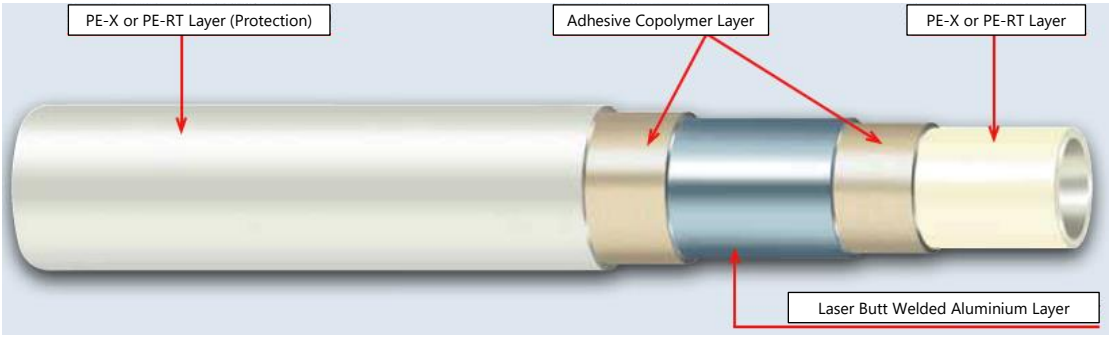
1. PRODUCT DESCRIPTION

PEX-Al-PEX multilayer pipes are an evolution of PEX pipes. Multilayer pipes have two layers of cross-linked polyethylene (PEX), two layers of adhesive and an intermediate layer of aluminium.



2. PROPERTIES OF MULTILAYER PIPE

PEX-AL-PEX multilayer pipes have the following physical and mechanical properties:

Physical and Mechanical Properties	
Linear dilatation	0,025 mm/m·K
Thermal conductivity	R=0,4 W/m·K
Max. work temperature	95ºC
Max. point temperature	110ºC
Max. work pressure	10 bar at 95ºC
Roughness	E=0,0004 mm
Density	1,47 g/cm^3
Oxygen permeability	0 mg/l*d
Crosslinking degree	>65%

These properties are valid for BARBI PEX/AL/PEX y PERT/AL/PERT. Regarding BARBI PERT/AL/PERT multilayer pipes, the maximum working pressure is limited to 6 bar.

The aluminium layer is butt welded, which makes the pipe to have a higher resistance to pressure and the stresses that are generated when the pipes bend.

3. CHARACTERISTICS DEPENDING ON THE DIAMETER OF THE PIPE

	16×2	18×2	20×2	20×2,25	20×2,5	25×2,5	26×3	32×3	40×3,5	50×4	63×4,5
Outer diameter (mm)	16	18	20	20	20	25	26	32	40	50	63
Wall thickness (mm)	2	2	2	2,25	2,5	2,5	3	3	3,5	4	4,5
Inner diameter (mm)	12	14	16	15,5	15	20	20	26	33	42	54
Aluminium layer thickness (mm)	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,4	0,5	0,6	0,7
Outer diameter tolerance (mm)	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3
Inner diameter tolerance (mm)	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,5	-0,6	-0,8
Pipe weight (kg/m)	0,10	0,11	0,13	0,14	0,15	0,21	0,24	0,32	0,48	0,70	1,01
Inner volume (l/m)	0,11	0,15	0,20	0,19	0,18	0,31	0,31	0,53	0,86	1,39	2,29
Min. bending radius without spring	80	90	100	100	100	125	130	160	-	-	-
Max. bending radius with spring	64	72	80	80	80	100	104	160	-	-	-

4. THERMAL EXPANSION

		Difference of temperatures (ºC)							
		10	20	30	40	50	60	70	80
Pipe length (m)	0,1	0,03	0,05	0,08	0,10	0,13	0,15	0,18	0,20
	0,2	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
	0,3	0,08	0,15	0,23	0,30	0,38	0,45	0,53	0,60
	0,4	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80
	0,5	0,13	0,25	0,38	0,50	0,63	0,75	0,88	1,00
	0,6	0,15	0,30	0,45	0,60	0,75	0,90	1,05	1,20
	0,7	0,18	0,35	0,53	0,70	0,88	1,05	1,23	1,40
	0,8	0,20	0,40	0,60	0,80	1,00	1,20	1,40	1,60
	0,9	0,23	0,45	0,68	0,90	1,13	1,35	1,58	1,80
	1	0,25	0,50	0,75	1,00	1,25	1,50	1,75	2,00
	2	0,50	1,00	1,50	2,00	2,50	3,00	3,50	4,00
	3	0,75	1,50	2,25	3,00	3,75	4,50	5,25	6,00
	4	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00
	5	1,25	2,50	3,75	5,00	6,25	7,50	8,75	10,00
	6	1,50	3,00	4,50	6,00	7,50	9,00	10,50	12,00
	7	1,75	3,50	5,25	7,00	8,75	10,50	12,25	14,00
	8	2,00	4,00	6,00	8,00	10,00	12,00	14,00	16,00
	9	2,25	4,50	6,75	9,00	11,25	13,50	15,75	18,00
	10	2,50	5,00	7,50	10,00	12,50	15,00	17,50	20,00

Values of thermal expansion expressed in millimetres

5. DIMENSIONS AND PRESENTATION

Outer diameter	Thickness	Inner diameter	Colours	Presentation		Material	
				Bars	Rolls		
16	2,00	11,00	White	4,0	100 200 240 500	PEX/Al/PEX	PERT/Al/PERT
16	2,25	11,50	White	4,0	100 200	PEX/Al/PEX	-
18	2,00	14,00	White	4,0	100 200 240	PEX/Al/PEX	PERT/Al/PERT
20	2,00	16,00	White	4,0	100 240	PEX/Al/PEX	PERT/Al/PERT
20	2,25	15,50	White	4,0	100	PEX/Al/PEX	PERT/Al/PERT
20	2,50	15,00	White	4,0	100	PEX/Al/PEX	PERT/Al/PERT
25	2,50	20,00	White	4,0	50	PEX/Al/PEX	PERT/Al/PERT
26	3,00	20,00	White	4,0	50	PEX/Al/PEX	PERT/Al/PERT
32	3,00	26,00	White	4,0	50	PEX/Al/PEX	PERT/Al/PERT
40	3,50	33,00	White	4,0	-	PEX/Al/PEX	-
50	4,00	42,00	White	4,0	-	PEX/Al/PEX	-
63	4,50	54,00	White	4,0	-	PEX/Al/PEX	-

6. ADVANTAGES OF MULTILAYER PIPES BARBI MULTIPEX

- Resistance to high temperatures and pressures
- Lower coefficient of expansion
- Great behaviour against aging
- Frost resistance
- Low thermal conductivity
- No condensation
- Lightweight, allowing easy handling and transport
- Closed radius of curvature
- Non-conducting electricity: BARBI pipes do not produce any kind of galvanic corrosion
- Resistance to corrosion
- Low roughness
- Absence of lime scale and other deposits
- Long life
- Suitable for drinking water

7. ISOLATED MULTILAYER PIPES BARBI MULTIPEX

Main characteristic of the isolated multilayer pipes: a thermal isolation polyethylene foam, along with a protective external polyethylene layer is added to the multilayer pipes. Due to that isolation, the isolated multilayer pipes show the following advantages:

- Noise and vibrations in installations are reduced.
- Better resistance to building materials (concrete, cast, etc.)
- Better resistance to water
- Better resistance to solvents and water absorption.

Characteristics	
Description	Thermal isolation with high quality polyethylene
Material	Polyethylene foam
Application	Isolation of heating and water pipes
Outer layer thickness	0,2 mm
Foam thickness	6 mm for pipe diameters of 16, 18 and 20 9 mm for pipe diameters of 25, 26 and 32
Temperature range	From +10ºC to +95ºC
Thermal conductivity	0,038 W/m·K a 10ºC
Fire classification (Euroclass)	B_L s1 d0

8. REGULATIONS

MULTIPLEX multilayer pipes are manufactured according to the European standard UNE EN ISO 21003. They have among others, the Product Certificates issued by AENOR and CSTBat (French standard).

9. RECOMMENDATIONS

- Cut the tube with suitable scissors making sure that the cut is clean and the section cross
- Check that the end of the tube is free of burrs.