iPDuct Eco System

Using Anti-Microbial Coated Aluminium Faced Panels

Fibre-free Core

Biomaster PROTECTED

iPDuct Insulation Pars

Introduction

Overview

Micro-organisms are unavoidably present in the air we breathe.Bacteria can be harmful and can be the cause of unwanted odours, stains and infectious diseases.

The HVAC industry has become to be increasingly concerned with the quality of air that is distributed through the ductwork in a building. Hygienic coatings for HVAC ductwork have been designed for use in locations such as food preparation areas, clinics, schools and hospitals, where it is important to limit the growth of bacteria. Moreover, this may be especially important in high humidity areas where bacteria can multiply rapidly.

The iPDuct Eco System is an advanced and innovative pre-insulated rectangular HVAC ductwork system. It comprises iPDuct Eco panels, fabrication methods, coupling systems and a complete line of accessories to produce ductwork in sections up to 4 m long.

The iPDuct Eco System uses Panels and components, which are coated in an innovative antimicrobial technology that inhibits the growth of bacteria.

Operating Recommendations & Limitations

It is recommended that ductwork fabricated from The iPDuct Eco 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 iPDuct Fabrication Guidelines.

Property	Value
Pressure Limit (Pa)	1000
Air Speed (m/s)	15
Max. Panel Length	Unlimited
Application	Indoor
Temperature	Internal air temperature of –20°C to +75°C during continuous operation

Application Suitability

The iPDuct Eco 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 and light industrial and leisure sectors. Moreover, it is especially suitable for use in projects where the spread of bacteria may be a consideration, such as:

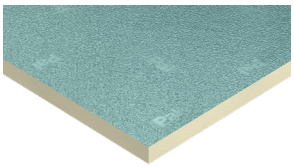
- clinics and hospitals;
- clean air and hygiene controlled environments;
- laboratories;
- food, beverage and pharmaceutical industries; and
- operating rooms.

Fabrication and Installation

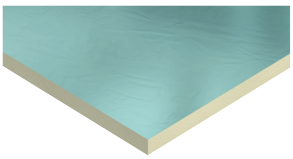
Ductwork fabricated from The Kingspan PalDuct Eco System should only be fabricated by specially trained fabricators who have completed the specialised and comprehensive training course provided for the System.

iPDuct Eco Panels

iPDuct Eco Panel comprises a fibre-free rigid thermoset polyisocyanurate (PIR) or polyurethane (PUR) insulation core, faced on one side with an embossed aluminium foil and the other with a smooth aluminium foil. Both facings are protected with Biomaster antimicrobial technology. The panels can be joined together with antimicrobial coated, green coloured aluminium and polymer profiles and adhesive materials to create a pre–insulated HVAC ductwork system that can resist the spread of surface bacteria.



Embossed



Smooth

Property	Value
Thickness (mm)	20 & 30
Panel Dimensions (mm)	4000 x 1200
Density (kg/m^3)	48–50
Thermal Conductivity (W/m.K)	0.020
Aluminium Foil	Smooth/embossed Antimicrobial Coating
Compressive Strength	typically exceeds 175 kPa

Fittings & Accessories

The iPDuct Eco System comprises a complete line of profiles and accessories for joining panels, which produces pre–insulated rigid ductwork sections that, on the surface of the duct, resist the spread of bacteria.

iPDuct Eco System

Features

The iPDuct Eco System has been developed to fight harmful airborne micro-organisms more effectively. iPDuct Eco Panels are protected with Biomaster Antibacterial Technology, which has been shown to inhibit the growth of bacteria on the surface of the ductwork system.

The iPDuct Eco System has been tested by an independent laboratory and found to have bacterial growth resistance on the following organisms:

- Pseudomas aeruginosa;
- Staphylococcus aureus; and
- Escherichia coli.

Additionally, due to its pre-insulated nature the System is lightweight, and therefore, easy to install. The System is also easy to clean and maintain, which ensures that a consistent quality of air can be upheld inside the ductwork.

Compliance

Insulation Pars complies with Management System standards: ISO 9001: 2015 (Quality management systems. Requirements), ISO 14001: 2015 (Environmental Management Systems. Requirements) and BS / I.S OHSAS 18001: 2007 (Health and Safety Management Systems. Requirements). iPDuct Eco products have Factory Control, Product Level certification and Product Approval issued by Warrington standards. iPDuct Eco has been tested in accordance with the requirements of EN 13403:2013 (Ventilation for buildings non-metallic ducts. Ductwork made from insulation duct boards.)

How does Biomaster protection work?

Biomaster is based on silver ion technology. When bacteria comes into contact with a Biomaster protected surface, the silver ions prevent them from growing, producing energy or replicating, therefore they die.

The controlled release of the active ingredient provides maximum antibacterial protection for the lifetime of the product.

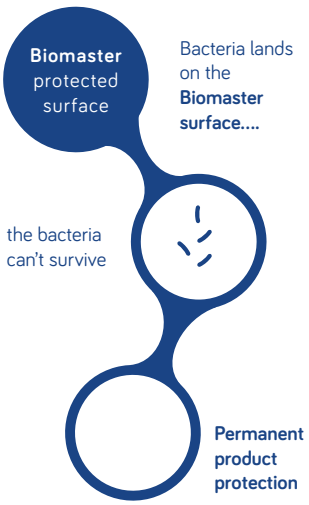


Figure 1: How Biomaster Antimicrobial Technology Works

The active antimicrobial agent in Biomaster complies with the required legislation including:

- Biocidal Products Regulation (BPR);
- Food and Drug Administration (FDA); and
- Environmental Protection Agency (EPA).