

# U-PVC pipes for conducts of fluids under pressure

## Standard compliance: UNI EN ISO 1452-2

Lareter PVC pipes are produced in accordance with International Standard UNI EN ISO 1452-2: 2010 norm, which specifies the characteristics of solid-wall pipes made from unplasticized polyvinyl chloride (PVC-U) for piping systems intended for water supply and for buried and above-ground drainage and sewerage under pressure.

In accordance with this Standard pipes colour is RAL 7011.



Italy



England



France



Russia



Germany



Marine

## Hygienical requirements:

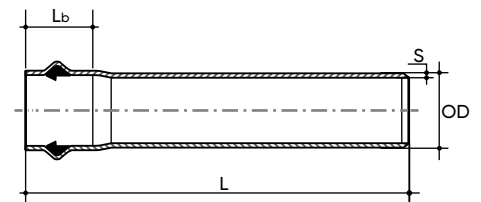
**Italy** Lareter U-PVC pipes for pressure conducts correspond to the Italian hygienical requirements according to the "Ministry of Health" D.M. 21.03.1973 and D.M. 174/2004;

**France** the A.C.S. (Attestation de Conformité Sanitaire) released by I.P.L.;

**England** the use of the delivery of public water is WRAS (Water Regulations Advisory Scheme) approved product;

**Germany** potability released by Hygiene-Institut on behalf of DVGW.

OD Ø est. (mm)	Thickness (mm)					Lb (mm) Forsheda Ring	Packaging	
	PN 6	PN 10	PN 12,5	PN 16	PN 20		Pipes x Pallet	Pallet Height
20	-	-	-	1,5	1,9	-	1166	475
25	-	-	1,5	1,9	2,3	-	757	475
32	-	1,6	1,9	2,4	2,9	-	449	475
40	1,5	1,9	2,4	3	3,7	-	275	475
50	1,6	2,4	3	3,7	4,6	-	194	500
63	2	3	3,8	4,7	5,8	110	123	500
75	2,3	3,6	4,5	5,6	6,8	120	87	500
90	2,8	4,3	5,4	6,7	8,2	130	96	735
110	2,7	4,2	5,3	6,6	8,1	130	57	675
125	3,1	4,8	6	7,4	9,2	150	51	765
140	3,5	5,4	6,7	8,3	10,3	160	45	840
160	4	6,2	7,7	9,5	11,8	165	33	815
180*	4,4	6,9	8,6	10,7	13,3	170	28	870
200	4,9	7,7	9,6	11,9	14,7	180	20	815
225	5,5	8,6	10,8	13,4	16,6	200	18	900
250	6,2	9,6	11,9	14,8	18,4	210	12	780
280	6,9	10,7	13,4	16,6	20,6	210	11	870
315	7,7	12,1	15	18,7	23,2	230	9	950
355	8,7	13,6	16,9	21,1	26,1	250	5	815
400	9,8	15,3	19,1	23,7	29,4	250	5	900
500	12,3	19,1	23,9	29,7	-	255	2	600



### Below a few notes about the packaging:

- Packaging width is always 1200 mm;
- Packaging length is equal to pipelength plus 200 mm for pipes with ring (for plain pipes there isn't the increase of 200 mm);
- Packaging height depends from the external diameter as shown in the last column.

### Concerning Lb, a small tolerance must be considered:

- ± 2 mm until Ø 110;
- ± 4 mm for the other pipes.
- ± 4 mm per tutti gli altri tubi.

\* EPDM standard gasket

## Connection

### Rubber ring socket type Forsheda "Power Lock"



#### Description

This is an integrated sealing system for plastic pressure pipes consisting of:

- A flexible rubber element to seal effectively spigot and socket;
- A polypropylene reinforcement element, bonded to the rubber, which holds the seal firmly in place.

#### Its main advantages are the following:

- **Joint reliability:** less reject rate, minimal risk of seal displacement, high seal performance;
- **Low assembly forces:** saving in pipe assembly and manpower, no special machines needed;
- **Deflection Capability up to 3°:** minimal risk of incident, complaint and pipe displacement.

#### Rubber Material

Synthetic EPDM rubber
Hardness 50 ± IRDH
Approved in accordance with EN 681-1
Ozone resistant
Approved for contact with cold potable water

### Physical and mechanical characteristics

Properties	Unit	Values	Methods
Minimum resistance required within 50 years MRS	Mpa	≥ 25	ISO 9080
Specific weight	gr/cm <sup>3</sup>	1,35 + 1,46	ISO 1183
Yield load	Mpa	≥ 45	EN ISO 6259
Yield elongation	%	≥ 80	EN ISO 6259
Young's modulus	Mpa	-3000	EN ISO 6259
Coefficient of thermal linear expansion	mm/m°C	-0,06	ISO 11359-2
Content of Vinylchloride-monomer	ppm	< 1	ISO 6401
Longitudinal tension	%	≤ 5	ISO 2505
Softening temperature (VICAT degree)	°C	> 80	ISO 2507
Opacity	%	≤ 0,2	ISO 7686
Impact strenght	%	≤ 010	EN 744
Resistance to internal pressure			
1h at 20°C 42 Mpa	Hours	> 1	ISO 1167
1000h at 60°C 12,5 Mpa	Hours	> 1000	ISO 1167
Tightness of joints against internal pressure	Hours	> 1	ISO 1167
Shore hardness D	-	80 + 84	ASTM D676
Thermal conductivity	Kcal/h m°C	-0,13	DIN 52612

### Working services

Depending on temperatures, the working pressure changes as shown in the table at right (in accordance with UNI EN ISO 1452-2).

Category	Temperature (°C)	WORKING PRESSURE (bar)		
		PN 6	PN 10	PN 16
PVC-U	20	6	10	16
PVC-U	40	4	6	8
PVC-U	60	-	2	3

### Correspondence between nominal pressure and ring rigidity

Lareter PVC pressure pipe can be suitable for drain back fluids.

In this case the mechanical quantity is Ring Rigidity SN (KN/m<sup>2</sup>).

Properties	Values				
PN (bar)	6	10	12,5	16	20
SN (KN/m <sup>2</sup> )	4	16	32	61	99