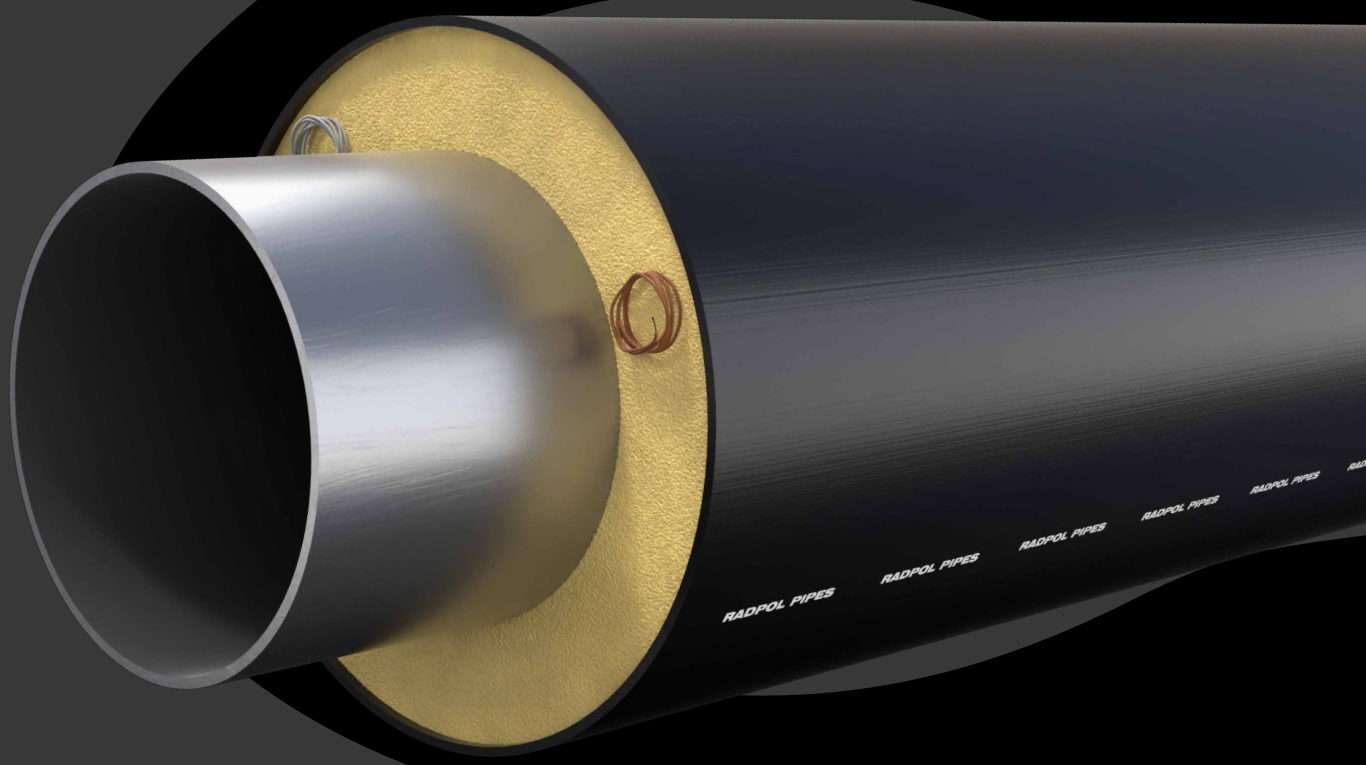
RADPOL PIPES

EVOprotect®

Pre-insulated pipe system with diffusion barrier



TOP QUALITY IN EVERY LAYER.

EVOprotect

Less heat loss. Lower emissions. Greater responsibility.

Imagine a technology that does not merely anticipate the future — it defines it.

EVOprotect® is more than a product; it is a comprehensive engineering solution that sets a new benchmark in the design and performance of pre-insulated piping systems. It combines advanced material science with proven technical efficiency, delivering superior durability and thermal performance for modern district heating networks.

As the **complete pre-insulated pipe system with an integrated polymer diffusion barrier,** EVOprotect® introduces a step-change in energy efficiency and system longevity.

By embedding an EVOH diffusion barrier within the casing wall, **the system reduces thermal transmission losses by up to 15% during the first 10 years of operation** and maintains a stable thermal conductivity for **over 30 years**.

EVOH (Ethylene Vinyl Alcohol) is a high-barrier copolymer engineered with a tightly ordered molecular structure that offers outstanding resistance to gas diffusion, thereby protecting the insulation core from external degradation.

Designed to meet sustainability goals

The EVOprotect® system contributes to long-term environmental performance through:

Reduced carbon footprint – By improving thermal efficiency, the system reduces the need for overproduction of heat and lowers greenhouse gas emissions.

Use of non-ozone-depleting blowing agents – The PUR foam is expanded using cyclopentane, a climate-safe alternative.

Minimised waste generation – Durable design and material consistency result in less frequent replacement and lower disposal volumes.

Engineered benefits. Quantifiable value.

Insulation protection.
The EVOprotect® system effectively prevents degradation of the polyurethane (PUR) foam and inhibits corrosion of the steel carrier pipe.

Long-term thermal integrity.
The system maintains stable thermal insulation properties over decades, preserving the initial design parameters.

Operational cost savings.
Reduced heat losses translate directly into lower primary energy demand and decreased CO emissions.

Extended transmission capabilit.
Enhanced insulation performance supports efficient thermal energy distribution over extended pipeline distances.

Compliance and durability.
The system lifespan exceeds the 30-year requirement specified in EN 253.

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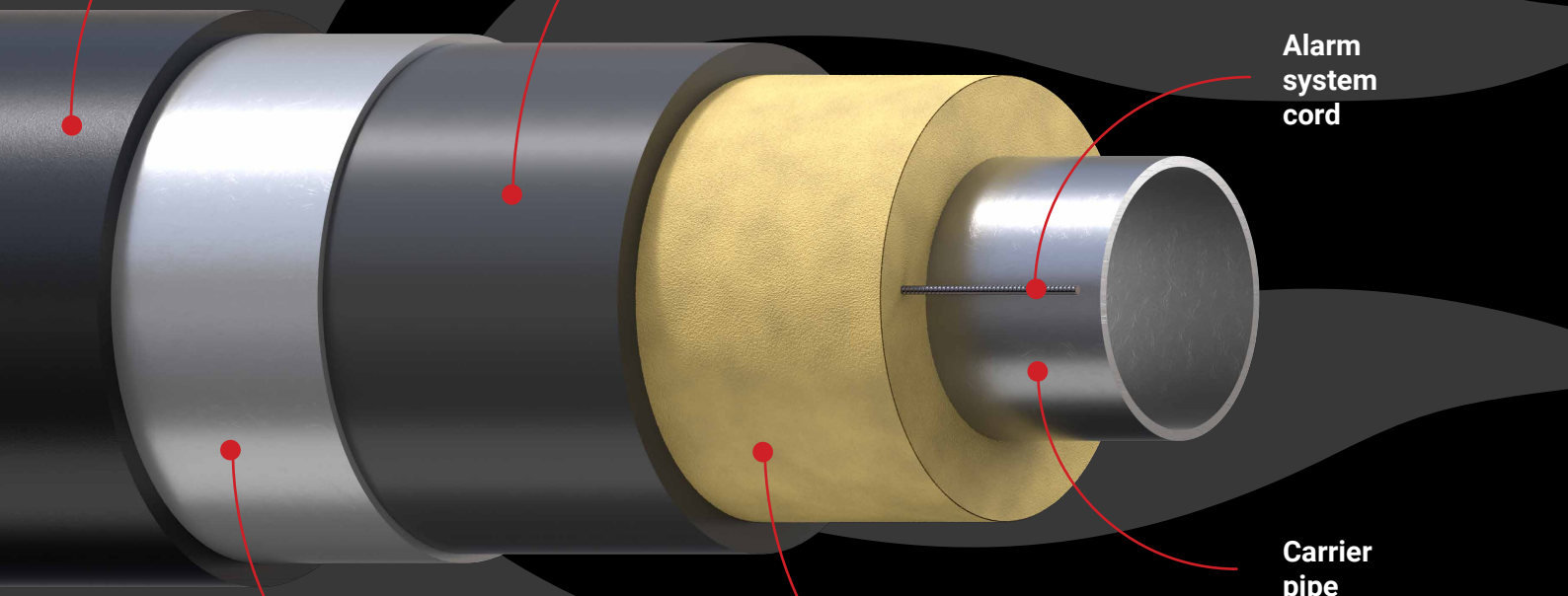
Optimised structural design
– Three-layer barrier technology

Jacket outer layer, works as mechanical protection of pre-insulated pipe, is made of modified HDPE.

Internal layer, provides the protection for the middle antidiffusion layer, is made of modified HDPE with a crowned surface at the junction of PUR foam. The corona treatment proces applied to the surface improves the adhesion between the jacket equipped in the barrier and PUR foam.



Alarm system cord

Carrier pipe

Jacket middle layer, acts as diffusion barrier, produced of EVOH. Placing diffusion barrier inside the casing pipe minimizes the risk of its damage.

PUR foam. The foam in the RADPOL PIPES pipes is frothed up by the use of blowing agent, named cyclopentane. This agent applicated in the form of gas is environmentally friendly.

System-wide compatibility and standardisation

Radpol Pipes offers a complete EVOprotect® product portfolio that includes:

- **Pre-insulated pipes** with nominal diameters up to **DN 1000** and standard lengths up to **16 metres**, manufactured in accordance with EN 253

- **Fittings and valves** for use up to **DN 1000**, compliant with **EN 448**

- **Pre-insulated system components** including elbows, tees, shut-off valves, and other components – up to **DN 1000**

All components are engineered to deliver consistent sealing performance, structural integrity, and full compliance with European quality and performance standards.

TOP QUALITY IN EVERY LAYER.

View the EVOprotect® product portfolio.
Contact our technical sales department for specifications and tenders.

RADPOL PIPES

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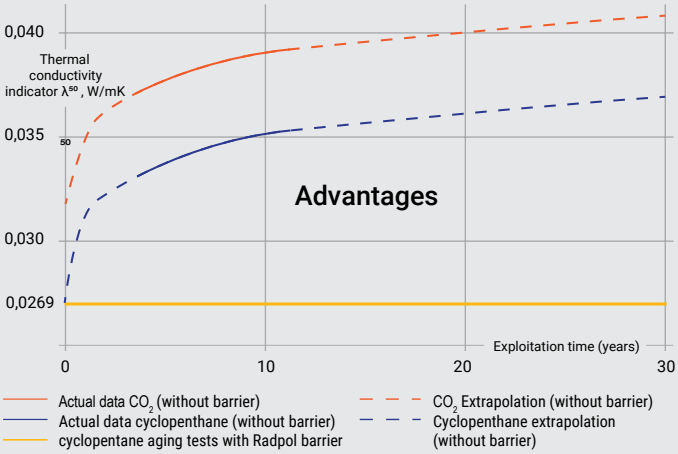
Heating pipe construction is a project in which the financial and environmental issues are crucial to the investor.

Usually the direct costs come into foreground (heating pipe purchase as well as its implementation).

It should be marked however, that the future costs connected with the network exploitation (its maintenance as well as repairs), together with the working pipeline heat loss costs coverage, are equally significant.

Thanks to the EVOprotect® diffusion barrier application, the heating pipe exploitation costs are diminished significantly. The construction of district heating networks in the Radpol Pipes antidiffusion technology causes the maximum reduction of heat flow loss within the whole period of its exploitation.

RADPOL PIPES system application advantages



Barrier caused by 1mm of EVOH layer for O_2, N_2, CO_2 equals to the 9 m of HDPE layer!

Comparison of gas transmission

Material	Test temperature	Gas transmission GTR (cm³ × mm/m² × day × atm.)		
		N_2	O_2	CO_2
EVOH	25°C	0,00034	0,00054	0,016
HDPE	22°C	22	70	247