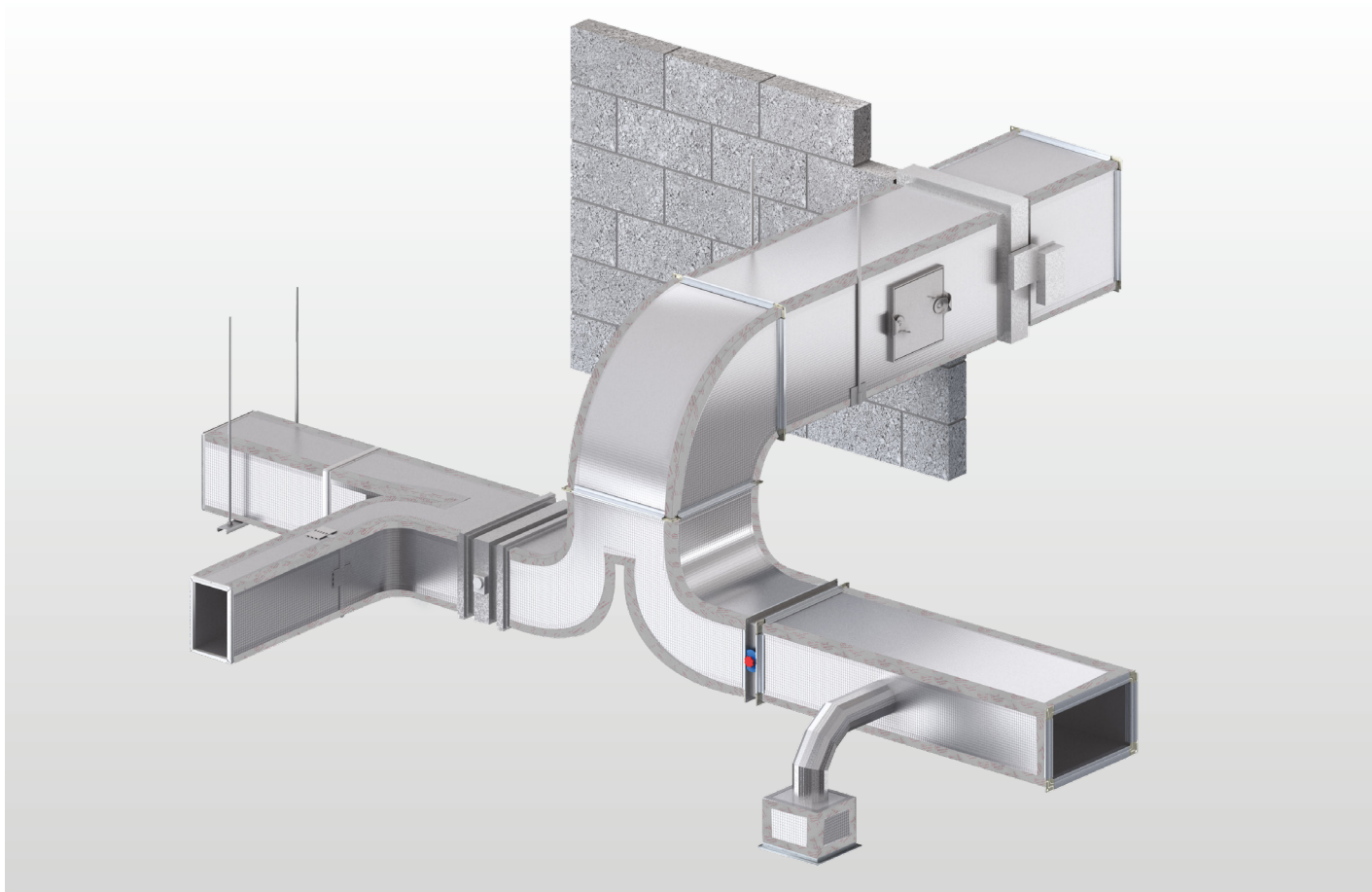


Insulation



PalDuct™ Phenolic System

Product Catalogue



Introduction

Overview

The heating, ventilation and air-conditioning (HVAC) industry is in the midst of a dynamic era. However, air-distribution ductwork, a critical component of HVAC systems, has remained virtually unchanged since the early 1900s.

Several factors have introduced the need to revolutionise HVAC ductwork. Energy use has continued to escalate, and thus the demand for energy reducing solutions has intensified. Requirements for clean air are becoming increasingly prevalent. Speed of construction has become a valuable asset. Floor space and headroom are under constant pressure.



Pal was the first company in the world to introduce the innovative and revolutionary rigid pre-insulated ductwork as an alternative to sheet metal ductwork. It was invented by Claudio Ferraro of Bologna, Italy in 1965.

Kingspan Insulation has proven the value of its products and Kingspan PalDuct has been used in some of the most prestigious projects around the world, due to its known advantages.

Kingspan Insulation has commissioned state of the art manufacturing plants, established workshops in different regions worldwide and also provided specialised and comprehensive training courses conducted by service oriented and experienced trainers well-equipped with the latest technologies, all to ensure quality HVAC ductwork fabrications and installations. This is closely supervised by the representatives from subsidiary companies and sales offices worldwide.



In 2014 Kingspan Group acquired Pal International and assimilated it into its Insulation Division, which subsequently became responsible for the sales and marketing of Kingspan PalDuct products across the globe.

Introduction

What is Kingspan PalDuct Phenolic System?

Kingspan PalDuct Phenolic Panels comprise a fibre-free rigid thermoset phenolic insulation core faced on both sides with aluminium foil reinforced with a glass scrim.

Kingspan PalDuct Phenolic Panels are available in a standard thickness of 20mm and 30mm.

Kingspan Insulation offers a complete product line, providing all materials, tools and accessories necessary for the effective fabrication of ductwork from the Kingspan PalDuct Phenolic System.

The ductwork from Kingspan PalDuct Phenolic System is only fabricated by specially trained fabricators who have completed the Kingspan PalDuct Phenolic System training course and who are registered with Kingspan Insulation.



Advantages of Kingspan PalDuct Technology

- Easy to clean.
- Manufactured with a blowing agent that has zero ODP (contains CFC and HCFC) and GWP ≤ 5 .
- Fibre-free insulation core.
- Space saving: flush-fitting installation possible.
- Thermal Conductivity as low as 0.033 (W/mk) @ 23°C (ASTM C518-21)
- Fast-track installation: rapid erection combined with single-fix installation.
- On-site fabrication capability.
- UL Listed as a Class 1 Air Duct to Standard for Safety UL 181 (Factory Made Air Ducts & Air Connectors).

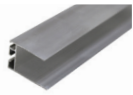


Certifications & Compliance

Kingspan PalDuct Phenolic System is manufactured to the highest standards under a management system certified to ISO 9001: 2015 (Quality Management System), ISO 14001: 2015 (Environmental Management System), ISO 45001: 2018 (Occupational Health and Safety Management System) and ISO 37301:2021 (Compliance Management System).

PalDuct Panel Accessories

Polymer/Aluminium Invisible Profile/ Aluminium Joint Profile



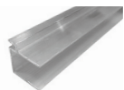
Thickness	20 mm
Code	4010 (Aluminium Invisible Profile)

Nominal Length	4 m
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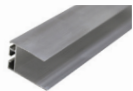


Thickness	20 mm
Code	4100 (Polymer Invisible Profile)

Nominal Length	4 m
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Thickness	30 mm
Code	4040 (Aluminium Joint Profile)



Code	4041 (Aluminium Invisible Profile)
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Nominal Length	4 m
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H Bayonet in Polymer



Thickness	20 mm
Code	4105

Nominal Length	4 m
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Aluminium Channel



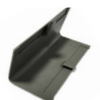
Thickness	30 mm
Code	4080

Nominal Length	4 m
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Corner Cover in Polymer



Thickness	20 mm
Code	4350



Thickness	30 mm
Code	4390

Corner Plate for Invisible Profile



Thickness	20 mm
Code	4360



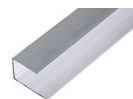
Thickness	30 mm
Code	4400

Steel Corner



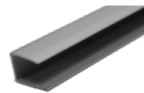
Code	4380
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Polymer/Aluminium U Profile

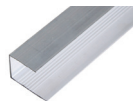


Thickness	20 mm
Code	4013 (Aluminium U Profile)

Code	4101 (Polymer U Profile)
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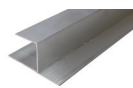
Nominal Length	4 m
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Thickness	30 mm
Code	4042 (Aluminium U Profile)

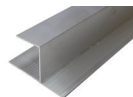
Nominal Length	4 m
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Aluminium Chair Profile



Thickness	20 mm
Code	4015

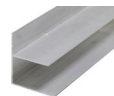
Nominal Length	4 m
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Thickness	30 mm
Code	4043

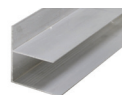
Nominal Length	4 m
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Aluminium F Profile



Thickness	20 mm
Code	4017

Nominal Length	4 m
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Thickness	30 mm
Code	4044

Nominal Length	4 m
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Reinforcement Bar in Aluminium



Code	4450
Nominal Length	4 m

Gasket Self Adhesive



Code	4461
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PalDuct Panel Accessories, Adhesive Material & Components

Reinforcement Disc in Aluminium



Code	4454
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Reinforcement Disc in Polymer



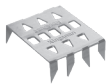
Code	4452
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Duct Support



Code	4455
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Tiger Clip



Code	3034
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Cross Fixing Device



Code	4453
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Kingspan PalDuct Sealant



Code	4250
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Screw for Stiffening Rod



Code	4458
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Kingspan PalDuct Adhesive



Code	4210
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Aluminium UL 181 Tape



Length	30 yard
Code	4340



Length	60 yard
Code	4346

Aluminium Tape

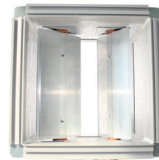


Width (in)	50 mm
Code	4300



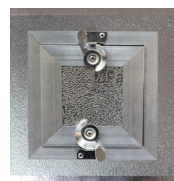
Width	75 mm
Code	4310

Phenolic Pre-insulated Volume Control



Thickness	20/30 mm
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Phenolic Pre-insulated Access Door



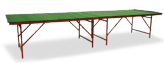
Thickness	20/30 mm
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Manual Fabrication Equipment

A complete set of professional hand tools and manual fabrication equipment has been specifically developed to enable efficient and economical fabrication of ductwork. Ease of portability provides the option for on-site fabrication.

A full line of automated machinery is also available for high volume ductwork requirements.

Portable Fabrication Table



Length (m)	4 x 1.2
Code	5054

Compass



Code	8008
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Aluminium Clamping Ruler



Length (m)	4
Code	5055



Length (m)	1.2
Code	5056



Manual Fabrication Equipment

Kingspan PalDuct Manual Fabrication Tool Kit



Left Cutter	45°
Right Cutter	45°
Double Blade Cutter	90°
Double Blade Cutter - 20 mm	45°
Compass	
Glue Spreading	Manual
Stiff Spatula	Aluminium
Manual Silicone Gun	
Measuring Tape	
Rivet Gun	
Rubber Hammer	
Knife	
Tape Marker	
Code	5053

Square in Aluminium



Size (mm)	1200
Code	5057



Size (mm)	700
Code	5058

Cutter Box



Left Cutter	45°
Right Cutter	45°
Double Blade Cutter 20 mm	45°
Straight Cutter	90°
Code	5082

Manual Bending Machine



Code	5059
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Pneumatic Glue Spreader



Code	5060
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Manual Extended Silicone Tool



Code	5063
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Double Blade Cutter



Size (mm)	20/30 45° Double Blade
Code	5069 (20 mm) 5070 (30 mm)

Single Blade Cutter



Size (mm)	20/30 90° Straight 45° Left 45° Right
Code	(20/30 mm) 5072 (90° Straight) 5068 (45° Left) 5071 (45° Right)

Stiff Spatula



Code	5075
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Glue Spreader Manual



Code	5081
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Tape Marker



Code	5077
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Rubber Hammer



Code	8040
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Automated Fabrication Equipment

Kingspan Ducting Supercut CNC Machine



Code	5004
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Features

- Gantry system CNC Machine.
- Tangential knife cutting head with full 360 rotational cutting capacity.
- Bakelite vacuum table.
- Pop up stops (1 set of 3 units).
- Processing area of approximately 5000 x 1500 mm.
- Rapid axis speeds up to 35 mt/min.
- CNC OSAI full digital 5 axis controller.
- One head with automatic tool movement.
- Pen Marker Tool.
- Vacuum pump x 2.
- Separate mobile console with PC and 17" LCD screen.
- Maintenance and instruction manuals (in English).
- Electric and pneumatic diagrams.
- With 12 months warranty.

Property	Unit	Value
Panel Thickness	mm	10/20/30
Max. Panel Width	mm	1200
Max. Panel Length	mm	4000
Aluminium Thickness	micron	Up to 200
Weight of Machine	kg	1500
Nominal Size of Machine	m	5 x 2.1 x 1.75 h
Power Supply		3 Phase 400 volts Hz 50

Order Guide

20 mm Panel (Internal Use)

To produce 1,000 m² of The Kingspan PalDuct Phenolic System, the following is a list of material and accessories for a standard construction requirement:

Code	Description	UOM	Approx. Qty.
2014	Panel 4000 x 1200 mm	m ²	1,000
4010	Aluminium Invisible Profile	m	760
4105	H Bayonet in Polymer	m	400
4350	Corner Cover in Polymer	pc	900
4360	Corner Plate for Invisible Profile	pc	1,200
4013	Aluminium U Profile	m	80
4015	Aluminium Chair Profile	m	80
4017	Aluminium F Profile	m	80
4210	Kingspan PalDuct Contact Adhesive	kg	91
4340/ 4346	Aluminium UL List Tape	roll	75/150
4250	Kingspan PalDuct Sealant	tube	90

30 mm Panel (External Use)

Code	Description	UOM	Approx. Qty.
2007	Panel 4000 x 1200 mm	m ²	1,000
4041	Aluminium Invisible Profile	m	760
4080	Aluminium Channel	m	400
4380	Steel Corner	pc	1,500
4400	Corner Plate for Invisible Profile	pc	1,500
4461	Gasket	pc	400
4042	Aluminium U Profile	m	80
4043	Aluminium Chair Profile	m	80
4044	Aluminium F Profile	m	80
4210	Kingspan PalDuct Contact Adhesive	kg	90
4340/ 4346	Aluminium UL List Tape	roll	75/150
4250	Kingspan PalDuct Sealant	tube	90
4450	Reinforcement Bar in Aluminium	m	120
4454	Reinforcement Disc	pc	200

Prestige Projects

Project Name: Museum of the Future
Location: Dubai, U.A.E.



Project Name: Dubai Hills Estate
Location: Dubai, UAE



Project Name: Opera Grand Tower
Location: Dubai, UAE



Project Name: Akoya
Location: Dubai, UAE



Project Name: Dubai Creek Harbour
Location: Dubai, UAE



Project Name: Arabian Ranches
Location: Dubai, UAE



Contact Details

Middle East

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E: info@kingspaninsulation.ae
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Technical Service

Kingspan Insulation has one of the most technically advanced support services in the industry offering a full spectrum of advice, free of charge for all types of design projects.

The Kingspan Insulation technical team are continually updating their knowledge on building regulations, best practise, construction methods and the development of building materials to ensure the advice and services provided are always one step ahead.

Services available:

- U-value calculations;
- Condensation/dew point risk calculations;
- Advice on product selection and product data for the full range of Kingspan Insulation products;
- Installation and fixing advice on all applications and products;
- Specification and construction advice; and
- Tapered Roofing Design service.

Email: technical@kingspaninsulation.ae

Kingspan Insulation LLC reserves the right to amend product specifications without prior notice. Product thicknesses shown in this document should not be taken as being available ex-stock and advice should be sought directly from Kingspan Insulation LLC. The information, technical details and fixing instructions etc. included in this literature are given in good faith and apply to uses described herein. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable codes, laws and regulations. For other applications or conditions of use, Kingspan Insulation offers a Technical Advisory Service, the advice of which should be sought for uses of Kingspan Insulation products that are not specifically described herein or specifically required for your region.

To ensure you are viewing the most recent and accurate product information, please visit this link <https://www.kingspan.com/ae/en/products/ductwork/pre-insulated-duct/palduct-phenolic/?s=d>

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