

The Kingspan **Kooltherm**[®] Duct Insulation System

Kingspan **Kooltherm**[®] Duct Insulation

Kingspan **Kooltherm**[®] Duct Insulation is faced with reinforced aluminium foil as the outer facing and glass tissue as the inner facing to its rigid phenolic insulation core.

The reinforced aluminium foil and glass tissue facings are compatible with the types of solvent-based general purpose adhesives normally used for adhering insulation materials to ductwork.

Kingspan **Kooltherm**[®] Duct Insulation is entirely CFC/HCFC-free and exhibits zero Ozone Depletion Potential (ODP).

The boards are available in the following sizes:

- 1,200 mm x 600 mm; and
- 2,400 mm x 1,200 mm.

Please refer to Appendix A1 of the Project Specification section of this document for product data.



Rigid Phenolic Rectangular Duct Support Inserts

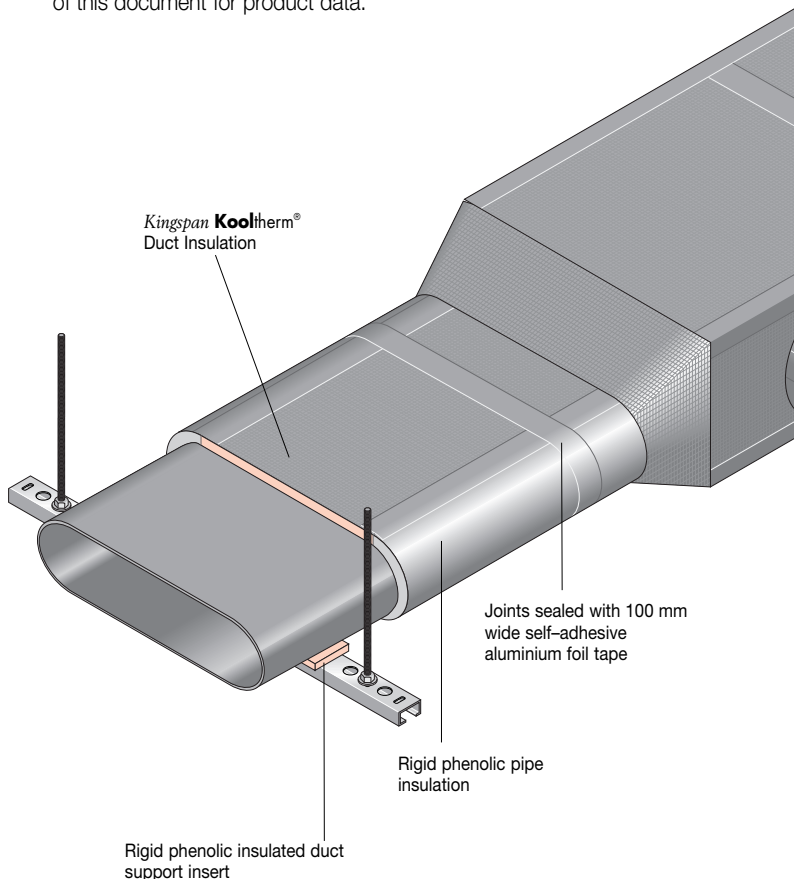
Rigid phenolic rectangular duct support inserts are designed for use with air conditioning and ventilation ductwork, where rectangular ductwork support brackets have been specified. Their use enables the specified thickness of insulation to be maintained at duct supports and facilitates the installation of a continuous and fully sealed vapour barrier, which is particularly important on ductwork carrying cold or chilled air.

The density of rigid phenolic rectangular duct support inserts is 60 kg/m³. They are manufactured from flat strips of high-density rigid phenolic insulation, which has a closed cell structure, fully adhered to a reinforced aluminium foil vapour barrier.

Rigid phenolic rectangular duct support inserts are entirely CFC/HCFC-free and exhibit zero Ozone Depletion Potential (ODP) and are available in the following dimensions:

- length – 1 metre;
- widths – 50 mm, 75 mm or 100 mm; and
- thicknesses – 20 mm and above in 5 mm increments.

Please refer to Appendix A2 of the Project Specification section of this document for product data.





Crocodile Strips

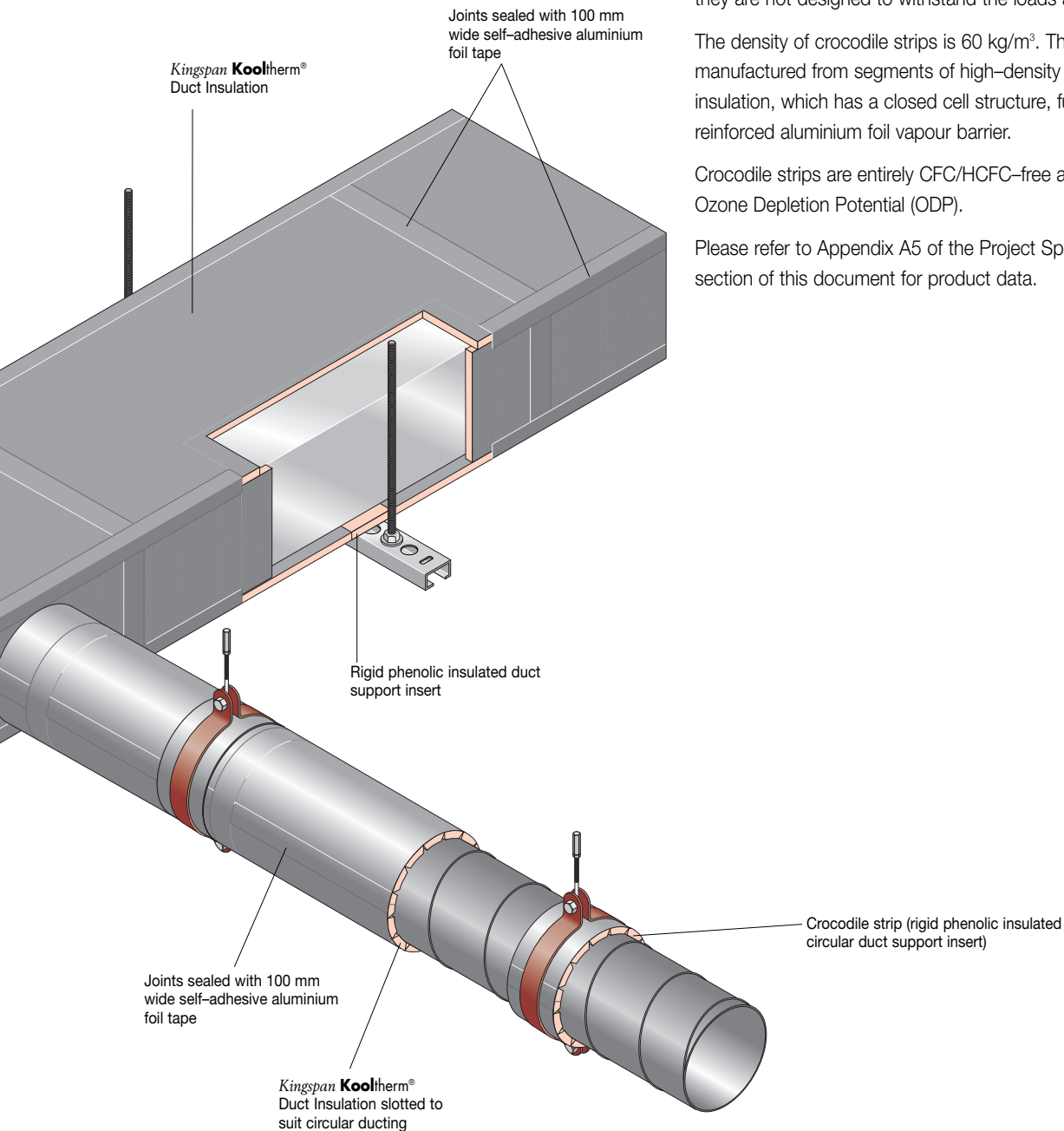
(Rigid Phenolic Insulated Circular Duct Support Inserts)

Crocodile strips are designed for use with circular air conditioning and ventilation ductwork support brackets. Their use enables the specified thickness of insulation to be maintained at the duct support and facilitates the installation of a continuous and fully sealed vapour barrier which is particularly important on ductwork carrying cold or chilled air. Crocodile strips should not be used for water filled pipes as they are not designed to withstand the loads applied by such.

The density of crocodile strips is 60 kg/m³. They are manufactured from segments of high-density rigid phenolic insulation, which has a closed cell structure, fully adhered to a reinforced aluminium foil vapour barrier.

Crocodile strips are entirely CFC/HCFC-free and exhibit zero Ozone Depletion Potential (ODP).

Please refer to Appendix A5 of the Project Specification section of this document for product data.



NB: On circular ducting 350 mm diameter and below use rigid phenolic pipe insulation and rigid phenolic insulated pipe support inserts

Project Specification

Appendix A1 - *Kingspan Kooltherm*[®] Duct Insulation

Description

Kingspan Kooltherm[®] Duct Insulation has a CFC/HCFC-free rigid phenolic core with a density of 40 kg/m³. Manufactured by a continuous process the quality of the insulation is constantly monitored and controlled. A closed cell structure gives the product excellent thermal properties as well as resistance to moisture penetration and wicking.

The exposed facing of *Kingspan Kooltherm*[®] Duct Insulation is an extremely durable and puncture resistant aluminium foil with a 12 mm x 12 mm glass scrim with the inner facing comprising a glass tissue. *Kingspan Kooltherm*[®] Duct Insulation is able to withstand temperatures from -20°C to +80°C. It also has an exceptional resistance to burning and spread of flame.

The composition of *Kingspan Kooltherm*[®] Duct Insulation is such that when subjected to fire the outer surface forms a strong carbonaceous layer which retards further flame spread and penetration. *Kingspan Kooltherm*[®] Duct Insulation satisfies the requirements of the TIMSA Guide and BS 5422: 2001 along with other major national specifications including NHS C02, NES Specification Expert Y50 and DEO Specification 037.

Kingspan Kooltherm[®] Duct Insulation is manufactured under a quality control system approved to BS EN ISO 9001: 2000 (Quality management systems. Requirements).

Application

Kingspan Kooltherm[®] Duct Insulation is for use on ductwork in building services applications. *Kingspan Kooltherm*[®] Duct Insulation is also used as an insulant for tanks and vessels. The durable aluminium foil on the exposed face is used to prevent the ingress of moisture, dust and dirt into the insulation. The glass tissue on the inner face is compatible with the types of solvent based adhesives normally used for adhering insulation materials to ductwork.

Availability

- Board dimensions: 1200 x 600 mm or 2400 x 1200 mm.
- Board thicknesses: Please contact the Kingspan Insulation Customer Service Department or refer to the *Kingspan Kooltherm*[®] Duct Insulation Price List for current stock and non-stock sizes.



General Physical Properties (Rigid Phenolic Insulation Core)

Nominal Density	(BS 4370-1: 1988 (1996))	40 kg/m ³
Thermal Conductivity at 10°C Mean Temp	(BS 4370-2: 1993)	0.021 W/m-K
Colour		Pink
Minimum Closed Cell Content	(BS EN ISO 4590: 2003)	>90%
Water Vapour Resistivity		240 MN·s/g·m
Moisture Vapour Permeability	(at 38°C, 88% RH)	10 µg·m/N·h
Compressive Strength at 10% Compression	(BS 4370-1: 1988 (1996))	Parallel to Rise 100 kPa
Operating Temperature Limits of Board	Upper Limit Lower Limit	+80°C -20°C
Specific Heat Capacity		1.88 kJ/kg·°C

Fire Test Classifications (Rigid Phenolic Insulation Core)

Kingspan Kooltherm[®] rigid phenolic insulation will achieve the results given below which enables it to be classified by the Building Regulations as being Class O and Low Risk by the Building Standards in Scotland.

Fire Performance	BS 476-6: 1989	Index of performance (I) not exceeding 12 and sub index (i) not exceeding 6
Surface Spread of Flame	BS 476-7: 1997	Class 1

Thermal Conductivity Design Values (Rigid Phenolic Insulation Core)

Mean Temperature (°C)	+10	0	-10	-20
Thermal Conductivity (W/m-K)	0.021	0.021	0.021	0.021

General Physical Properties (Aluminium Foil Vapour Barrier Jacket)

Composition	Aluminium	12 microns
	Glass Fibre Scrim	12 mm x 12 mm
	Glass Fibre	35 g glass
	Polyethylene	39 g/m ²
Water Vapour Permeance		0.0006 g/s-MN

Fire Test Classifications (Aluminium Foil Vapour Barrier Jacket)

The aluminium foil vapour barrier jacket bonded to the *Kingspan Kooltherm*[®] Duct Insulation board will achieve the results given below which enables it to be classified by the Building Regulations as being Class O and Low Risk by the Building Standards in Scotland.

Fire Performance	BS 476-6: 1989	Index of performance (I) not exceeding 12 and sub index (i,) not exceeding 6
Surface Spread of Flame	BS 476-7: 1997	Class 1