πPal™ Duct PIR System

TECHNICAL DATA SHEET
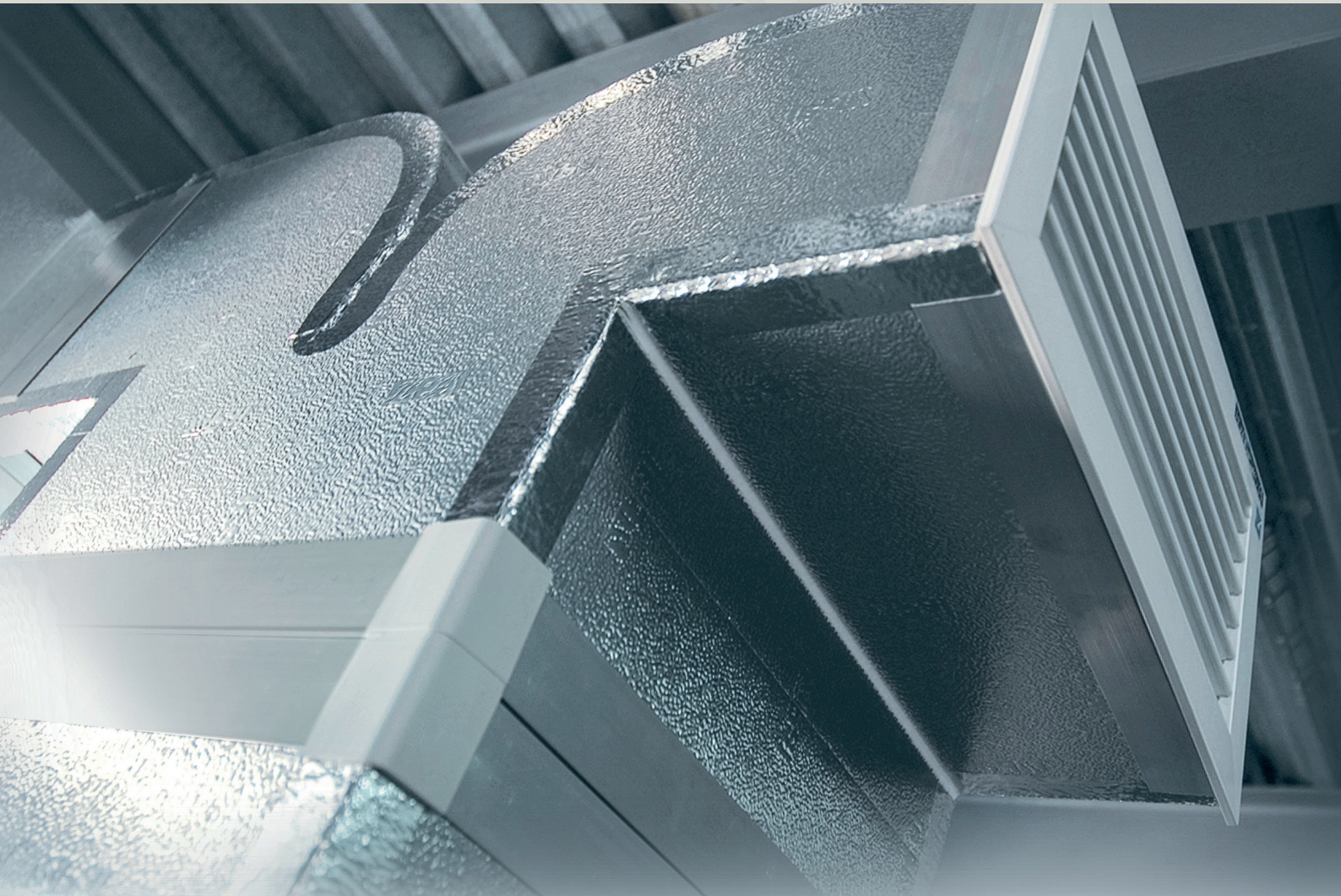
Fibre-free Core

Kingspan™

Low Energy –
Low Carbon Buildings

Kingspan PalDuct PIR System

Introduction

The *Kingspan* **Pal**Duct PIR System is an advanced and innovative pre-insulated rectangular HVAC ductwork system. It comprises *Kingspan* **Pal**Duct PIR panels, fabrication methods, coupling systems and a complete line of accessories to produce ductwork in sections up to 4 m long. There are two available *Kingspan* **Pal**Duct PIR Panels, 20P80 and 30P200, that can be used in the fabrication of the *Kingspan* **Pal**Duct PIR System.

Operating Recommendations & Limitations

It is recommended that ductwork fabricated from the *Kingspan* **Pal**Duct PIR 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* **Pal**Duct Fabrication Guidelines.

Property	Value	
	20P80	30P200
Pressure Limit (Pa)	1000	1750
Air Speed (m/s)	15	35
Application	Indoor	Outdoor

Ductwork fabricated from 20P80 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* **Pal**Duct PIR 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* **Pal**Duct PIR System should only be fabricated by specially trained fabricators who have completed the specialised and comprehensive training course provided for the System.

Kingspan **Pal**Duct PIR Panels

Kingspan **Pal**Duct PIR Panels comprise a fibre-free high performance rigid thermoset polyisocyanurate (PIR) insulation core, faced on both sides with an embossed aluminium foil. The aluminium foil is lacquered with corrosion resistant polymer varnish.

Property	Value	
	20P80	30P200
Product Thickness (mm)	20	30
Panel Dimensions (mm)	4000 x 1200	4000 x 1200
Density (kg/m³)	45	50
Weight of the Panel (kg/m²)	1.36	1.90
Thermal Conductivity (W/m·K)	0.020	0.020

Compliance

Kingspan **Pal**Duct PIR 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	ASTM E 84, NFPA 255 UL 723, NFPA 101 Life Safety Code
Toxicity Index	5.7 Average S.O.D. < 200	NES – 713 IMO Resolution MSC 61 (67)
Epiradiateur Test	M1	NFP 92-501
Compressive Strength (kPa)	220.9	ASTM D1621
Flexural Strength (kPa)	1170	ASTM C203
Sound Attenuation Test	Average SRI (100-3150 Hz) 14.1	BS 2750
Water Absorption Level	0.14% - 24 hours immersion	ASTM C209

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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