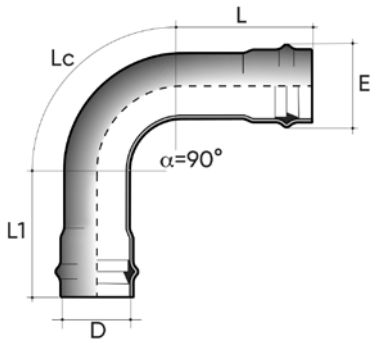


90° F/F PN10 POWER-LOCK bend
(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN10 Code
63	86	270	350	270	770	PBVPN10063F1L
75	102	260	410	265	1.130	PBVPN10075F1L
90	120	280	480	290	1,820	PBVPN10090F1L
110	144	335	560	355	2,590	PBVPN10110F1L
125	161	320	685	320	3,480	PBVPN10125F1L
140	178	360	770	330	5,060	PBVPN10140F1L
160	202	335	880	315	6,720	PBVPN10160F1L
180*	224	560	780	590	10.900	PBVPN10180SS9L
200	238	560	1460	570	17,890	PBVPN10200F1L
225	276	660	1710	650	26,600	PBVPN10225F1L
250	305	660	1720	650	32,940	PBVPN10250F1L
280	341	745	1930	745	48,150	PBVPN10280F1L
315	382	680	2240	650	61,080	PBVPN10315F1L
400	465	810	1070	810	63,340	PBVPN10400F1L

*Rubber ring

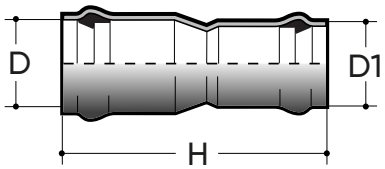


POWER-LOCK bend 90° F/F PN16
(BEND)

Bend PVC-U, F/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L (mm)	Lc (mm)	L1 (mm)	Weight (gr)	PN16 Code
63	86	270	350	270	1.140	PBVPN16063FF9L
75	102	260	410	265	1,690	PBVPN16075FF9L
90	120	280	480	290	2,710	PBVPN16090FF9L
110	144	335	560	355	3,990	PBVPN16110FF9L
125	161	320	685	320	5.300	PBVPN16125FF9L
140	178	360	770	330	7,550	PBVPN16140FF9L
160	202	335	880	315	10,270	PBVPN16160FF9L
180*	224	560	780	590	16,890	PBVPN16180SS9L
200	238	560	1460	570	26,870	PBVPN16200FF9L
225	276	660	1710	650	41,010	PBVPN16225FF9L
250	305	660	1720	650	50,240	PBVPN16250FF9L
280	341	745	1930	745	72.530	PBVPN16280FF9L
315	382	680	2240	650	91,860	PBVPN16315FF9L

*Rubber ring

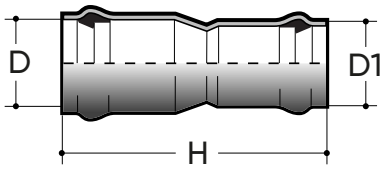


Reduced sleeve F/F PN10
(MARID)

Reduced sleeve PVC-U, F/F, Grey RAL 7011, Rubber ring connection,
FORSHEDA 601 POWER-LOCK on request

D x d (mm)	H (mm)	Weight (gr)	PN10 Code
75x63	330	476	MDVP10075063SSL
90x75	340	770	MDVP10090075SSL
110x90	418	1,493	MDVP10110090SSL
125x110	460	2.180	MDVP10125110SSL
140x125	508	3,056	MDVP10140125SSL
160x140	552	4,770	MDVP10160140SSL
180x160	598	6,715	MDVP10180160SSL
200x180	658	8.480	MDVP10200180SSL
225x200	677	10.500	MDVP10225200SSL
250x225	696	14.410	MDVP10250225SSL
280x250	723	17,950	MDVP10280250SSL
315x280**	1.140	21,190	MDVP08315280SSL
55x315***	1.150	25.840	MDVP05355315SSL
400x355***	1.150	33,600	MDVP05400355SSL

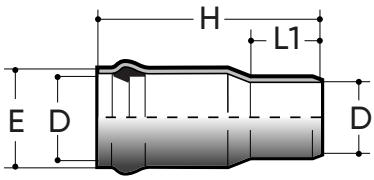
**PN8
***PN5



Reduced sleeve F/F PN16
(MARID)

Reduced sleeve PVC-U, F/F, Grey RAL 7011, Rubber ring connection,
FORSHEDA 601 POWER-LOCK on request

D x d (mm)	H (mm)	Weight (gr)	PN16 Code
75x63	330	520	MDVP16075063SSL
90x75	340	970	MDVP16090075SSL
110x90	418	2000	MDVP16110090SSL
125x110	460	2450	MDVP16125110SSL
140x125	508	3835	MDVP16140125SSL
160x140	552	5670	MDVP16160140SSL

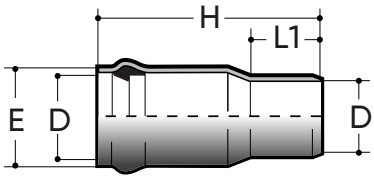


Single-joint M/F PN10 (MONOG)

PVC-U Sleeve, M/F, RAL 7011 Grey, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L1 (mm)	H (mm)	Weight (gr)	PN10 Code
63	86	46	185	170	MGVP100630FL
75	102	52	200	254	MGVP100750FL
90	120	60	210	390	MGVP100900FL
110	144	70	220	484	MGVP101100FL
125	161	80	245	693	MGVP101250FL
140	178	85	265	958	MGVP101400FL
160	202	95	280	1,316	MGVP101600FL
180*	224	105	320	1,890	MGVP101800SL
200	238	115	340	2500	MGVP102000FL
225	276	130	355	3400	MGVP102250FL
250	305	140	380	5000	MGVP102500FL
280	341	155	400	6000	MGVP102800FL
315	382	175	450	8090	MGVP103150FL

*Rubber ring

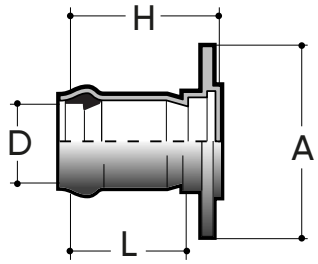


Single-joint M/F PN16 (MONOG)

PVC-U Sleeve, M/F, RAL 7011 Grey, FORSHEDA 601 POWER-LOCK® connection

D (mm)	E (mm)	L1 (mm)	H (mm)	Weight (gr)	PN16 Code
63	86	46	185	250	MGVP160630FL
75	102	52	200	380	MGVP160750FL
90	120	60	210	570	MGVP160900FL
110	144	70	220	730	MGVP161100FL
125	161	80	245	1,040	MGVP161250FL
140	178	85	265	1,430	MGVP161400FL
160	202	95	280	1,970	MGVP161600FL
180*	224	105	320	2.850	MGVP161800SL
200	238	115	340	3,730	MGVP162000FL
225	276	130	355	4,950	MGVP162250FL
250	305	140	380	6,470	MGVP162500FL
280	341	155	400	8.500	MGVP162800FL
315	382	175	450	12,200	MGVP163150FL

*Rubber ring

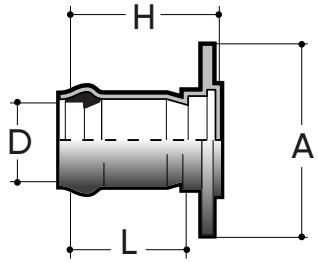


Single-joint Flanged PN10
(TOULIPE)

Single-joint Flanged PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D x dn (mm)	Ø H x n. holes (mm)	L (mm)	H (mm)	Weight (gr)	PN10 Code
63x50	125x4	120	225	572	TPVP10063050FBL
75x65	145x4	120	230	769	TPVP10075065FBL
90x80	160x8	120	240	1,092	TPVP10090080FBL
110x100	180x8	130	250	1,449	TPVP10110100FBL
125x110	210x8	140	275	1,846	TPVP10125110FBL
140x125	210x8	160	295	2.409	TPVP10140125FBL
160x150	240x8	160	310	3,000	TPVP10160150FBL
180x180*	270x8	180	350	5.035	TPVP10180180SBL
200x200	295x8	200	370	5.200	TPVP10200200FBL
225x200	295x8	210	390	6.300	TPVP10225200FBL
250x250	350x12	220	410	8.500	TPVP10250250FBL
280x250	350x12	230	430	12,864	TPVP10280250FBL
315x300**	400x12	230	480	15,362	TPVP08315300FBL

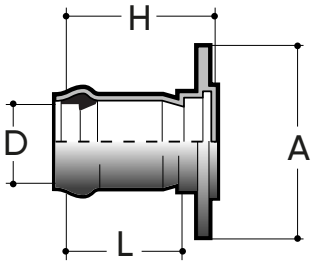
*Rubber ring
**PN8



Single-joint Flanged PN16
(TOULIPE)

Single-joint Flanged PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

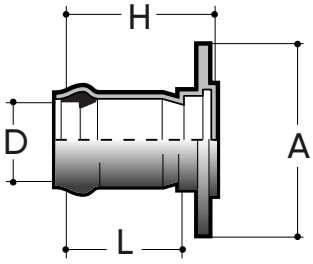
D x dn (mm)	Ø H x n. holes (mm)	L (mm)	H (mm)	Weight (gr)	PN16 Code
63x50	125x4	120	225	653	TPVP16063050FBL
75x65	145x4	120	230	893	TPVP16075065FBL
90x80	160x8	120	240	1,333	TPVP16090080FBL
110x100	180x8	130	250	1,533	TPVP16110100FBL
125x110	210x8	140	275	2,257	TPVP16125110FBL
140x125	210x8	160	295	3,013	TPVP16140125FBL
160x150	240x8	160	310	3.600	TPVP16160150FBL



Reduction with Flange PN10
(REDUCED TOULIPE)

Reduced Toulip PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

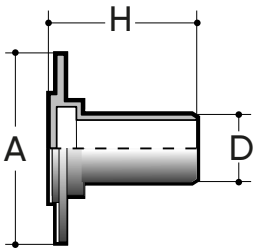
D x dn (mm)	Ø H x n. holes (mm)	L (mm)	H (mm)	Weight (gr)	PN10 Code
75x50	125x4	120	350	769	TRVP10075050FBL
90x50	125x4	120	365	1,092	TRVP10090050FBL
90x65	145x4	120	365	1,092	TRVP10090065FBL
110x50	125x4	130	390	1,449	TRVP10110050FBL
110x65	145x4	130	390	1,449	TRVP10110065FBL
110x80	160x8	130	390	1,449	TRVP10110080FBL
125x50	125x4	140	420	1,846	TRVP10125050FBL
125x65	145x4	140	420	1,846	TRVP10125065FBL
125x80	160x8	140	420	1,846	TRVP10125080FBL
125x100	180x8	140	420	1,846	TRVP10125100FBL
140x50	125x4	160	460	2.409	TRVP10140050FBL
140x65	145x4	160	460	2.409	TRVP10140065FBL
140x80	160x8	160	460	2.409	TRVP10140080FBL
140x100	180x8	160	460	2.409	TRVP10140100FBL
160x80	160x8	160	500	3,321	TRVP10160080FBL
160x100	180x8	160	500	3,321	TRVP10160100FBL
160x125	210x8	160	500	3,321	TRVP10160125FBL
200x80	160x8	200	620	5,632	TRVP10200080FBL
200x100	180x8	200	620	5,632	TRVP10200100FBL
200x125	210x8	200	620	5,632	TRVP10200125FBL
200x150	240x8	200	620	5,632	TRVP10200150FBL



Reduction with Flange PN16
(REDUCED TOULIPE)

Reduced Toulip PVC-U, M/F, Grey RAL 7011, FORSHEDA 601 POWER-LOCK® connection

D x dn (mm)	Ø H x n. holes (mm)	L (mm)	H (mm)	Weight (gr)	PN 16 Code
75x50	125x4	120	350	893	TRVP16075050FBL
90x50	125x4	120	365	1,333	TRVP16090050FBL
90x65	145x4	120	365	1,333	TRVP16090065FBL
110x50	125x4	130	390	1,533	TRVP16110050FBL
110x65	145x4	130	390	1,533	TRVP16110065FBL
110x80	160x8	130	390	1,533	TRVP16110080FBL
125x50	125x4	140	420	2,257	TRVP16125050FBL
125x65	145x4	140	420	2,257	TRVP16125065FBL
125x80	160x8	140	420	2,257	TRVP16125080FBL
125x100	180x8	140	420	2,257	TRVP16125100FBL
140x50	125x4	160	460	3,013	TRVP16140050FBL
140x65	145x4	160	460	3,013	TRVP16140065FBL
140x80	160x8	160	460	3,013	TRVP16140080FBL
140x100	180x8	160	460	3,013	TRVP16140100FBL
160x80	160x8	160	500	4.114	TRVP16160080FBL
160x100	180x8	160	500	4.114	TRVP16160100FBL
160x125	210x8	160	500	4.114	TRVP16160125FBL

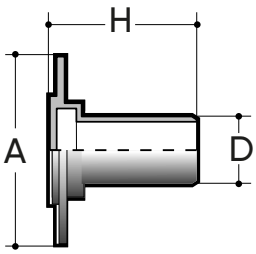


PN10 Male Adapter (BOUT)

PVC-U Adapter, M/M, RAL 7011 Grey, FORSHEDA 601 POWER-LOCK® connection

D (mm)	Ø H x n. holes (mm)	H (mm)	Weight (gr)	PN10 Code
63x50	125x4	200	567	BOVP100630500BL
75x65	145x4	200	744	BOVP100750650BL
90x80	160x8	230	1,092	BOVP100900800BL
110x100	180x8	240	1,449	BOVP101101000BL
125x110	190x8	240	1,775	BOVP101251100BL
140x125	210x8	260	2,319	BOVP101401250BL
160x150	240x8	300	3,321	BOVP101601500BL
180x180	270x8	320	4,917	BOVP101801800BL
200x200	295x8	340	5,486	BOVP102002000BL
225x200	295x8	360	5,968	BOVP102252000BL
250x225	350x12	400	8,147	BOVP102502250BL
280x250	350x12	420	12,864	BOVP102802500BL
*315x300	400x12	470	*15.362	BOVP083153000BL

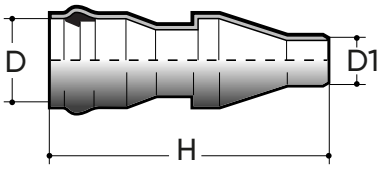
* PN8



PN16 Male Adapter (BOUT)

PVC-U Adapter, M/M, RAL 7011 Grey, FORSHEDA 601 POWER-LOCK® connection

D (mm)	Ø H x n. holes (mm)	H (mm)	Weight (gr)	PN16 Code
63x50	125x4	200	646	BOVP160630500BL
75x65	145x4	200	855	BOVP160750650BL
90x80	160x8	230	1,279	BOVP160900800BL
110x100	180x8	240	1,475	BOVP161101000BL
125x110	190x8	240	2,088	BOVP161251100BL
140x125	210x8	260	2.744	BOVP161401250BL
160x150	240x8	300	3,973	BOVP161601500BL

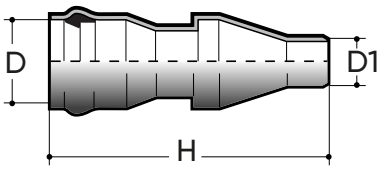


Reduced single-joint/male PN10 (REDUCER)

Reduced joint PVC-U, F/M, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK on request

D x D1 (mm)	H (mm)	Weight (gr)	PN10 Code
75x63	300	460	REVP100750630SL
90x63	315	720	REVP100900630SL
90x75	320	740	REVP100900750SL
110x63	380	1,340	REVP101100630SL
110x75	390	1,380	REVP101100750SL
110x90	400	1,440	REVP101100900SL
125x90	440	2,050	REVP101250900SL
125x110	450	2.110	REVP101251100SL
140x110	490	2,870	REVP101401100SL
140x125	500	2,960	REVP101401250SL
160x110	530	4.500	REVP101601100SL
160x140	540	4600	REVP101601400SL
180x160	580	6500	REVP101801600SL
200x160	640	8100	REVP102001600SL
225x160	650	9800	REVP102251600SL
250x200	680	12200	REVP102502000SL
280x225	700	15000	REVP102802250SL
315x250**	1500	*20.300	REVP083152500SL

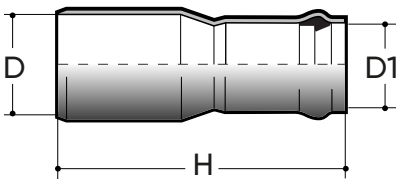
**PN8



Reduced single-joint /male PN16 (REDUCER)

Reduced joint PVC-U, F/M, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK on request

D x D1 (mm)	H (mm)	Weight (gr)	PN16 Code
75x63	300	500	REVP160750630SL
90x63	315	920	REVP160900630SL
90x75	320	940	REVP160900750SL
110x63	380	1,780	REVP161100630SL
110x75	390	1,850	REVP161100750SL
110x90	400	1.930	REVP161100900SL
125x90	440	2.250	REVP161250900SL
125x110	450	2,370	REVP161251100SL
140x110	490	3.600	REVP161401100SL
140x125	500	3,700	REVP161401250SL
160x110	530	5.300	REVP161601100SL
160x140	540	5.400	REVP161601400SL

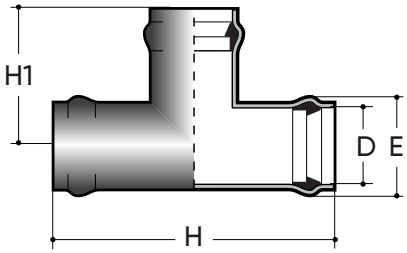


M/F increase with PN10 rubber ring
(INCREASE)

Increase PVC-U, M/F, Grey RAL 7011, Rubber ring connection,
FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	H (mm)	Weight (gr)	PN10 Code
90x75	238	480	AUVP100900750SL
110x75	246	635	AUVP101100750SL
110x90	246	670	AUVP101100900SL
125x110	281	1,450	AUVP101251100SL
140x110	292.5	1,670	AUVP101401100SL
160x110	307	1,970	AUVP101601100SL
200x160	364.5	3,450	AUVP102001600SL
225x160	387	4.140	AUVP102251600SL

On request PN 16

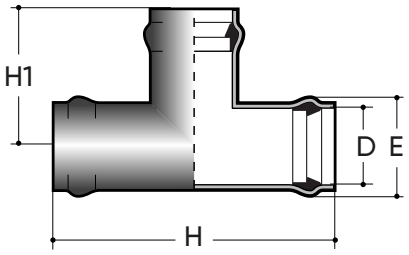


Tee at 90° F/F PN10
(MONOLITHIC TEE90)

90° bypass PVC-U, F/F, Grey RAL 7011, Rubber ring connection,
FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	E (mm)	H (mm)	H1 (mm)	Weight (gr)	PN10 Code
63	92	274	137	780	T9VP10063SSL
75	107	300	150	1.140	T9VP10075SSL
90	126	330	165	1,745	T9VP10090SSL
110	151	370	185	2,745	T9VP10110SSL
125	169	400	200	3,700	T9VP10125SSL
140	178	650	325	7,440	T9VP10140SSL
160	213	462	231	6,835	T9VP10160SSL
*180	224	788	394	14,310	T9VP10180SSL
200	262	545	273	12,500	T9VP10200SSL
*225	276	864	432	24,950	T9VP10225SSL
*250	305	1,012	506	29.500	T9VP10250SSL
*280	341	1,020	510	39,230	T9VP10280SSL
*315	382	1,194	597	55.000	** T9VP08315SSL

* Assembled
** PN8

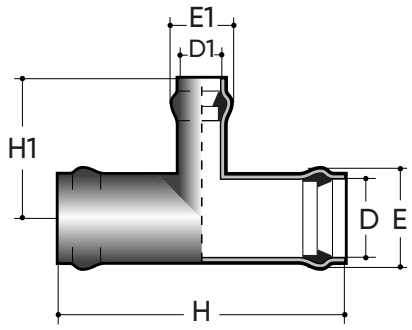


Tee at 90° F/F PN16
(MONOLITHIC TEE90)

90° bypass PVC-U, F/F, Grey RAL 7011, Rubber ring connection,
FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	E (mm)	H (mm)	H1 (mm)	Weight (gr)	PN16 Code
* 63	92	274	137	1,014	T9VP16063SSL
75	107	300	150	1,482	T9VP16075SSL
90	126	330	165	2,269	T9VP16090SSL
110	151	370	185	3,569	T9VP16110SSL
125	169	400	200	4,810	T9VP16125SSL
140	178	650	325	9,672	T9VP16140SSL
160	213	462	231	8,886	T9VP16160SSL

*Assembled

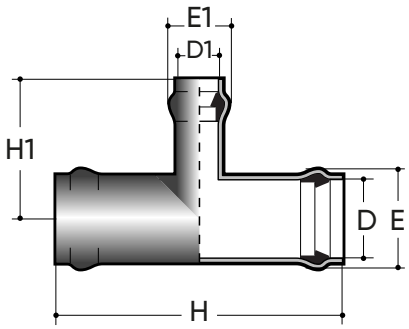


90° tee with reduced lead PN10 (TERID)

Shunt reduced to 90° PVC-U, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	H (mm)	H1 (mm)	E (mm)	E1 (mm)	Weight (gr)	PN10 Code
75x63	300	144	107	92	1130	TRVP10075063SSL
90x63	330	154	126	92	1,530	TRVP10090063SSL
90x75	330	160	126	107	1,600	TRVP10090075SSL
110x63	370	166	151	92	2.300	TRVP10110063SSL
110x75	370	172	151	107	2.385	TRVP10110075SSL
110x90	370	177	151	126	2.530	TRVP10110090SSL
125x63	400	173	169	92	3.230	TRVP10125063SSL
125x75	400	179	169	107	3.300	TRVP10125075SSL
125x90	400	184	169	126	3,390	TRVP10125090SSL
125x110	400	192	169	92	3,545	TRVP10125110SSL
140x63	630	283	178	151	4,825	TRVP10140063SSL
140x75	630	285	178	86	4,910	TRVP10140075SSL
140x90	630	291	178	101	5,070	TRVP10140090SSL
140x110	630	303	178	119	5.300	TRVP10140110SSL
140x125	630	309	178	143	5,575	TRVP10140125SSL
160x63	462	195	213	160	5,540	TRVP10160063SSL
160x75	462	201	213	92	5,625	TRVP10160075SSL
160x90	462	206	213	107	5,780	TRVP10160090SSL
160x110	462	214	213	126	5,970	TRVP10160110SSL
160x125	462	222	213	69	6,225	TRVP10160125SSL
160x140	462	225	213	178	6.500	TRVP10160140SSL
200x63	545	221	262	92	9,460	TRVP10200063SSL
200x75	545	227	262	107	9,545	TRVP10200075SSL
200x90	545	232	262	126	9,700	TRVP10200090SSL
200x110	545	240	262	151	9,890	TRVP10200110SSL
200x125	545	248	262	169	10,145	TRVP10200125SSL
200x140	545	251	262	178	10,665	TRVP10200140SSL
200x160	545	266	262	213	11,190	TRVP10200160SSL
225x160	906	442	276	247	23.800	TRVP10225160SSL
250x160	994	494	305	276	28,175	TRVP10250160SSL
280x200	1,060	544	341	305	37,250	TRVP10280200SSL
*315x250	1,176	582	381	305	50,515	TRVP08315250SSL

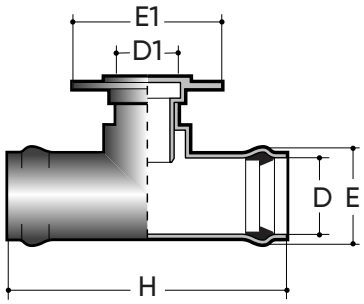
*PN8



90° tee with reduced lead PN16 (TERID)

Shunt reduced to 90° PVC-U, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	E (mm)	E1 (mm)	H (mm)	H1 (mm)	Weight (gr)	PN16 Code
75x63	300	144	107	92	1,469	TRVP16075063SSL
90x63	330	154	126	92	1,989	TRVP16090063SSL
90x75	330	160	126	107	2,080	TRVP16090075SSL
110x63	370	166	151	92	2.990	TRVP16110063SSL
110x75	370	172	151	107	3,101	TRVP16110075SSL
110x90	370	177	151	126	3,289	TRVP16110090SSL
125x63	400	173	169	92	4,199	TRVP16125063SSL
125x75	400	179	169	107	4290	TRVP16125075SSL
125x90	400	184	169	126	4407	TRVP16125090SSL
125x110	400	192	169	92	4609	TRVP16125110SSL
140x63	630	283	178	151	6273	TRVP16140063SSL
140x75	630	285	178	86	6383	TRVP16140075SSL
140x90	630	291	178	101	6591	TRVP16140090SSL
140x110	630	303	178	119	6,890	TRVP16140110SSL
140x125	630	309	178	143	7,248	TRVP16140125SSL
160x63	462	195	213	160	7.202	TRVP16160063SSL
160x75	462	201	213	92	7,313	TRVP16160075SSL
160x90	462	206	213	107	7,514	TRVP16160090SSL
160x110	462	214	213	126	7,761	TRVP16160110SSL
160x125	462	222	213	69	8,093	TRVP16160125SSL
160x140	462	225	213	178	8.450	TRVP16160140SSL

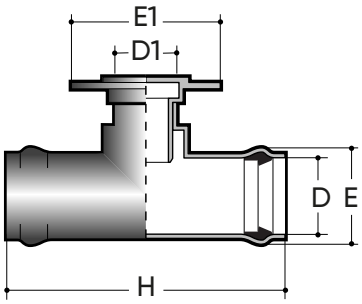


90° flanged tee PN10
(TRFLA)

Shunt reduced to 90° flanged PVC-U, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

D x D1 (mm)	E (mm)	E1 (mm)	ØA x nr. Holes (mm)	H (mm)	Weight (gr)	PN10 Code
63x50	92	168	125x4	274	1.125	TFVP10063050SBL
75x50	107	168	125x4	300	1,580	TFVP10075050SBL
75x65	107	188	145x4	300	1,590	TFVP10075065SBL
90x50	126	168	125x4	330	1,925	TFVP10090050SBL
90x65	126	188	145x4	330	2.110	TFVP10090065SBL
90x80	126	203	160x8	330	2.530	TFVP10090080SBL
110x50	151	168	125x4	370	2,696	TFVP10110050SBL
110x65	151	168	145x4	370	2,920	TFVP10110065SBL
110x80	151	203	160x8	370	3,240	TFVP10110080SBL
110x100	151	222	180x8	370	3,920	TFVP10110100SBL
125x50	169	168	125x4	400	3,790	TFVP10125050SBL
125x65	169	188	145x4	400	3,952	TFVP10125065SBL
125x80	169	203	160x8	400	4.123	TFVP10125080SBL
125x100	169	222	180x8	400	4,534	TFVP10125100SBL
125x110	169	230	190x8	400	5,440	TFVP10125110SBL
140x50	189	168	125x4	426	4,796	TFVP10140050SBL
140x65	189	188	145x4	426	4,995	TFVP10140065SBL
140x80	189	203	160x8	426	5,320	TFVP10140080SBL
140x100	189	222	180x8	426	5,870	TFVP10140100SBL
140x110	189	230	190x8	426	6.000	TFVP10140110SBL
140x125	178	251	210x8	630	7,850	TFVP10140125SBL
160x50	213	168	125x4	462	6.200	TFVP10160050SBL
160x65	213	188	145x4	462	6,335	TFVP10160065SBL
160x80	213	203	160x8	462	6,510	TFVP10160080SBL
160x100	213	222	180x8	462	6,954	TFVP10160100SBL
160x110	213	230	190x8	462	7,384	TFVP10160110SBL
160x125	213	251	210x8	462	7,895	TFVP10160125SBL
160x150	213	290	240x8	462	9,340	TFVP10160150SBL
180x180	224	318	270x8	780	9.600	TFVP10180180SBL
200x50	262	168	125x4	545	9,870	TFVP10200050SBL
200x65	262	188	145x4	545	10,080	TFVP10200065SBL
200x80	262	203	160x8	545	10,435	TFVP10200080SBL
200x100	262	222	180x8	545	10,880	TFVP10200100SBL
200x110	262	230	190x8	545	11,304	TFVP10200110SBL
200x125	262	251	210x8	545	12,060	TFVP10200125SBL
200x150	262	290	240x8	545	13,345	TFVP10200150SBL
200x200	262	340	295x8	545	14,490	TFVP10200200SBL
225x150	276	290	240x8	906	21,450	TFVP10225150SBL
225x200	276	340	295x8	906	23,720	TFVP10225200SBL
250x225	305	396	350x12	994	28.025	TFVP10250225SBL
280x280	342	399	350x12	1,180	32,200	TFVP10280280SBL
*315x300	381	465	400x12	1,176	53,100	TFVP08315300SBL

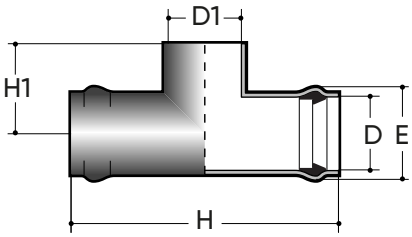
* PN 8



90° flanged tee PN16
(TRFLA)

Shunt reduced to 90° flanged PVC-U, Grey RAL 7011, Rubber ring connection, FORSHEDA 601 POWER-LOCK® on request

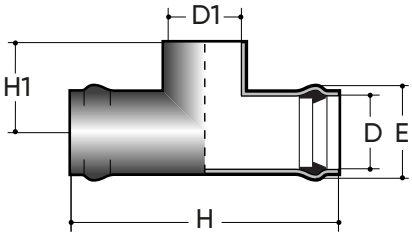
D x D1 (mm)	E (mm)	E1 (mm)	ØA x nr. Holes (mm)	H (mm)	Weight (gr)	PN16 Code
63x50	274	92	168	125x4	1,463	TFVP16063050SBL
75x50	300	107	168	125x4	2,054	TFVP16075050SBL
75x65	300	107	188	145x4	2,067	TFVP16075065SBL
90x50	330	126	168	125x4	2.503	TFVP16090050SBL
90x65	330	126	188	145x4	2.743	TFVP16090065SBL
90x80	330	126	203	160x8	3,289	TFVP16090160SBL
110x50	370	151	168	125x4	3,505	TFVP16110050SBL
110x65	370	151	168	145x4	3796	TFVP16110065SBL
110x80	370	151	203	160x8	4212	TFVP16110160SBL
110x100	370	151	222	180x8	5096	TFVP16110100SBL
125x50	400	169	168	125x4	4927	TFVP16125050SBL
125x65	400	169	188	145x4	5138	TFVP16125065SBL
125x80	400	169	203	160x8	5360	TFVP16125160SBL
125x100	400	169	222	180x8	5,894	TFVP16125100SBL
125x110	400	169	230	190x8	7,072	TFVP16125110SBL
140x50	426	189	168	125x4	6,235	TFVP16140050SBL
140x65	426	189	188	145x4	6,494	TFVP16140065SBL
140x80	426	189	203	160x8	6,916	TFVP16140160SBL
140x100	426	189	222	180x8	7,631	TFVP16140100SBL
140x110	426	189	230	190x8	7,800	TFVP16140110SBL
140x125	630	178	251	210x8	10,205	TFVP16140125SBL
160x50	462	213	168	125x4	8,060	TFVP16160050SBL
160x65	462	213	188	145x4	8.236	TFVP16160065SBL
160x80	462	213	203	160x8	8,463	TFVP16160160SBL
160x100	462	213	222	180x8	9,040	TFVP16160100SBL
160x110	462	213	230	190x8	9,599	TFVP16160110SBL
160x125	462	213	251	210x8	10,264	TFVP16160125SBL
160x150	462	213	290	240x8	12,142	TFVP16160150SBL



90° tee for PN10 gluing
(Monolithic TETRA)

90° bypass PVC-U, Grey RAL 7011, Rubber Ring connection/gluing

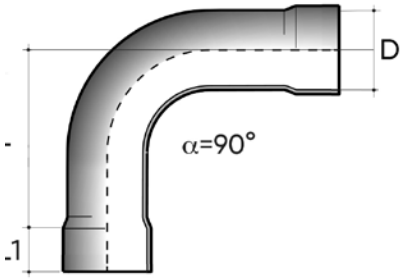
D - D1 (mm)	H (mm)	H1 (mm)	E (mm)	Weight (gr)	PN10 Code
63	274	77	92	630	TGVP10063ISL
75	300	90	107	915	TGVP10075ISL
90	330	107	126	1,575	TGVP10090ISL
110	370	129	151	2.450	TGVP10110ISL
125	400	144	169	3,350	TGVP10125ISL
140	650	153	189	6,340	TGVP10140ISL
160	462	186	213	7.000	TGVP10160ISL
200	545	229	262	9.800	TGVP10200ISL



90° tee for gluing PN16
(Monolithic TETRA)

90° bypass PVC-U, Grey RAL 7011, Rubber Ring connection/gluing

D - D1 (mm)	H (mm)	H1 (mm)	E (mm)	Weight (gr)	PN16 Code
63	274	77	92	760	TGVP16063ISL
75	300	90	107	1,100	TGVP16075ISL
90	330	107	126	1,890	TGVP16090ISL
110	370	129	151	2.950	TGVP16110ISL
125	400	144	169	4.000	TGVP16125ISL
140	650	153	189	7,600	TGVP16140ISL
160	462	186	213	8.400	TGVP16160ISL

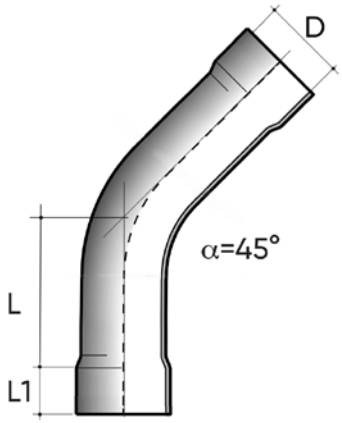


Thermoformed bend R=1.5D 90° F/F PN10
(THERMOFORMED CURVES)

Bend PVC-U, F/F, Grey RAL 7011, gluing connection

D (mm)	L (mm)	L1 (mm)	PN10 Code
50	92	35	B9VP10050IIL
63	102	43	B9VP10063IIL
75	118	51	B9VP10075IIL
90	142	58	B9VP10090IIL
*110	175	70	B9VP12110IIL
*125	200	79	B9VP12125IIL
*140	236	87	B9VP12140IIL
*160	260	99	B9VP12160IIL
*200	330	122	B9VP12180IIL

*PN12,5



Thermoformed bend R=1.5D 45° F/F PN10
(THERMOFORMED CURVES)

Bend PVC-U, F/F, Grey RAL 7011, gluing connection

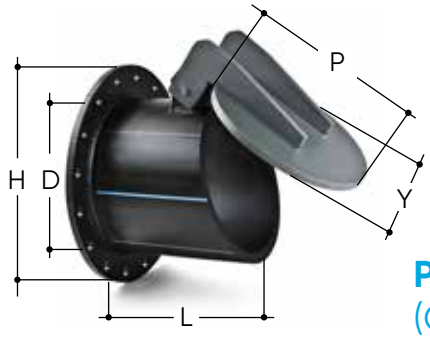
D (mm)	L (mm)	L1 (mm)	PN10 Code
50	40	35	B4VP10050IIL
63	46	43	B4VP10063IIL
75	54	51	B4VP10075IIL
90	63	58	B4VP10090IIL
*110	80	70	B4VP12110IIL
*125	89	79	B4VP12125IIL
*140	98	87	B4VP12140IIL
*160	119	99	B4VP12160IIL
*200	143	122	B4VP12180IIL

*PN12,5

PVC sewer guillotine gate

PVC gate

D (mm)	Code
110	SEVP001100SL
125	SEVP001250SL
160	SEVP001600SL
200	SEVP002000SL
250	SEVP002500SL
315	SEVP003150SL
400	SEVP004000SL
500	SEVP005000SL
630	SEVP006300SL



PE Clapet Valve (CLAPET)

Polyethylene Clapet Valve

D (mm)	H (mm)	L (mm)	Y (mm)	P (mm)	Flanges	Code
200	280	150	280	220	UNI PN10	CLVP10200BL
250	400	330	350	345	UNI PN10	CLVP10250BL
315	450	380	400	410	UNI PN10	CLVP10315BL
400	540	410	485	495	UNI PN10	CLVP10400BL
500	680	530	590	620	UNI PN10	CLVP10500BL
630	770	560	715	730	UNI PN10	CLVP10630BL

PN10 Flanged HDPE Line Hydrant

Flanged HDPE Line HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN10 Code
110	100	1000	ITVP101100BL
125	100	1000	ITVP101250BL
140	100	1000	ITVP101400BL
160	150	1000	ITVP101600BL
180	150	1000	ITVP101800BL
200	150	1000	ITVP102000BL
225	150	1000	ITVP102250BL
250	150	1000	ITVP102500BL
280	150	1000	ITVP102800BL
315	150	1000	ITVP103150BL

PN16 Flanged HDPE Line Hydrant

Flanged HDPE Line HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN16 Code
110	100	1000	ITVP161100BL
125	100	1000	ITVP161250BL
140	100	1000	ITVP161400BL
160	150	1000	ITVP161600BL
180	150	1000	ITVP161800BL
200	150	1000	ITVP162000BL
225	150	1000	ITVP162250BL
250	150	1000	ITVP162500BL
280	150	1000	ITVP162800BL
315	150	1000	ITVP163150BL

PN10 Flanged HDPE Inlet Hydrant

Flanged HDPE Inlet HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN10 Code
110	100	1000	ISVP101100BL
125	100	1000	ISVP101250BL
140	100	1000	ISVP101400BL
160	100	1000	ISVP101600BL
180	150	1000	ISVP101800BL
200	150	1000	ISVP102000BL
225	150	1000	ISVP102250BL
250	150	1000	ISVP102500BL
280	150	1000	ISVP102800BL
315	150	1000	ISVP103150BL

PN16 Flanged HDPE Inlet Hydrant

Flanged HDPE Inlet HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN16 Code
110	100	1000	ISVP161100BL
125	100	1000	ISVP161250BL
140	100	1000	ISVP161400BL
160	100	1000	ISVP161600BL
180	150	1000	ISVP161800BL
200	150	1000	ISVP162000BL
225	150	1000	ISVP162250BL
250	150	1000	ISVP162500BL
280	150	1000	ISVP162800BL
315	150	1000	ISVP163150BL

PN10 Flanged HDPE End-of-Line Hydrant

Flanged HDPE End-of-Line HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN10 Code
110	100	1000	ILVP101100BL
125	100	1000	ILVP101250BL
140	100	1000	ILVP101400BL
160	100	1000	ILVP101600BL
180	150	1000	ILVP101800BL
200	150	1000	ILVP102000BL
225	150	1000	ILVP102250BL
250	150	1000	ILVP102500BL
280	150	1000	ILVP102800BL
315	150	1000	ILVP103150BL

Flanged HDPE end-of-line hydrant PN16

Flanged HDPE End-of-Line HYDRANT

Ø (mm)	DN (mm)	H (mm)	PN16 Code
110	100	1000	ILVP161100BL
125	100	1000	ILVP161250BL
140	100	1000	ILVP161400BL
160	100	1000	ILVP161600BL
180	150	1000	ILVP161800BL
200	150	1000	ILVP162000BL
225	150	1000	ILVP162250BL
250	150	1000	ILVP162500BL
280	150	1000	ILVP162800BL
315	150	1000	ILVP163150BL

SPARE PARTS AND ACCESSORIES

Pressure seal

Rubber gasket

D (mm)	Code
40	GUARP040
50	GUARP050
63	GUARP063
75	GUARP075
90	GUARP090
110	GUARP110
125	GUARP125
140	GUARP140
160	GUARP160
180	GUARP180
200	GUARP200
225	GUARP225
250	GUARP250
280	GUARP280
315	GUARP315
355	GUARP355
400	GUARP400

Slippery

1 litre jar

U.M. jar	Code
Lit. 1	78001

Item specifications
PVC-U system

PURPOSE OF THE SUPPLY

Supply of PVC-U pipes, free of plasticizing fillers, intended for conveying pressurized fluids, underground and above ground, produced in accordance with UNI EN ISO 1452. The pipes suitable for the construction of aqueduct networks, irrigation systems and pressure sewers also comply with sanitary hygiene requirements:

For France: A.C.S. (Attestation de Conformité Sanitaire) issued by I.P.L.

For Britain: Use for public water supply is certified by WRAS (Water Regulations Advisory Scheme).

For Germany: Potability is issued by the Hygiene-Institut on behalf of DVGW.

For Italy, the Decree of the Minister of Health D.M. 21.03.1973, the Health Ministerial Circular no. 102 of 02/12/1978 - Ministerial Decree no.174 of 06/04/2004 "Regulation concerning materials and objects that can be used in fixed systems for the collection, treatment, supply and distribution of water intended for human consumption" and the UNI EN 1622 standard (Odour and taste threshold), having the following characteristics:

Nominal diameter (O):

Pressure class (PN):

PVC-U polymer alloy pipes can be supplied in a smooth configuration, with a thermoformed gluing cup connection or with a POWER-LOCK type cup joint system with an integrated gasket mechanically pre-inserted with heat during the cup formation phase such as to make it totally integral.

The seal, without metal inserts inside, will consist of an EPDM elastomer element in accordance with UNI EN 681-1 co-moulded with a yellow reinforced polypropylene stiffening ring to guarantee perfect immovability.

RAW MATERIAL REQUIREMENTS

The mixture used to manufacture the pipes must comply with UNI EN ISO 1452-1 and consist of PVC, inert fillers, RAL 7011 colour, stabilisers and other additives in the quantities strictly necessary to facilitate the extrusion operations, while guaranteeing the stability of the polymer characteristics both during processing and during the useful life of the product. The material used for the pipes must have a minimum required resistance (MRS), as defined in the UNI EN 1452-1 standard, of at least 25 MPa.

QUALITY SYSTEM AND CERTIFICATIONS

The pipes must also be produced by companies with a quality, environmental and safety management system in accordance with the UNI EN ISO 9001, UNI EN ISO 14001 and ISO 45001:2018 standards respectively, certified by an accredited body according to UNI CEI EN ISO/IEC 17021.

LELRTPVC – 11/2024

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UNI EN ISO 9001 QUALITY

UNI EN ISO 14001 ENVIRONMENTAL MANAGEMENT

UNI ISO 45001 SAFETY

aliaxis