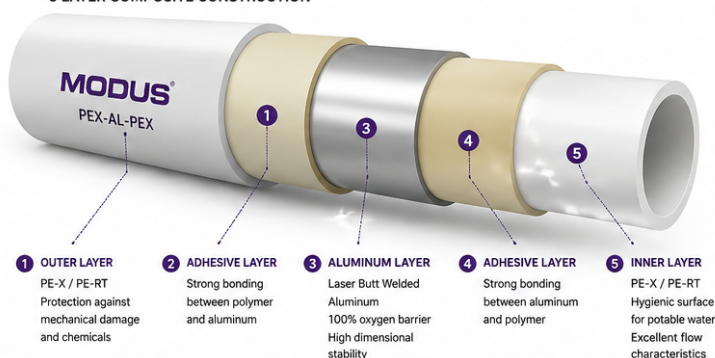
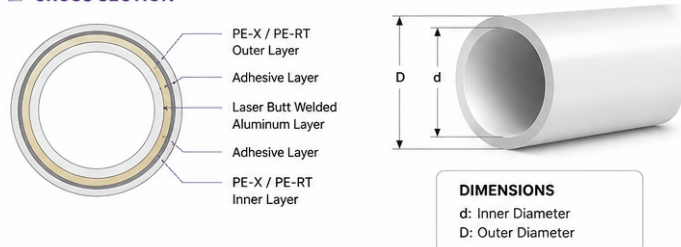


PIPE STRUCTURE

5 LAYER COMPOSITE CONSTRUCTION



CROSS SECTION

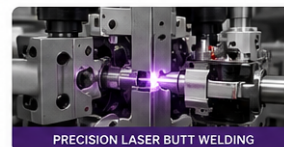


KEY FEATURES

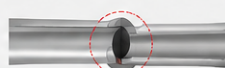


LASER BUTT WELD TECHNOLOGY

The aluminum strip is welded edge-to-edge using precision laser technology without any overlap. This advanced welding method ensures a uniform aluminum layer, superior strength, excellent dimensional stability and a continuous oxygen barrier.



CONVENTIONAL OVERLAP WELD



- ✗ Overlap on aluminum
- ✗ Variable wall thickness
- ✗ Higher internal stress
- ✗ Lower dimensional accuracy

MODUS LASER BUTT WELD



- ✓ Edge-to-edge welding
- ✓ Uniform wall thickness
- ✓ Reduced internal stress
- ✓ Excellent dimensional accuracy

TECHNICAL SPECIFICATIONS

Parameter	Value	Size (mm)						
		16	20	25	32	40	50	63
Dimensions (inner x outer) (mm)		12x16	16x20	20x25	26x32	32x40	41x50	51x63
Weight per meter (gr/m)		105	145	200	310	490	730	1220
Pipe water load (liters/m)		0.113	0.201	0.314	0.498	0.804	1.32	2.042
Minimum pipe thickness (mm)		1.65	1.9	2.25	2.9	3.4	4.0	4.6
Roughness index (m)		0.007						
Thermal conductivity (W/m·K)		0.40						
Linear expansion coefficient (m/m·K)		25 x 10 ⁻⁶						
Operating temperature (long-term)		80 °C						
Operating temperature (short-term)		100 °C						
Minimum operating temperature		-40 °C						
Pressure tolerance (50 years)		10 bar						
Category		Class 5						

APPLICATIONS



1. PRODUCT OVERVIEW

MODUS multilayer PEX-AL-PEX & PEX-AL-PERT pipes are manufactured for hot and cold water, radiator and underfloor heating systems using high quality raw materials and precision production processes.

2. TECHNICAL SPECIFICATIONS

Parameter	Value
Available Sizes (mm)	16 – 20 – 25 – 32 – 40 – 50 – 63
Dimensions (ID × OD) (mm)	12×16, 16×20, 20×25, 26×32, 32×40, 41×50, 51×63
Weight per Meter (g/m)	105, 145, 200, 310, 490, 730, 1220
Water Capacity (L/m)	0.113, 0.201, 0.314, 0.498, 0.804, 1.320, 2.042
Minimum Wall Thickness (mm)	1.65, 1.90, 2.25, 2.90, 3.40, 4.00, 4.60
Surface Roughness (mm)	0.007

Parameter	Value
Thermal Conductivity (W/m·K)	0.40
Coefficient of Linear Thermal Expansion (m/m·K)	25×10^{-6}
Maximum Continuous Operating Temperature	80°C
Maximum Short-Term Operating Temperature	100°C
Minimum Operating Temperature	-40°C
Pressure Rating (50 Years)	10 bar
Application Class	Class 5

2. ADVANTAGES

Manufactured in accordance with **ASTM F1281** international standard

Heat resistance up to **95°C**

Low coefficient of linear thermal expansion, comparable to metal pipes

Excellent resistance to chemicals, including acids and alkalis

100% oxygen barrier prevents corrosion of metallic components in heating systems

Excellent pressure resistance provided by the **laser butt welded aluminum layer**

Smooth inner surface with a very low roughness coefficient, minimizing pressure loss

No scaling, corrosion, rust, or changes in the taste, color, or odor of water

High flexibility for easy handling and installation

Fast and easy installation

PRODUCTION TECHNOLOGY

Laser Butt Weld Technology (Butt Welded Aluminum Layer)

- Precision laser butt welding
- No overlap aluminum joint
- Homogeneous aluminum layer
- Excellent dimensional stability
- High long-term pressure