



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



**PRODUCT
CODE**

**PF PEXA 504
PF PEXA 505**

**CROSS-LINKED POLYETHYLENE PIPE
PEX-A WITH EVOH LAYER**

1. PURPOSE AND SCOPE

Cross-linked polyethylene pipe PEX-A with EVOH layer is designed for installation of hot- and cold-water systems, cooling and heating systems in residential and public buildings. Used in drinking and household purpose piping, as well as for transporting fluids that are non-aggressive to pipe materials. PF PEXA 505 pipes are used in underfloor heating systems.

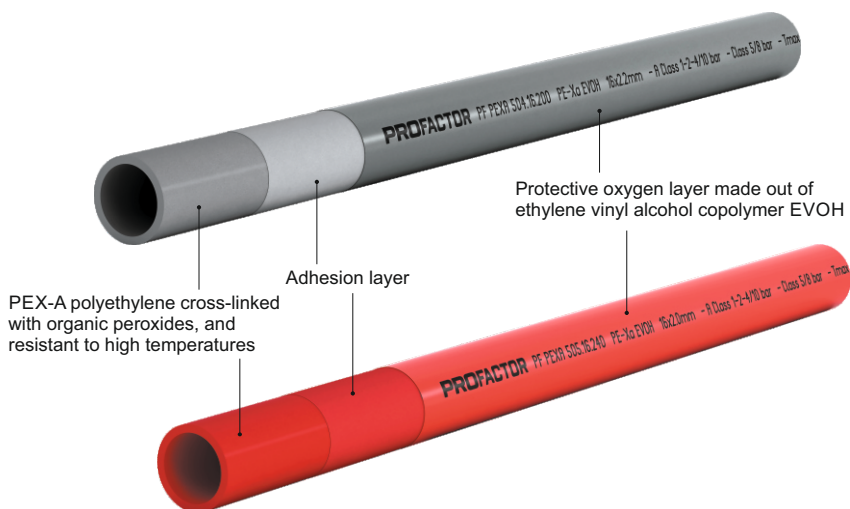
2. TECHNICAL SPECIFICATIONS

Product Code	PF PEXA 504					PF PEXA 505	
	PF PEXA	504.16	504.20	504.25	504.32	505.16	505.20
Outer diameter of the pipe	mm	16	20	25	32	16	20
Inner diameter of the pipe	mm	11,6	14,4	18	23,2	12	16
Wall thickness	mm	2,2	2,8	3,5	4,4	2,0	2,0
EVOH layer thickness	mkm	≥ 80					
Weight	kg/m	0,099	0,150	0,235	0,375	0,092	0,115
Packaging (coil/length)	m	100, 200	100	50	50	120, 240 360, 600	100, 200
Water content per 1 running meter of the pipe	l	0,105	0,163	0,254	0,423	0,113	0,201
Operating temperature at 8 bar pressure	°C	90					
Operating temperature at 10 bar pressure	°C	90				70	
Maximum operating pressure	bar	10					8
Maximum operating temperature	°C	95					
Maximum short-term allowable temperature	°C	100					
Oxygen diffusion	mg/m²	< 0,1					
Coefficient of thermal linear expansion	mm/(m•K)	0,15					
Thermal conductivity	W/(m•K)	0,38					
Internal surface roughness	mm	0,007					
Elongation at break	%	> 415					
Minimum manual bend radius	mm	96	120	150	192	96	120
Minimum bend radius with a pipe bending spring	mm	80	100	125	160	80	100
EVOH layer density	kg/m³	1190					
PEX-A layer density	kg/m³	940					
PEX-A cross linking degree	%	> 70					
Pipe color	—	grey				red	
Minimum installation temperature	°C	0					
Transportation and storage temperature	°C	-50 to +50					
Service life expectancy when conforming to the directions for use and maintenance	years	50					

3. STRUCTURE OF CROSS-LINKED POLYETHYLENE PIPE PEX-A WITH EVOH LAYER

The pipe consists of two layers: the main inner layer of cross-linked high-molecular-weight polyethylene PEX-A, and a protective oxygen layer made out of ethylene-vinyl alcohol copolymer EVOH, all interconnected by two adhesion layers.

Due to this structure, the pipe has many unique advantages: usability at high pressure and high temperature of the working medium; great strength and flexibility; low weight; resistance to corrosion; ease of installation using axial fittings without O-rings, as due to the «memory effect» the pipe tries to restore the original shape after expanding, bending or heating up.



4. NOMENCLATURE AND DIMENSIONS



Cross-linked polyethylene pipe PEX-A with EVOH layer, all-purpose (grey)

Product Code	Pipe dimensions, mm			Pipe length in coil, m	Coil weight, kg
	Outer diameter	Inner diameter	Wall thickness		
PF PEXA 504.16.100	16	11,6	2,2	100	9,9
PF PEXA 504.16.200	16	11,6	2,2	200	19,8
PF PEXA 504.20.100	20	14,4	2,8	100	15,0
PF PEXA 504.25.50	25	18	3,5	50	11,8
PF PEXA 504.32.50	32	23,2	4,4	50	18,8

Cross-linked polyethylene pipe PEX-A with EVOH layer, for underfloor heating (red)



Product Code	Pipe dimensions, mm			Pipe length in coil, m	Coil weight, kg
	Outer diameter	Inner diameter	Wall thickness		
PF PEXA 505.16.120	16	12	2	120	11,1
PF PEXA 505.16.240	16	12	2	240	22,1
PF PEXA 505.16.360	16	12	2	360	33,1
PF PEXA 505.16.600	16	12	2	600	55,2
PF PEXA 505.20.100	20	16	2	100	11,5
PF PEXA 505.20.200	20	16	2	200	23

5. INSTALLATION DIRECTIONS

Installation of cross-linked polyethylene pipes PEX-A with EVOH layer must be carried out at an ambient temperature of 0°C or above using a tool expressly designed for this. In addition, pipe coils that have been transported or stored before at a temperature below 0°C must be kept for 24 hours at a temperature of 10°C or above before being unrolled.

Breaking and flattening of the pipes during installation is not allowed. In case of a «kink», the damaged section of the pipe must be removed. When laying pipes, tensile stresses must be avoided. The free ends of the pipes must be closed with plugs to stop dirt and debris from entering the pipe.

The underfloor heating pipework should be covered with a coating or concrete only after completion of hydraulic tests for tightness. When pouring, the pipe must remain under pressure of 0.3 MPa. The minimum height of the filling above the pipe must be at least 3 cm.

Pipes must be connected using special axial fittings with a slip-on sleeve for PF PEXA 504 pipes or using axial connectors of «eurocone» type for PF PEXA 504 and PF PEXA 505 pipes.

Before connecting cross-linked polyethylene pipes using axial fittings with a slip-on sleeve cut the pipe strictly perpendicularly to the pipe's axis, then calibrate the end of the pipe and chamfer the inner diameter. Install on the pipe the slip-on sleeve, so that the sleeve markings are on the side opposite of the pipe cut. The distance between the pipe end and the sleeve must be twice the length of the sleeve. Insert the expander into the pipe and expand the pipe to the permitted size. Turn the expander 30° and expand the pipe again. Install the pipe onto the fitting connector.

Install into the axial grip the neck of the fitting and the sleeve. Slide the sleeve onto the fitting. Make sure that the mounted sleeve has slipped all the way onto the fitting body.

Do not use lubricants for installation!

After installation, the units of sanitary systems must be tested for tightness. They have to be put through a hydrostatic (hydraulic) or bubble (pneumatic) test.

6. DIRECTIONS FOR USE AND MAINTENANCE

Cross-linked polyethylene pipes PEX-A with EVOH layer must be used in accordance with the requirements determined by the technical specifications of the pipe.

The use of cross-linked polyethylene pipe PEX-A with EVOH layer is not allowed in the following conditions:

- Operating temperature of liquid above 90°C;
- Short-term (emergency) temperature above 100°C;
- Operating pressure above 10 bar, for PF PEXA 505.20 — above 8 bar;
- In indoor areas with thermal radiation sources that have surface temperature exceeding 150°C

7. CONDITIONS FOR TRANSPORTATION AND STORAGE

Cross-linked polyethylene pipes PEX-A with EVOH layer are not classified as dangerous goods and can be transported by any mode of transport in accordance with the rules of goods transportation enforced for that mode of transport.

For rail and road transport coils (packages) of pipes are allowed to be transported only in covered rolling stocks. To avoid damages to the pipes, pipes should be laid on a flat even surface with no sharp protrusions and asperities. Dropping pipes of vehicles is not allowed.

Cross-linked polyethylene pipes PEX-A with EVOH layer must be stored in ventilated areas or under canopies.

Pipe coils can be stored in stacks not exceeding 3 m. Stored pipes must be protected from exposure to direct sunlight.

8. WARRANTY OBLIGATIONS

The warranty period is 120 months from the date of sale to the end consumer. Throughout the entire warranty period, the manufacturer guarantees the proper functioning of the product and its compliance with safety requirements, provided that the consumer follows the rules for storage, transportation, installation, operation, and maintenance of the product. The warranty covers all defects arising through the manufacturer's fault.

The warranty does not cover defects resulting from:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Exposure to substances aggressive to the materials of the product;
- Signs of mechanical damage;
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage caused by improper actions of the user;
- Evidence of unauthorized interference with the product design.

The product described in this technical manual is a technically complex device that must be installed by a qualified specialist with appropriate experience working with this type of equipment.

Installation and commissioning must be carried out by an authorized and certified company.

Profactor Armaturen GmbH reserves the right to make changes to the product design that do not affect its technical characteristics or functional features.



INTERNATIONAL WARRANTY CARD

NAME OF THE PRODUCT

PRODUCT CODE, SIZE

QUANTITY

SELLER NAME AND ADDRESS

DATE OF PURCHASE

SELLER STAMP

SELLER SIGNATURE

For the warranty term refer to the Warranty obligation clause in the technical manual

FOLD LINE

FOLD LINE

In case of any claims to the product quality the following documents should be submitted:

1. Application with customer and product details:

- Name of the customer, actual address and phone number
- Article of the product
- Reason for the claim and photo
- Plumbing system where installed (name, address, phone number)

2. Invoice copy and receipt

3. Warranty card

RETURN/EXCHANGE COMMENTS

DATE

SIGNATURE



Profactor Armaturen GmbH

Ruffinallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany;
Tel.: +49 89 21546092; info@pf-armaturen.de; www.profactor.de