



See rear cover for applicable countries

π Pal™ Duct Phenolic System

PRODUCT CATALOGUE



*Low Energy –
Low Carbon Buildings*

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.



What is Kingspan PalDuct Technology?

- Complete line of components and accessories.
- Professional hand tools and automated machinery.
- Specialised training courses for ductwork fabricators.
- Duct design software to size the duct system and estimate the material needed.
- Technical support.

Advantages of Kingspan PalDuct Technology

- Easy to clean and hygienic.
- Environmentally friendly: CFC-free.
- Clean air: fibre-free insulation core.
- Lightweight: only 15% of sheet metal ducting.
- Resistant to fungus growth.
- Space saving: flush fitting installation possible.
- Low leakage: fully sealing systems conform to DW 144 Class C (high-pressure) air-leakage limit.
- Low 'λ' value.



- Energy savings: up to 20% annually.
- Fast-track installation: rapid erection combined with single-fix installation.
- On-site fabrication capability.
- No limits to duct sizes.
- High-compressive strength.
- High rigidity / integrity.
- Base material is impermeable to moisture.

Certifications & Compliance

All Kingspan PalDuct panels are manufactured to the highest standards under a management system certified to ISO 9001: 2008 (Quality Management Systems. Requirements), ISO 14001: 2004 (Environmental Management Systems. Requirements) and OHSAS 18001: 2007 (Health and Safety Management Systems. Requirements.).



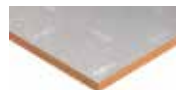
Ductwork fabricated from the Kingspan PalDuct Phenolic System is UL listed as a Class 1 Air Duct, to Standard for Safety UL 181 (Underwriters Laboratories: Factory Made Air Ducts & Air Connectors), when fabricated to a specification clearly defined by UL.



Kingspan PalDuct Phenolic System

Uses Kingspan PalDuct Phenolic Panels, which are 60 - 65 kg/m³ density, 20 / 30 mm thickness, CFC / HCFC-free and faced with an aluminium foil, that is lacquered with a corrosion-resistant polymer varnish.

Kingspan PalDuct 115



Thickness (mm)	20 / 30
Density (kg/m ³)	60 - 65
Panel Dimensions (mm)	3900 x 1200
Thermal Conductivity (W/m-K)	0.0285
Aluminium Finish	Embossed / Embossed
Fire and Smoke Classification	UL 181 Listed Class O BS 476 Part 6 & 7 BS 6401 EN 13501 UL 723

Kingspan PalDuct Panel Accessories

ART AC 10

Polymer / Aluminium Invisible Profile / Aluminium Joint Profile



20 AC 10

Thickness	20 mm
Code	20 AC 10
Nominal Length	4 m



30 AC 10

Thickness	30 mm
Code	30 AC
Nominal Length	4 m

ART AC 11

H Bayonet in Polymer



20 AC 11

Thickness	20 / 30 mm
Code	20 AC 11 30 AC 11
Nominal Length	4 m



30 AC 11

ART AC 12

Corner Cover in Polymer



20 AC 12

Code	20 AC 12 30 AC 12
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30 AC 12

ART AC 13

Corner Plate for Invisible Profile



20 AC 13

Thickness	20 / 30 mm
Code	20 AC 13 30 AC 13



30 AC 13

ART AC 14

Aluminium U Profile



20 AC 14

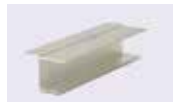
Thickness	20 / 30 mm
Code	20 AC 14 30 AC 14
Nominal Length	4 m



30 AC 14

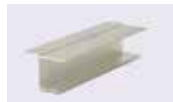
ART AC 15

Aluminium Chair Profile



20 AC 15

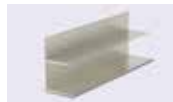
Thickness	20 / 30 mm
Code	20 AC 15 30 AC 15
Nominal Length	4 m



30 AC 15

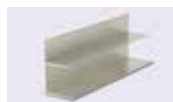
ART AC 16

Aluminium F Profile



20 AC 16

Thickness	20 / 30 mm
Code	20 AC 16 30 AC 16
Nominal Length	4 m



30 AC 16

ART AC 18

Reinforcement Bar in Aluminium



AC 18

Thickness	14 mm
Code	AC 18
Nominal Length	4 m

ART AC 19

Reinforcement Disc in Aluminium / Polymer



AC 19

Code	AC 19
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Kingspan **PalDuct** Panel Accessories, Adhesive Material & Components

ART AC 19 A

Cross Fixing Device



AC 19 A

Code	AC 19 A
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ART AC 20

Duct Support



AC 20

Code	AC 20
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ART AC 21

Tiger Connector



AC 21

Code	AC 21
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ART AC 22

Tiger Closure



AC 22

Code	AC 22
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DTCM 02

Screw for Stiffening Rod



DTCM 02

Code	DTCM 02
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ART M 24

Aluminium Tape



20 M 24

Width (in)	50 mm for 20 mm Panel 75 mm for 30 mm Panel
Code	20 M 24 30 M 24



30 M 24

ART M 25

Kingspan **PalDuct** Sealant



M 25

Code	M 25
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ART M 26

Thermal Insulation Tape



M 26

Width	100 mm
Code	M 26

ART P 23

Kingspan **PalDuct** Phenolic Adhesive



P 23

Capacity	15 kg / tin
Code	P 23

ART M 30

Gasket Self Adhesive



M 30

Code	M 30
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ART PN VCD

Phenolic Pre-insulated Volume Control Damper



PN VCD

Thickness	20 / 30 mm
Code	PN VCD

ART PN AC

Phenolic Pre-insulated Access Door



PN AC

Thickness	20 / 30 mm
Code	PN AC

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.

ART EM 27

Portable Fabrication Table



Size	4 x 1.2 m
Code	EM 27

EM 27

ART EM 24

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 Silicon Gun	
Measuring Tape	
Rivet Machine	
Rubber Hammer	
Knife	
Tape Maker	



Manual Fabrication Equipment

ART EM 30 / ART EM 31

Square in Aluminium



EM 30

Size	1.2 m
Code	EM 30



EM 31

Size	700 mm
Code	EM 31

ART EM 32

Compass



EM 32

Code	EM 32
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ART EM 33

Manual Bending Machine



EM 33

Code	EM 33
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ART EM 28 / Art EM 29

Aluminium Clamping Ruler



EM 28

Nominal Length	4 m
Code	EM 28



EM 29

Nominal Length	1.2 m
Code	EM 29

ART EM 35

Pneumatic Glue Spreader



EM 35

Code	EM 35
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ART EM 36

Pneumatic Extended Silicon Tool



EM 36

Code	EM 36
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ART ST 42

Double Blade Cutter



ST 42

Size	(20 / 30 mm) 45° Double Blade
Code	ST 42 (20 mm) ST 43 (30 mm)

ART ST 44 / ART ST 45 / ART ST 46

Single Blade Cutter



Size	(20 / 30 mm) 90° Straight 45° Left 45° Right
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Code	ST 44 (90° Straight) ST 45 (45° Left) ST 46 (45° Right)
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ART ST 48

Stiff Spatula



ST 48

Code	ST 48
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ART ST 49

Glue Spreader Manual



ST 49

Code	ST 49
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ART ST 50

Tape Marker



ST 50

Code	ST 50
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DTCM 12

Rubber Hammer



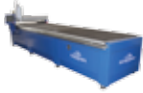
DTCM 12

Code	DTCM 12
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Automated Fabrication Equipment

ART EA 40

Kingspan Ducting Supercut Machine



EA 40

Code	EA 40
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Features

- Gantry system CNC Machine.
- Tangential knife cutting head with full 360 rotational cutting capacity.
- Bakelite vacuum table.
- Air conditioning to control panel.
- Automatic lubrication system.
- Pop up stops (1 set of 3 units).
- Processing area of approximately 4040 x 1240 mm.
- 110 mm Z axis clearance.
- Rapid axis speed up to 35 mt/min.
- CNCOSAI full digital 4 axis controller.
- One head with automatic tool changer.
- 50 mm straight knife block.
- 50 mm 45 deg angle knife block.
- Double knife 50 mm V groove tool at 20 deg.
- Double knife 50 mm V groove tool at 10 deg.
- Pen Marker Tool.
- Vacuum pump x 1 (250mc/h for material hold down).
- Separate mobile console with PC and 17" LCD screen.
- Maintenance and instruction manuals (in English).
- Electric and pneumatic diagrams.
- With 12 months warranty.

General	Value
Panel Thickness	10 / 20 / 30 mm
Aluminium Thickness	Up to 200 micron
Max. Panel Width	1.2 m
Max. Panel Length	4 m
Weight of Machine (kg)	750
Nominal Size of Machine	5.4 x 1.5 m
Power Supply	3 Phase 30MI + Neutral, + Earth

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.
Pal 115	Panel 4000 x 1200 mm	m ²	1,000
20AC10	Aluminium Invisible Profile	m	760
20AC11	H Bayonet in Polymer	m	400
20AC12	Corner Cover in Polymer	pc	900
20AC13	Corner Plate for Invisible Profile	pc	1,200
20AC14	Aluminium U Profile	m	80
20AC15	Aluminium Chair Profile	m	80
20AC16	Aluminium F Profile	m	80
P23	<i>Kingspan PalDuct</i> Adhesive	kg	91
20M24	Aluminium Tape	roll	150
M25	<i>Kingspan PalDuct</i> Sealant	tube	90

30 mm Panel (External 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.
Pal 115 / 30	Panel 4000 x 1200 mm	m ²	1,000
30AC10	Aluminium Joint Profile	m	760
30AC11	Aluminium Channel	m	400
30AC12	Steel Corner	pc	1,500
30AC13	Corner Plate for Invisible Profile	pc	1,500
M30	Gasket	pc	400
30AC14	Aluminium U Profile	m	80
30AC15	Aluminium Chair Profile	m	80
30AC16	Aluminium F Profile	m	80
M23	<i>Kingspan PalDuct</i> Adhesive	kg	90
30M24	Aluminium Tape	roll	150
M25	<i>Kingspan PalDuct</i> Sealant	tube	90
AC18	Reinforcement Bar in Aluminium	m	120
AC19	Reinforcement Disc	pc	200



Notes

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, contact Kingspan Insulation LLC. Advice should be sought for uses of Kingspan Insulation products that are not specifically described herein. The fire tests referenced in this literature and the assigned results are not intended to reflect hazards presented by the materials and products described herein under actual fire conditions. Please check that your copy of the literature is current by visiting www.kingspaninsulation.com.



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Countries comprise: all of Africa; South and Central America except Mexico; the Caribbean; the Middle East and Asia as far north and east (and including) Turkey, Georgia, Azerbaijan, Kazakhstan, Kyrgyzstan, Afghanistan, Pakistan, India, Nepal, Bhutan and Bangladesh.

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