

# ALUPEX

## MULTILAYER PIPE



**ALUPEX** is a three-layer composite pipe that combines the advantages of a metal and plastic pipe and eliminates the disadvantages of both materials at the same time.

The inner layer is made of electron beam **cross-linked polyethylene (PE-Xc)** in compliance with UNI EN ISO 21003 requirements. This method ensures improved resistance to high temperature (up to 95°C at a pressure of 10 bar), mechanical wear and tear and a smoother surface preventing calcareous sedimentation and corrosion.

In addition, since the PE-Xc method is also a physical method which uses no chemical additives, the inner pipe is odour-proof, absolutely safe from a toxicological point of view and neutral in contact with drinking water.

The core layer is made of longitudinally butt-welded aluminium. This guarantees flexibility, pressure-resistance, oxygen-tightness, shape-retaining after bending, minimal thermal expansion, perfect distribution of press loads.

The outer layer is made of polyethylene cross-linked by using chemical additives (PE-Xb). It provides high shock-resistance and prevents the aluminium layer to be permeated by ground source contaminants and ground water.

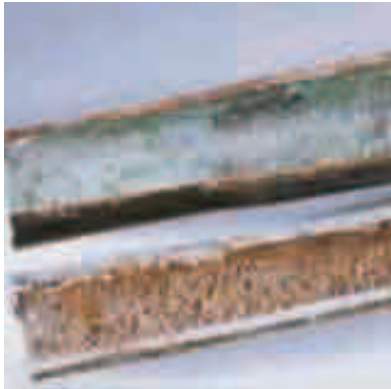
The three layers are bonded to each other by primer layers providing higher flexibility to the pipe.

This latter can be easily bent (also by hand) many times and it still retains its curved shape without springing back, causing stress cracks or need for additional brackets.

**ALUPEX** pipes can be supplied with closed-cell expanded PE foam insulation (thickness 6mm or 9mm), in accordance with Italian UNI CTC 10376 and decree-law on energy saving and rational use of energy resources.

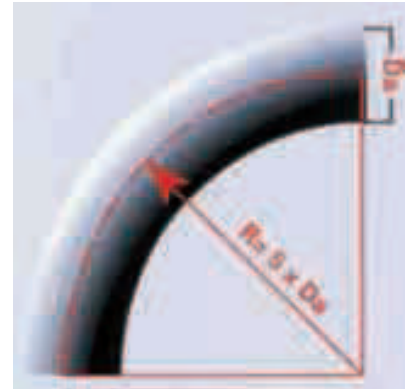
# ALUPEX

## MAIN PROPERTIES



### Installation in conjunction with other materials

In the event of installation in conjunction with existing systems made of different materials (i.e. iron), cross-linked polyethylene offers high resistance against chemical and electro-chemical corrosion due to its insensitivity to stray current. Therefore, there is no need for additional protection.



### Excellent corrosion-resistance

Inner and outer layers are made of cross-linked polyethylene which provides excellent resistance to corrosion, sedimentation, erosion and contamination, thus guaranteeing maximum hygiene when transporting fluids for human consumption.

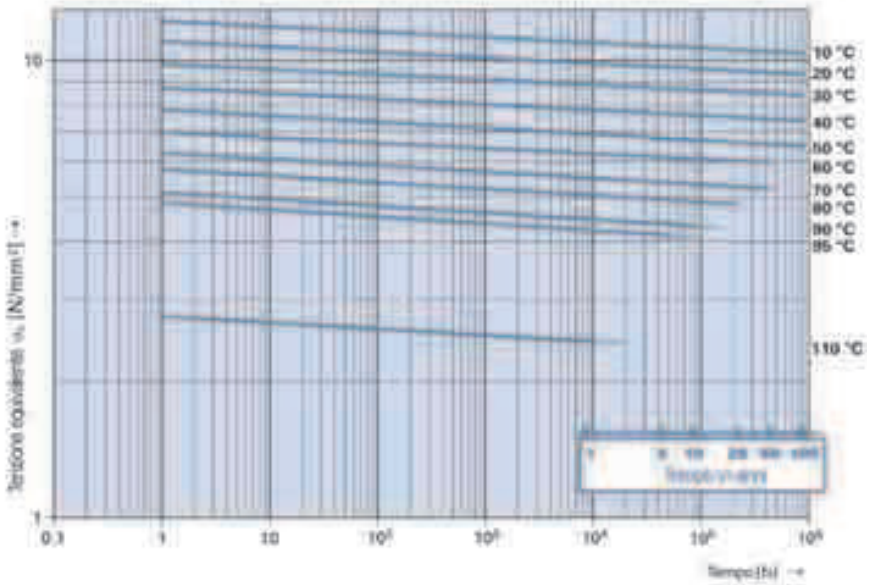


### Bend radius

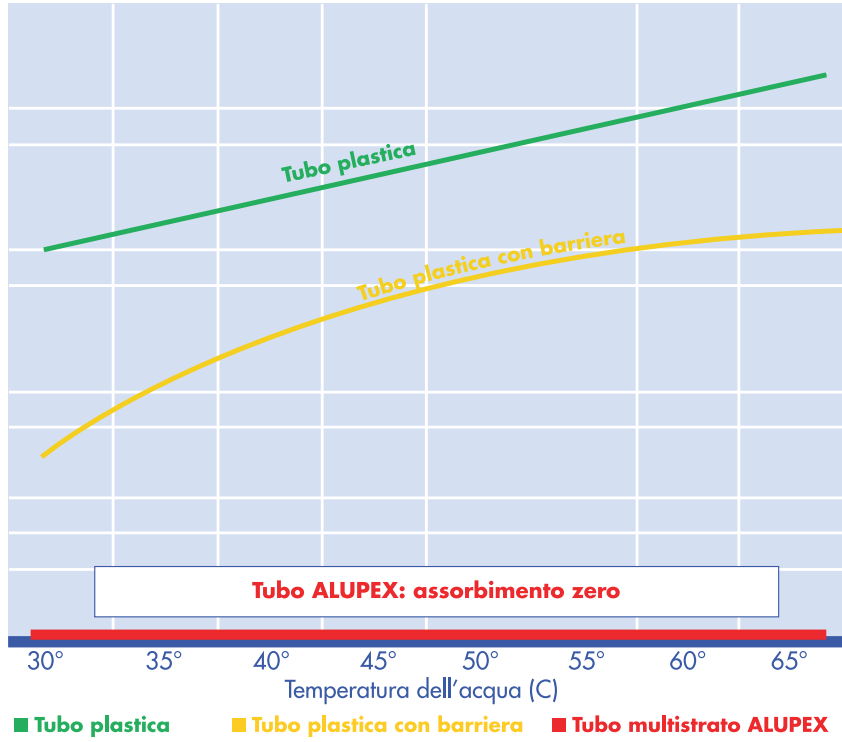
Cross-linked polyethylene pipes are extremely flexible. They can be bent into any shape either by hand or by using a bending tool, without losing their ability to return to the shape they were bent to. In addition, the bend radius allows more accentuated curvatures, thus reducing the quantity of fittings to be used during installation.

TECHNICAL DATA						TABLE 2	
	14x2	16x2,25	20x2,5	26x3	32x3	40x3,5	50x4
by hand	5xDE	5xDE	5xDE	5xDE	-	-	-
by bending tool	3,5x DE	3,5x DE	3,5x DE	3,5x DE	3,5x DE	3,5x DE	3,5x DE

The working life of a multilayer pipe depends on temperature and pressure in the pipe. The straight lines in the diagram show which pressure the pipe can resist at a certain age and different water temperatures, when absorbed 10 ml. oxygen per gram. When used within the limits of this regression curve, our pipe will perfectly withstand hot temperatures over a long period of time (at least 50 years).



The diagram shows the amount of oxygen that can permeate through plastic pipes, plastic pipes with oxygen barrier and Alupex multilayer pipes. These latter are completely oxygen-proof thanks to the aluminium layer preventing the penetration of the oxygen in the pipe.



## FITTINGS

Alupex fittings are manufactured in compliance with Italian decree nr. 174 of 6 April 2004 concerning materials and objects to be used in permanent plants for the collection, treatment, supply and distribution of water for human consumption.

Alupex fitting range consists of screw (Europ) and press (Express) fittings. Both are made from a brass alloy, namely CuZn40Pb2 (Europ) and CuZn36Pb2As (Express), in accordance with following European standards:

UNI EN 12165 - Copper and copper alloys – Wrought and unwrought forging stock

UNI EN 12168 - Copper and copper alloys – Hollow rod for free machining purposes

UNI EN 12420 - Copper and copper alloys - Forgings

In addition, Europ joints are compliant with European standard UNI EN 681-1, material requirements for pipe joint seals used in water and drainage applications.



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Georg Fischer S.p.A.  
Via Sondrio 1 - 20063 Cernusco S/N (MI)  
Tel. +39 02 921861 - Fax + 39 02 92140785  
[it.ps@georgfischer.com](mailto:it.ps@georgfischer.com)  
[www.georgfischer.it](http://www.georgfischer.it)