



See over leaf for applicable countries

πPal™ Duct Phenolic System

TECHNICAL DATA SHEET



*Low Energy –
Low Carbon Buildings*

Kingspan **PalDuct** Phenolic System

Introduction

The *Kingspan PalDuct Phenolic System* is an advanced and innovative pre-insulated rectangular HVAC ductwork system. It comprises *Kingspan PalDuct Phenolic* panels, fabrication methods, coupling systems and a complete line of accessories to produce ductwork in sections up to 4 m long. There are three available *Kingspan PalDuct Phenolic* Panels, PAL/115, PAL/115/30/60 and PAL/115/30/200, that can be used in the fabrication of the *Kingspan PalDuct Phenolic System*.

Operating Recommendations & Limitations

It is recommended that ductwork fabricated from the *Kingspan PalDuct Phenolic System* is used for operation as supply, return, fresh and exhaust air ductwork for HVAC systems within the limits shown in the table below. These limits assume that the ductwork has been fabricated in accordance with The *Kingspan PalDuct* Fabrication Guidelines.

Property	Value	
	PAL/115	PAL/115/30/60 & PAL/115/30/200
Pressure Limit (Pa)	1000	1750
Air Speed (m/s)	15	35
Application	Indoor	Outdoor

Ductwork fabricated from PAL/115 panels can be used in installations with temperatures ranging from -25°C to +80°C. Within this temperature range, no relevant reduction of the insulating, chemical or physical characteristics of the panel will be observed.

Application Suitability

The *Kingspan PalDuct Phenolic System* is designed for use in building services / HVAC applications. It is suitable for both new build and refurbishment projects in the residential, commercial, public, light industrial and leisure sectors. It is especially suitable for use on high specification projects where insulants with a fibre-free core may be preferred, for instance:

- the food, beverage and pharmaceutical industries;
- clean air and hygiene controlled environments;
- high relative humidity environments;
- swimming pools;
- non-ferrous applications; and
- sterile areas of hospitals and communication / server rooms in data centres.

Fabrication and Installation

Ductwork fabricated from The *Kingspan PalDuct Phenolic System* should only be fabricated by specially trained fabricators who have completed the specialised and comprehensive training course provided for the System.

Kingspan **PalDuct** Phenolic Panels

Kingspan PalDuct Phenolic Panels comprise a fibre-free high performance rigid thermoset phenolic insulation core, faced on both sides with an embossed aluminium foil. The aluminium foil is lacquered with corrosion resistant polymer varnish.

Fibre-free Core The core is manufactured with a CFC/HCFC-free blowing agent.

Property	Value	
	PAL/115	PAL/115/30/60 & PAL/115/30/200
Product Thickness (mm)	20	30
Panel Dimensions (mm)	4000 x 1200	4000 x 1200
Density (kg/m ³)	60 ± 5	65 ± 5
Weight of the Panel (kg/m ²)	1.90	1.93 / 2.42
Thermal Conductivity (W/m·K at 10°C)	0.0285	0.0285

Compliance

Kingspan PalDuct Phenolic panels comply with the British and American Standards shown in the table below.

Property	Classification / Value	Standard
Fire Propagation Index	Class 0	BS 476 Part 6
Surfaces Spread of Flame	Class 1	BS 476 Part 7
Flame Spread Index and Smoke Developed Index	Class A	NFPA 90A

UL (Underwriters Laboratories)

Ductwork fabricated from The *Kingspan PalDuct Phenolic System* is UL Listed as a Class 1 Air Duct, to Standard for Safety UL 181 (Factory Made Air Ducts & Air Connectors). The UL Listing requires that ductwork is fabricated using:

- 20-30 mm *Kingspan PalDuct Phenolic* panels;
- either, or a combination of, aluminium grip and / or the Tiger Clip coupling systems;
- a 2 1/2" / 63 mm wide (minimum) aluminium foil vapour barrier tape that is UL Listed A-P to Standard for Safety UL 181 A (Standard for Closure Systems for use with Rigid Air Ducts); and
- *Kingspan PalDuct* Sealant / Caulk.

Kingspan Insulation reserves the right to amend product specifications without prior notice. The information contained in the document is given in good faith and applies to the uses described. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. Kingspan Insulation recommends using the Technical Advice service.



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

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