CERTIFICATE OF APPROVAL
No. ME0016

This is to certify that the referenced products of

PAL MIDDLE EAST LLC

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have been assessed against the requirements of the *warringtonfire – mideast certification scheme* and are approved for use within the scope of any test and/or assessment report(s) referenced.

Panel 100

The product, a flame retardant grade polyurethane foam insulation board faced on both sides with a coated, decoratively embossed aluminium foil facing is fully described in the test reports listed below, and in Annex 1 to this Certificate of Approval.

This Approval has been prepared from test data summarised below and derived from the test reports referenced below. Full details of the product, justification for the conclusions given, along with validity statements are given in those reports.

Test Evidence

WF Report No: 154016	BS 476: Part 6: 1989	Fire propagation index, I = 5.3 subindex, i_1 = 1.3 subindex, i_2 = 3.0 subindex, i_3 = 1.1
WF Report No: 154015	BS 476: Part 7: 1997	Class 1 surface spread of flame

CERTIFICATE No. ME0016
PAL MIDDLE EAST LLC

Panel 100

<table>
<tr>
<td>WF Report No: 159219</td>
<td>NES 713 Category 2</td>
<td>
<table>
<tr><th>Test Run</th><th>Result</th></tr>
<tr><td>1</td><td>5.727</td></tr>
<tr><td>2</td><td>5.664</td></tr>
<tr><td>Average</td><td>5.70</td></tr>
</table>
Toxicity index per 100g material.
</td>
</tr>
<tr>
<td>WF Report No: 162279</td>
<td>IMO Resolution MSC 61 (67) 1996; Annex 1, Part 2</td>
<td>
<table>
<tr><th colspan="2" rowspan="2">GAS</th><th rowspan="2">Limit (ppm)</th><th colspan="3">Reading (ppm)</th></tr>
<tr><th>Condition 1</th><th>Condition 2</th><th>Condition 3</th></tr>
<tr><td>Carbon Monoxide</td><td>CO</td><td>1450</td><td>72</td><td>24</td><td>77</td></tr>
<tr><td>Hydrochloric Acid</td><td>HCl</td><td>600</td><td>ND</td><td>ND</td><td>1</td></tr>
<tr><td>Hydrogen Bromide</td><td>HBr</td><td>600</td><td>ND</td><td>ND</td><td>ND</td></tr>
<tr><td>Hydrogen Fluoride</td><td>HF</td><td>600</td><td>ND</td><td>ND</td><td>ND</td></tr>
<tr><td>Hydrogen Cyanide</td><td>HCN</td><td>140</td><td>ND</td><td>ND</td><td>4</td></tr>
<tr><td>Nitrous Fumes</td><td>NOx</td><td>350</td><td>13</td><td>ND</td><td>ND</td></tr>
<tr><td>Sulphur Dioxide</td><td>SO2</td><td>120</td><td>ND</td><td>ND</td><td>ND</td></tr>
<tr><td colspan="2">Averaged Specific Optical Density</td><td>200</td><td>2</td><td>9</td><td>143</td></tr>
</table>
Where ND indicates non-detected.
</td>
</tr>
</table>

The polyurethane foam insulation board has been appraised as having a Class 0 performance when fire tested and assessed by warringtonfire to BS 476: Part 6: 1989 'Method of test for fire propagation of products' and BS 476: Part 7: 1997 'Surface spread of flame test for materials' as defined in paragraph A13(b) of Approved Document B, `Fire Safety', to the Building Regulations 2006.

The product was assessed in accordance with the procedure specified in Defence Standard 02-713 2006 to compare the particular combustion characteristics of the materials, both natural and synthetic types. The numeric summation of the toxicity factors of selected gas produced by complete combustion of the material in air under the conditions specified.

The product was also tested in accordance IMO Resolution MSC 61 (67) Part 2, Annex 1. The resolution details a classification system based on the maximum specific optical density smoke occurring during the test, averaged over three replicate tests, carried out in each of three test conditions. In addition, the Resolution specified limits for 7 toxic gases which must not be exceeded in any of the three conditions. The product achieved the criteria for smoke generation and toxicity for bulkhead, wall and ceiling linings as specified in the Resolution for IMO applications.

Certification is awarded on the basis of initial type testing to BS 476: Part 6 & BS 476: Part 7 NES713 Category 2 and IMO Resolution MSC 61(67) Part 2, Annex 1 as appropriate, initial inspection and ongoing surveillance of factory production control, and ongoing compliance with the scheme requirements including labelling of the product as specified. The currency of the certification may be verified at www.warringtonfire.net/mideast.

CERTIFICATE No. ME0016
PAL MIDDLE EAST LLC

Panel 100

Field Of Application

In accordance with the guidance in Approved Document B of the Building Regulations fro England and Wales 2006, a material with a fire performance classification of Class 0 may be used in the following areas within a building.

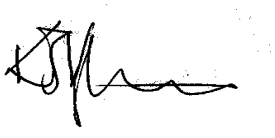
1) Wall and Ceiling Linings for unprotected escape routes and rooms
2) In roof spaces
3) In semi exposed and exposed car parks
4) In shafts and concealed spaces
5) Above fire resistant suspended ceilings
6) As pipe insulation (not including penetration seals
7) As duct insulation (not including penetrations)
8) As insulation to machinery
9) On external surfaces of multi-storey buildings
10) As insulation between non combustible and limited combustible materials used to fabricate walls, ceilings and roofs. It may NOT be used in the core of panels used in the following buildings, areas of buildings or applications:

    - cooking areas
    - hot areas
    - bakeries
    - fire breaks in combustible panels
    - fire stopping panels
    - general fire protection

The product may be used in the following purpose groups:

a) Residential dwellings
b) Residential institutions
c) Offices
d) Shops and commercial buildings
e) Assembly buildings and recreational buildings
f) Industrial buildings
g) Storage buildings

Signed for and on behalf of Warrington Certification



Sir Ken Knight
Chairman - Management Council

Issued: 2nd April 2009
Valid to: 1st April 2014

CERTIFICATE No. ME0016
PAL MIDDLE EAST LLC

Annex 1

General description		A flame retardant grade polyurethane foam insulation board faced on both sides with a coated, decoratively embossed aluminium foil facing
Product reference of composite		"Panel 100"
Name of manufacturer of composite		PAL Middle East L.L.C
Overall thickness of composite		21mm
Overall weight per unit area of composite		1.44 kg/m^2
Component configuration		1 - Coating (test face) 2 - Foil facing (decoratively embossed and incorporating the word "PAL" over areas of its surface) 3 - Foam insulation board 4 - Foil facing (decoratively embossed and incorporating the word "PAL" over areas of its surface) 5 - Coating
Coating (components 1 and 5)	Generic type	UV protective polyester varnish
	Product reference	See Note 1 below
	Name of manufacturer	
	Colour	"Clear"
	Number of coats	See Note 1 below
	Application rate	
	Application method	Coil coated
	Specific gravity	See Note 2 below
	Curing process	
	Flame retardant details	See Note 1 below
Foil facing (components 2 and 4)	Generic type	A decoratively embossed aluminium foil facing. In addition to the embossment, areas of its surface were not embossed. These non-embossed areas formed the word "PAL" and this word was distributed at regular intervals over the surface of the facing.
	Product reference	See Note 1 below
	Name of manufacturer	
	Weight per unit area	
	Thickness	80 microns
	Colour reference	"Silver"
	Composition details	See Note 1 below
	Flame retardant details	See Note 1 below
Adhesion of foil facings (components 2 and 4) to foam insulation board (component 3)		See Note 1 below
Foam insulation board (component 3)	Generic type	'CFC' and 'HCFC' free flame retardant grade polyurethane foam board
	Product reference	"PAL Expanded PU Foam"
	Name of manufacturer	PAL Middle East L.L.C
	Thickness	21mm
	Density	50kg/m^3
	Colour	"Yellow"
	Flame retardant details	The sponsor provided information relating to the generic type of flame retardant additive but did not provide the trade name or amount utilised in the production of the product
Brief description of manufacturing process		See Note 1 below

Note 1 - The sponsor of the test has provided this information but at the specific request of the sponsor, these details have been omitted from the report and are held on the confidential file relating to this investigation.
Note 2 - The sponsor was unable to provide this information as they do not manufacture the component