AC-FIX MULTILAYER PEX/AL/PE PIPES

AC-FIX MULTILAYER pipes are composed of an inner layer of PEX, an outer layer of PE and an intermediate layer of aluminum. These layers are bonded together with a special adhesive for high temperatures.

AC-FIX MULTILAYER pipes are manufactured according to the UNE-EN ISO 21003 standard and certified by AENOR according to said standard.
AC-FIX MULTILAYER pipes are compatible with AC-FIX PRESS-MULTI AND PRESS DUO FITTINGS AND VALVES.

FIELDS OF APPLICATION OF 50 YEARS (UNE-EN ISO 21003)

Application class	Design temperature T_D ºC	Time at T_D (Years)	T_{max} ºC	Time at T_{max} (Years)	T_{mal} ºC	Time at T_{mal} (hours)	Typical field of application
1[a]	60	49	80	1	95	100	Hot water supply (60ºC)
2[a]	70	49	80	1	95	100	Hot water supply (70ºC)
4[b]	20 Followed by 40 Followed by 60	2,5 20 25	70	2,5	100	100	Underfloor heating and and low temperature radiators
5[b]	20 Followed by 60 Followed by 80	14 25 10	90	1	100	100	High temperature radiators

T_D: Design temperature (normal work) T_{max}: Maximum temperature T_{mal}: Malfunction temperature

[a] A country may select either class 1 or class 2 to conform to its national regulations.
[b] Where more than one design temperature appears for any class, the times should be aggregated (for example: the design temperature profile for 50 years of class 5 is: 20ºC for 14 years, followed by 60ºC for 25 years, 80°C for 1 year and 100°C for 100 hours). This allows to simulate approximate real temperatures and times during a useful life of 50 years.

ADVANTAGES OF **AC-FIX MULTILAYER PEX/AL/PE** PIPES

AC-FIX MULTILAYER pipes combine the advantages of metal pipes and plastic pipes: dimensional stability, flexibility and resistance to corrosion.

- Very high flexibility. They can be bent manually while maintaining permanent shapes and curvatures.
- It is impermeable to the diffusion of oxygen.
- Low pressure drop and low acoustic transmission.
- Resistance to corrosion, abrasion and attack by chemical products.
- There are no adhesions and incrustations.
- Sanitary quality. Plastic pipes are totally non-toxic, not changing the properties of the fluid that goes inside (color, taste, smell).
- Resistance to all actions applied in the prevention and control of legionellosis.
- Its low coefficient of thermal conductivity reduces condensation and heat losses.
- Low coefficient of linear thermal expansion, allowing to be at the level of the metal tubes on that aspect.
- Aesthetics in visible heating and / or plumbing installations.
- AC-FIX MULTILAYER pipes comply with the provisions of Royal Decree 140/2003 “Criteria Hygienic-Sanitary of the quality of water for human consumption ”.
- They comply with the established precepts regarding construction materials of the CTE point 6.1. of the HS4 health document.

PROPERTIES OF **AC-FIX MULTILAYER PEX/AL/PE PIPES:**

MECHANICAL PROPERTIES	UNIT OF MEASUREMENT	VALUE	RULE
Linear dilation	mm/m ºK	0.025	ASTM D-696
Thermal conductivity at 60ºC	W/mºK	0.40	DIN 52612-1
Coefficient of thermal expansion	10^{-4}/K	1.8	DIN 53752 A
Tensile adhesion	N/cm	≥ 25	UNE-EN ISO 21003
Tensile adhesion after temperature cycling	N/cm	≥ 15	UNE-EN ISO 21003
Elongation at break	%	400	DIN 53455
Rugosity	mm	0.007	
O2 permeability	g/m3d	< 0.001	
Burst pressure	bar	80	
Induction time to oxidation	min	> 20	UNE-EN 728
Density	Kg/m3	> 947	ISO 1183
Thermal stability (110º, 1,9MPa, 8760h)	bar	Not break	UNE-EN 921
Melt index (mass)	%	+/- 20	UNE-EN ISO 1133
Volatile mass content	mg/Kg	< 350	UNE-EN 12099
Specific weight	g/cm2	2.7	EN 485-2
Breaking strain	N/mm²	90 - 140	EN 485-2
Elongation A50	%	30	EN 485-2
$R_{p0.2}$	MPa	> 30	EN 485-2