www.perform-pipe.co.uk

performpipe® introduces a new standard in pre-insulated pipework, purpose-built for air-to-water heat pumps and modern low-carbon systems.

Combining flexible stainless steel with advanced aerogel insulation, **performpipe®** is a slimmer, smarter, high-performance pre-insulated solution for modern systems, delivering outstanding thermal efficiency in a space-saving, easy-to-install format

The UK's #1 heat pump pipe

performpipe®

Technical Data Sheet

Energy Efficient
Aerogel core reduces heat loss and energy usage.

Flexible
Corrugated pipe bends easily, no elbows or tails needed.

Fire Rated
A2-s1,d0 classified for safety and compliance.

Compact
Slim 58.8mm profile fits through walls and tight spaces.

Maintenance Free
Fully sealed, no coatings or yearly checks required.

Durable
UV, moisture and weather-resistant for long life

Technical Data

Physical Properties

Property	DN25/13	DN32/13
Type of Steel	316L	
Insulation Thickness	13 mm	
PVC Thickness	0.5mm	
PVC Tensile Strength	1800 N/5cm	
PVC Weight	650g/m²	
PVC UV Resistance	Very High	
Inner Diameter (d1)	25.3 mm	33.4 mm
Outer Diameter (d2)	31.8 mm	40.6 mm
d2 with Insulation (d3)	57.8mm	66.6mm
d2 with Insulation & Cover (d4)	58.8mm	67.6mm
Tolerance (w)	±0.4 mm	±0.4 mm
Minimum Bending Radius (Rg)	40 mm	50 mm
Nominal Pressure (pmax)	6 bar	4 bar
Unit Mass (mjr)	1.20 kg/m	1.80 kg/m
Axial Spacing of Twin Pipes (L2)	83.8 mm	92.6 mm

Outer Sheathing
UV and weather resistant PVC
Fully sealed, fit for external and underground use

Insulation
13mm AerogelGT
Minimal thickness, maximum performance

Core
Flexible corrugated stainless steel
Bends easily without elbows or joints

Layer Properties

Layer	Material	Details
Insulation	AerogelGT (blanket)	λ = 0.0175 W/m·K (EN 12667:2002)
		Max temperature: 675°C
		Fire rating: A2-s1,d0
		Hydrophobic, non-toxic
Outer Jacket	PVC (0.5 mm)	Fire rating: B-s2,d0
		UV- and weather-resistant
		High mechanical resistance

Compliance & Certification

Standard / Test	Result
Thermal Conductivity Testing	EN 12667:2002
Fire Classification - Insulation	A2-s1,d0 (EN 13501-1:2019)
Fire Classification - Outer Jacket	B-s2,d0
Max Operating Temperature	Up to 675°C (EN 14706:2013)
Mechanical & UV Resistance	High (ISO 4892/2)
Quality Certification	TÜV Rheinland

The Aerogel Advantage

A material made up of 99.8% air, with a thermal conductivity of just 0.0175 W/m·K - that's what makes **performpipe®** so compact, yet so effective.

- Ultra-low thermal conductivity
- Fire Safety Performance
- Slimmer profile, same protection
- Built to last

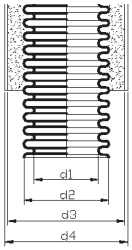
Dimensions

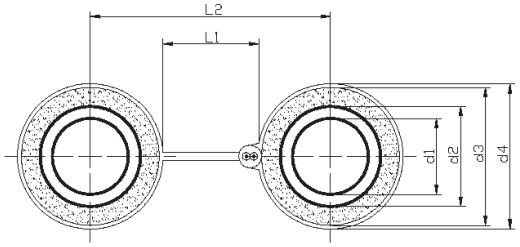
A PVC Protective Coating

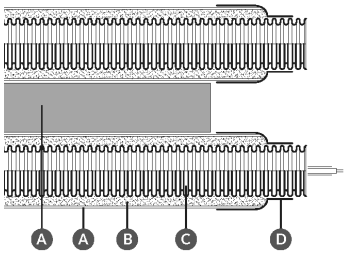
B Aerogel Insulation

C Stainless Steel Corrugated Pipe

D Heat Shrink Wrap







We're setting the benchmark for piping performance

Bold claims, backed by big results.

To validate performance claims, we ran a full-year simulation comparing **performpipe®** to other commonly used pipe insulation materials tested in real-world conditions*.

	How performpipe® performed
Energy Use	Up to **30% less** than alternatives*
Heat Pump Run Time	Up to **144 hours fewer** per year*
Insulation Thickness	Only **13mm** vs 21.5–27mm of others*
U-value	**0.952 W/m²K** in a 57.8mm pipe diameter

Performance Overview:

Metric	performpipe®	Comparison Range
Thermal Conductivity (λ)*	0.0175 W/m²K	0.033 – 0.299 W/m²K
U-Value	0.952 W/m²K	Higher (less efficient)
Annual Energy Use*	1282.7 kWh	Up to 31.9% more
Run Time (12 months)*	451.46 hours	53–144 hours more

*Testing conducted by:
Dr Mohamad Rida & Cameron Johnstone
Energy Systems Research Unit
University of Strathclyde
Report available on website

- ✔ Lower energy usage
- ✔ Fewer running hours
- ✔ Higher efficiency

The Data

Thermal Performance Data

Comparison of heat transfer characteristics across insulation materials

Material:	performpipe	Polyethylene Higher Density	Polyethylene Lower Density	Mineral Wool	Cellular Glass Compressible	Cellular Glass 20% Deteriorated
Thermal Conductivity (W/m·K)	**0.0175**	0.033	0.037	0.04	0.045	0.299
Radial Thermal Resistance[1] (m^2K/W)	***0.986***	0.523	0.466	0.431	0.383	0.054
U-value[2] (W/m^2K)	**0.952**	1.709	1.893	2.027	2.245	2.624
UA-value[3] (W/K) [3]	***0.86***	1.552	1.718	1.84	2.039	2.382
Temperature Drop Over 5m ΔT[4] (°C)	***0.029***	0.052	0.057	0.062	0.068	0.08
Heat Loss[5] (W)	**40.706**	72.966	80.78	86.513	95.833	111.98

[1] Based on 31.8mm external diameter pipe + 13mm insulation // [2] Overall radial heat transfer coefficient/ based on based on 31.8mm external diameter pipe + 13mm insulation // [3] Product of U-value and external surface area of pipe/ based on * based on 31.8mm external diameter pipe + 13mm insulation and 5m of pipe // [4] Based on TAMB of 8°C, Tw_in of 55°C and Mass Flow Rate 0.333kg/s

Insulation Thickness & Size Impact

Comparison of insulation thickness and pipe diameter required to match aerogel's U-value

Metric	performpipe	Polyethylene Higher Density	Polyethylene Lower Density	Mineral Wool	Cellular Glass Compressible
Insulation Thickness (mm)	**13**	21.5	23.5	25	27
Pipe + Insulation Diameter (mm)	**57.8**	74.8	78.8	81.8	85.8
Cross-Sectional Area (mm^2)	**2623.89**	4394.33	4876.88	5255.29	5781.82
% Increase in Area	**–**	67.47%	85.86%	100.29%	120.35%

Full System Impact – Runtime, Energy Use & Cost

Annual performance impact based on like for like comparison with PerformPipe's 13mm insulation and 31.8mm pipe.

Material:	performpipe	Polyethylene	Polyethylene	Mineral Wool	Cellular Glass	Cellular Glass
HP Run Time (hrs/year)	**451.46**	516.83	532.66	544.28	563.17	595.89
% Increase in Run Time	**-**	14.48%	17.99%	20.56%	24.74%	31.99%
Heat Output (kWh/year)	**3019.48**	3463.92	3571.58	3650.57	3778.99	4001.49
Heat Loss Increase (kWh)	**-**	444.44	552.1	631.09	759.51	982.01
% Heat Loss Increase	**-**	14.72%	18.28%	20.90%	25.15%	32.52%
Electricity Use (kWh/year)	**1282.74**	1467.93	1512.8	1545.71	1599.23	1691.94
% Increase in Electricity Use	**-**	14.44%	17.94%	20.50%	24.67%	31.90%
Annual Electricity Cost (£0.28)	**£359.17**	£411.02	£423.58	£432.80	£447.78	£473.74
Extra Cost vs Aerogel (£)	**-**	£51.86	£64.42	£73.63	£88.62	£114.58
% Cost Increase	**-**	14.44%	17.94%	20.50%	24.67%	31.90%

The next generation of heat pump pipes

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