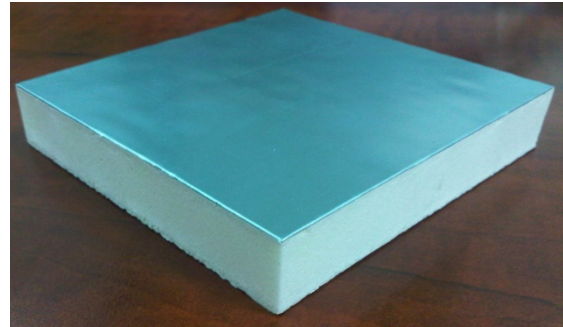
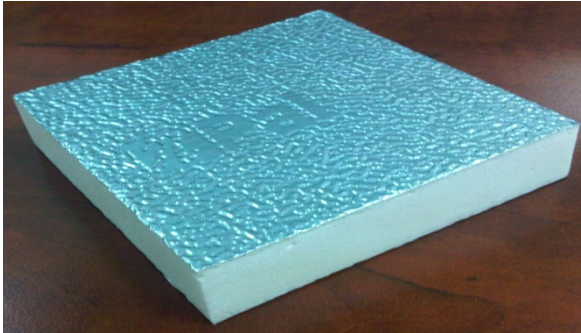


What is PAL ECO SYSTEM?

PAL Eco System is a pre-insulated ductwork made of **Pal Eco Panel**, an aluminum / polyurethane sandwich panel panels, comprising a special antimicrobial coated aluminum foil on both sides and expanded polyurethane rigid foam board where joints between ducts uses **Pal Eco Accessories**, suitable for the construction of air ducts in heating and air-conditioning installations.

- Clinics and Hospitals
- Clean Rooms
- Laboratories

- Food and Pharmaceutical Industries
- Operating Rooms



CHARACTERISTICS	
Dimension of the Panel	4000 x 1200 mm
Aluminum Finishing	Smooth / Embossed Both sides of the aluminum foils are antimicrobial coated to ensure that air passing through inside the duct and the air moving outside the duct is safe and clean
Insulating Material	Closed cell rigid expanded PAL Eco Panel polyurethane foam, physiologically and chemically inert and insoluble, vermin proof, fungus proof, anti-bacterial, non metabolisable
Thermal Conductivity	0.020 W/mk at 10°C

The aluminum foils covering the panel assure a perfect vapor barrier.

Thickness of the panel	20 mm
Thickness of the aluminum	80/80 microns
Density of the foam	45 kg/m ³
Weight of the panel	1.36 kg/m ²

FIRE REACTION	
CLASS O	according to British Standard 476 Part 6 and 7
CLASS A	according to ASTM E84

ANTIMICROBIAL & ANTIBACTERIAL REACTION	
ASTM G21	Resistance to the following organisms: <ul style="list-style-type: none"> • <i>Aspergillus niger</i> • <i>Aureobasidium pullulans</i> • <i>Chaetomium globosum</i> • <i>Penicillium funiculosum</i> • <i>Trichoderma virens</i>

ASTM E2180	Resistance to the following organisms: <ul style="list-style-type: none"> • <i>Staphylococcus aureus</i>
ASTM G21	Resistance to the following organisms: <ul style="list-style-type: none"> • <i>Pseudomonas aeruginosa</i> • <i>Staphylococcus aureus</i>

TEMPERATURE OF USE

The air ducts made with 20ES80 panels can be used in installations with temperatures ranging from -25°C to +80°C, always operating. No relevant reduction of the insulating, chemical or physical characteristics of the panel will be observed.

PRESSURE OF USE

20ES80	The air ducts made can be used in installations with pressures up to 1000 Pa, always in accordance with the PAL construction guidelines.
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SPECIFICATION OF USE

The air ducts fabricated by using 20ES80 panels can be installed in plants:

- with air speed up to 15 m/s
- with pressures up to 1000 Pa
- indoor

PAL Eco Panels comply with International Standards, according to British and well known American Standards.

PROPERTIES	CLASSIFICATION / VALUE	REFERENCE
Bacterial Resistance Test Fungal Resistance Test	No Growth for: <ul style="list-style-type: none"> • <i>Pseudomonas aeruginosa</i> • <i>Staphylococcus aureus</i> • <i>Aspergillus niger</i> • <i>Aureobasidium pullulans</i> • <i>Chaetomium globosum</i> • <i>Penicillium funiculosum</i> • <i>Trichoderma virens</i> 	ASTM G21 ASTM G22 ASTM E2180
Fire Propagation Index	Class "0"	BS 476 Part 6
Surfaces Spread of Flame	Class "1"	BS 476 Part 7
Certification of Product Listing No. 016	Class "0"	BS 476 Part 6, 7
Certificate of Factory Production Control and Product Labels		FPC Requirement Product Label Certificate of Approval ME0016
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)
Thermal Conductivity	0.020 w/m.k. 0.169 Btu w/m.k. ft ²	ASTM C518
Compressive Strength	220.9 kpa	ASTM D1621
Flexural Strength	1170 kpa	ASTM C203
Panel Density	71.5 kg/m ³	ASTM D1622
Water Absorption Level	0.14% (24 hours immersion)	ASTM C209

Pal SYSTEM INTERNATIONAL
Pre-Insulated Ducting Technology

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warringtonfire - mideast
Listing No. 016
PAL Panel Class O