



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



PRODUCT CODE

PF APP 500.1
PF APP 500.2
PF APP 501
PF APP 502
PF APP 503
PF APP 504

**MULTILAYER COMPOSITE
PIPE PEX-A/AL/PE**

1. PURPOSE AND SCOPE

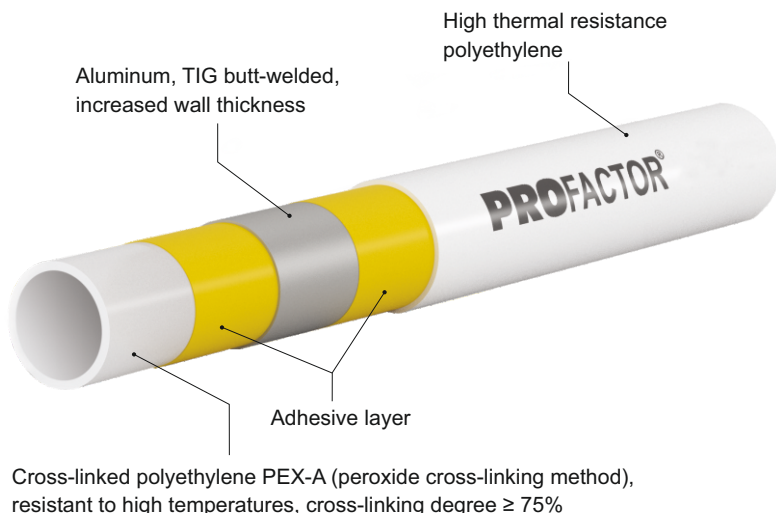
The PEX-A/AL/PE multilayer composite pipe is designed for the installation of cold and hot water supply and heating systems in residential and public buildings. It is used in domestic and drinking water systems, as well as for pipelines transporting liquids that are non-aggressive to the pipe materials.

2. TECHNICAL SPECIFICATIONS

Product Code	PF APP	500	501	502	503
Outer pipe diameter	mm	16	20	26	32
Inner pipe diameter	mm	12	16	20	26
Wall thickness	mm	2,0	2,0	3,0	3,0
Aluminum layer thickness	mm	0,25	0,25	0,3	0,35
Weight	kg/m	0,105	0,135	0,240	0,270
Packaging (coil/length)	m	200/100	100	100	50
Liquid volume per 1 linear meter of pipe	L	0,113	0,200	0,315	0,530
Maximum operating pressure	bar	10			
Maximum operating temperature	°C	95			
Maximum short-term allowable temperature	°C	130			
Oxygen diffusion	mg/L	0			
Linear expansion coefficient (α)	K ⁻¹	$2,6 \times 10^{-5}$			
Thermal conductivity coefficient	W/m·K	0,43			
Equivalent uniform roughness coefficient	—	0,007			
Minimum manual bending radius	cm	7,5	10	12	16
Minimum bending radius using a pipe bender	cm	4,5	6	9,5	12
Cross-linking method of the polyethylene inner layer	—	Peroxide (A) cross-linking method			
Polyethylene cross-linking method	%	≥75			
Aluminum layer welding method	—	Tungsten electrode, argon-shielded, butt-welded			
Pipe color	—	white			
Service life under rated operating conditions	years	40 – 50			

3. STRUCTURE OF MULTILAYER COMPOSITE PIPE

Technologically, the multilayer composite pipe consists of five layers: the inner layer made of cross-linked polyethylene (PEX-A) provides corrosion resistance, high-temperature durability, and a perfectly smooth surface, the aluminum layer (AL) ensures strength and prevents oxygen diffusion, the outer polymer layer (PE) protects against mechanical damage. Adhesive layers securely bond the materials together, forming a durable and leak-tight construction resistant to pressure and temperature fluctuations. Thanks to this structure, the pipe combines the advantages of both metal and plastic.



4. INSTALLATION INSTRUCTIONS

Installation of multilayer composite pipes must be carried out at an ambient temperature not lower than +10°C, using specialized tools intended for this purpose. Flattening or bending of the pipeline during installation is not permitted. If a kink occurs, the damaged section of the pipe must be removed.

Pipe coils that have been stored or transported at temperatures below 0°C must be kept for 24 hours at a temperature not lower than +10°C before uncoiling.

Pipe laying must be carried out without tensile stress. The open pipe ends must be sealed with caps to prevent dirt or debris from entering the pipe.

The underfloor heating pipeline must be filled with concrete or covered with flooring only after hydraulic leak testing has been completed. During filling, the pipe must be under a pressure of 0.3 MPa. The minimum layer of concrete above the pipe surface must be at least 3 cm.

Pipe connections must be made using special compression or press fittings.

5. OPERATING AND MAINTENANCE

Multilayer composite pipes must be operated in accordance with the technical specifications applicable to the pipe type.

The use of PROFACTOR® multilayer composite pipes is not permitted under the following conditions:

- in Category “G” fire hazard premises;
- in rooms with heat-radiating sources whose surface temperature exceeds 150°C;
- in central heating systems with elevator units;
- for expansion, safety, overflow, or signal pipelines.

6. STORAGE AND TRANSPORTATION

The multilayer composite pipes are not classified as hazardous cargo, which allows their transportation by any mode of transport in compliance with the applicable cargo transportation regulations.

For railway and road transport, pipe coils (bundles) are permitted to be transported only in covered transport vehicles.

To avoid pipe damage, they must be laid on a flat surface, free from sharp edges or irregularities.

Dropping pipes from transport vehicles is prohibited.

Storage of metal-plastic pipes must in well-ventilated premises or under shelters.

Pipe coils may be stacked up to 3 meters high.

During storage, the pipes must be protected from direct sunlight.

7. 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



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