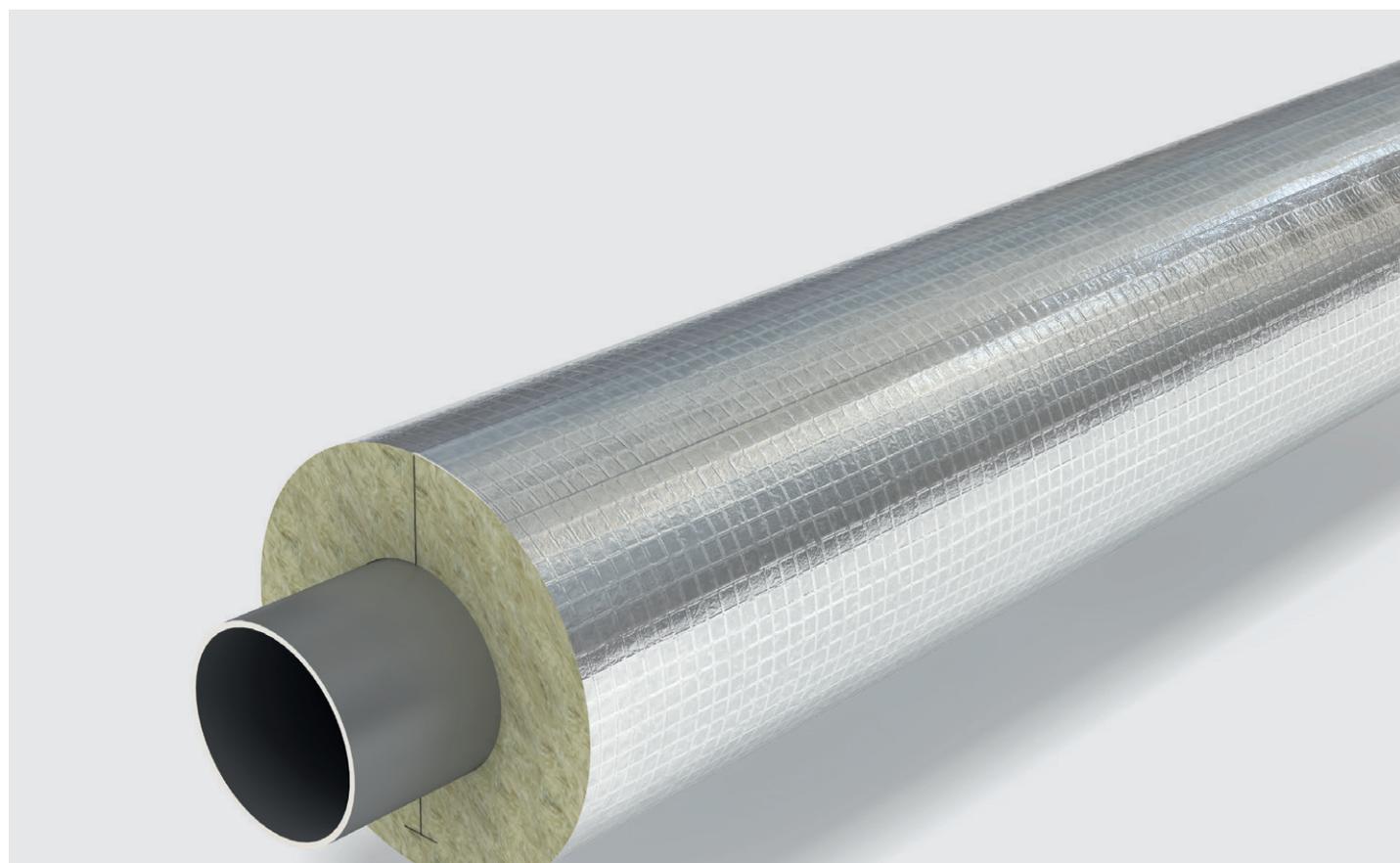


Technical Insulation



# K-Roc<sup>®</sup> Pipe Insulation

Mineral Fibre Insulation for HVAC Applications



# K-Roc® Pipe Insulation

## Introduction

Kingspan K-Roc® Pipe Insulation is made of mineral wool with a reinforced aluminium foil facing. K-Roc® Pipe Insulation has a declared maximum service temperature of 140°C and its longitudinal fibre arrangement provides both rigidity and good thermal insulation properties.

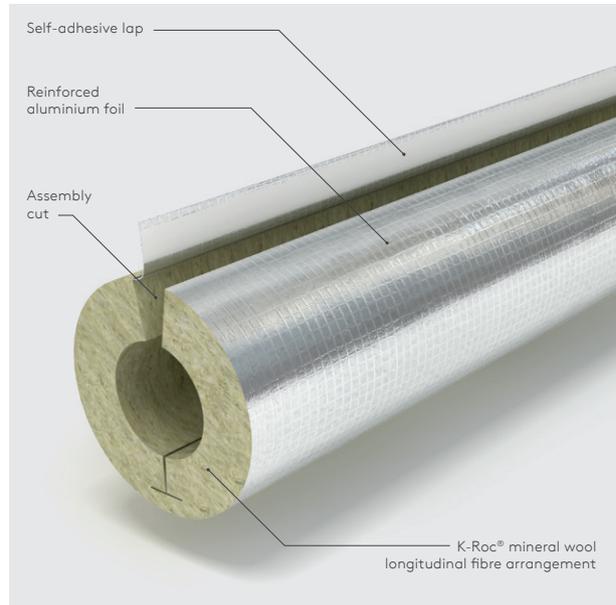
K-Roc® Pipe Insulation sections are supplied with a wide, self-adhesive lap.

## Application

K-Roc® Pipe Insulation can be used for thermal and anti-condensation insulation of pipework systems in HVAC and building services applications.

The use of a reinforced aluminum foil finished with a wide self-adhesive closing lap makes the assembly process both quick and secure.

K-Roc® Pipe Insulation sections are 1.2 metres long which can increase assembly efficiency and contribute to lower labour costs.



## Product Advantages

K-Roc® Pipe Insulation has an innovative system of maintaining the round shape of its internal diameter. Due to the technology used to shape the walls of the pipe section, K-Roc® Pipe Insulation will be tightly closed when installed around the pipe. This feature can help to counteract the occurrence of cold bridges.

## Thermal Performance

K-Roc® Pipe Insulation achieves a thermal conductivity of 0.033 W/m.K at 10°C. A full list of values can be found in the DoP.

## General Physical Properties

Property	Test Method	Typical Value
Nominal density	-	70 kg/m <sup>3</sup>
Thermal conductivity at +10°C. Please refer to DoP for full values	BE EN ISO 8497: 1997	0.033 W/m.K
Maximum service temperature declared	BS EN 14707: 2012	140°C
Wall thickness tolerance	BS EN 13467: 2018	OD < 150 mm -5% or -3 mm / +5% or +3 mm OD ≥ 150 mm -6% or -5 mm / +6% or +5 mm
Internal diameter tolerance	BS EN 13467: 2018	OD < 150 mm -0 mm / +4 mm OD ≥ 150 mm -0 mm / +2% or +5 mm
Length tolerance	BS EN 13467: 2018	+5 mm
Uniformity of thickness	BS EN 13467: 2018	difference < 6 mm or 10%
Squareness	BS EN 13467: 2018	±4 mm or ±2% external diameter
Content of chloride ions	BS EN 13468: 2001	≤ 10 ppm (10 mg / 1 kg)
Diffusion resistance of water vapour	BS EN 13469: 2012	sd ≥ 200 m

## Fire Test Classifications

Property	Test Method	Result	Diameter (mm)	Thickness (mm)
Reaction to fire	BS EN 13501-1: 2018	A2L-s1,d0	≤ 300	Any
		A2-s1,d0	> 300	Any

### Notes:

BS EN 14707: 2012 (Thermal insulating products for building equipment and industrial installations. Determination of maximum service temperature for preformed pipe insulation).  
 BS EN 13501-1: 2018 (Fire classification of construction products and building elements - Classification using data from reaction to fire tests).  
 BS EN ISO 8497: 1997 (Thermal insulation - Determination of steady-state thermal transmission properties of thermal insulation for circular pipes (ISO 8497:1994)).  
 BS EN 13467: 2018 (Thermal insulating products for building equipment and industrial installations. Determination of dimensions, squareness and linearity of preformed pipe insulation).  
 BS EN 13468: 2001 (Thermal insulating products for building equipment and industrial installations. Determination of trace quantities of water soluble chloride, fluoride, silicate, sodium ions and pH).  
 BS EN 13469: 2012 (Thermal insulating products for building equipment and industrial installations. Determination of water vapour transmission properties of preformed pipe insulation).

# K-Roc® Pipe Insulation

## Insulation Thickness Table to Control Heat Loss in Non-Domestic Hot Water and Low Temperature Heating Service Areas

Steel Pipe Size			K-Roc® Pipe Insulation							
			Hot Water 60 °C				Low Temperature Heating Water ≤ 95 °C			
NB (inches)	NB (mm)	OD (mm)	ε =0.05 silver	Max. Heat Loss (W/m)	ε =0.05 silver	Max. Heat Loss (W/m)	ε =0.05 silver	Max. Heat Loss (W/m)	ε =0.05 silver	Max. Heat Loss (W/m)
			Table 17 A		Table 17 B		Table 15 A		Table 15 B	
3/8	10	≤ 17.2	25	6.60	30	6.04	25	8.90	40	7.78
1/2	15	≤ 21.3	25	7.13	40	6.45	30	9.28	40	8.42
3/4	20	≤ 26.9	30	7.83	40	7.00	40	10.06	50	9.05
1	25	≤ 33.7	30	8.62	40	7.71	40	11.07	50	9.86
1 1/4	32	≤ 42.4	30	9.72	40	8.46	40	12.30	50	10.83
1 1/2	40	≤ 48.3	40	10.21	50	9.01	40	12.94	50	11.42
2	50	≤ 60.3	40	11.57	50	9.94	50	14.45	60	12.61
2 1/2	65	≤ 76.1	40	13.09	50	11.25	50	16.35	60	14.12
3	80	≤ 88.9	40	14.58	50	12.17	50	17.91	60	15.28
4	100	≤ 114.3	40	17.20	50	14.29	50	20.77	70	17.51
5	125	≤ 139.7	40	19.65	60	16.09	50	23.71	70	19.72
6	150	≤ 168.3	40	22.31	60	18.24	50	26.89	70	22.34
8	200	≤ 219.1	40	27.52	60	22.06	50	32.54	70	26.61
10	250	≤ 273.0	50	32.40	60	25.95	50	38.83	70	30.91
-	-	> 273.0	50	-	60	-	50	-	70	-

Ambient Air Temperature: +15 °C

**Table 1: Indicative thickness (mm) of insulation for Non-Domestic Hot Water (60 °C) and Low Temperature Heating Service Areas (≤95 °C) to control heat loss.**

(Based on Non-domestic Building Services Compliance Guide: 2013 Edition, Section 11; TIMSA HVAC Guide Sections 6.2.1 & 6.2.2; and BS 5422: 2023 (Method for specifying thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range -40 °C to +700 °C) Tables 15 & 17).

**Note:** Please refer to K-Roc® Pipe Insulation DoP for full range of values. For pipes and vessels of diameter greater than 273 mm, the items shall be assumed to be 273 mm for calculation purposes.

# K-Roc® Pipe Insulation

## Insulation Thickness Table to Control Heat Gain & Control Condensation

Steel Pipe Size			K-Roc® Pipe Insulation					
			Water 0 °C to 4.9 °C		Water > 4.9 °C to < 10 °C		Water > 10 °C	
NB (inches)	NB (mm)	OD (mm)	ε =0.05 silver	Max. Heat Loss (W/m)	ε =0.05 silver	Max. Heat Loss (W/m)	ε =0.05 silver	Max. Heat Loss (W/m)
Table 8								
3/8	10	≤ 17.2	30	-3.45	25	-2.97	20	-2.48
1/2	15	≤ 21.3	40	-3.81	30	-3.27	20	-2.72
3/4	20	≤ 26.9	40	-4.18	30	-3.58	20	-3.05
1	25	≤ 33.7	40	-4.60	30	-4.01	25	-3.41
1 1/4	32	≤ 42.4	40	-5.11	40	-4.53	25	-3.86
1 1/2	40	≤ 48.3	50	-5.45	40	-4.82	25	-4.11
2	50	≤ 60.3	50	-6.17	40	-5.48	25	-4.78
2 1/2	65	≤ 76.1	50	-6.7	40	-6.30	30	-5.51
3	80	≤ 88.9	50	-7.77	40	-6.90	30	-6.17
4	100	≤ 114.3	50	-9.15	40	-8.31	30	-7.28
5	125	≤ 139.7	60	-10.45	50	-9.49	40	-8.52
6	150	≤ 168.3	60	-11.86	50	-10.97	40	-9.89
8	200	≤ 219.1	60	-14.61	50	-13.57	40	-12.27
10	250	≤ 273.0	60	-17.48	50	-16.28	40	-14.74

Ambient Air Temperature: +25 °C  
 Relative Humidity: 80%  
 Minimum Surface Temperature: +21.3 °C

**Table 2: Indicative thickness (mm) of insulation required for cold and chilled water supplies to control heat gain and control condensation.**

(Based on Non-domestic Building Services Compliance Guide: 2013 Edition, Section 11; TIMSA HVAC Guide Sections 6.2.3 & 7.2; and BS 5422: 2023 (Method for specifying thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range -40 °C to +700 °C), Tables 6, 8, 10 & 11).

## Insulation Thickness Table to Control Heat Loss in Heat Networks

Steel Pipe Size			District Heating 55 °C		
NB (inches)	NB (mm)	OD (mm)	ε =0.05 silver	Actual Heat Loss (W/m)	Max. Heat Loss (W/m)
1/2	15	≤ 21.3	50	4.21	4.40
3/4	20	≤ 26.9	50	4.61	4.70
1	25	≤ 33.7	70	4.46	4.70
1 1/4	32	≤ 42.4	70	4.99	5.10
1 1/2	40	≤ 48.3	80	5.02	5.10
2	50	≤ 60.3	90	5.33	5.40
2 1/2	65	≤ 76.1	100	5.74	5.80
3	80	≤ 88.9	110	5.96	6.10

Ambient Air Temperature: +20 °C  
 Flow Temperature: +55 °C

**Table 3: Indicative thickness (mm) of insulation required to control heat loss in Heat Networks.**

(Based on BS 5422: 2023 (Method for specifying thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range -40 °C to +700 °C) Table 19C).

**Note:** For pipes and vessels of diameter greater than 89 mm, the items shall be assumed to be 89 mm for calculation purposes.

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