Intumescent fire seals

PALUSOL® PL & PL ALU
**Product description**

**PALUSOL PL** is an intumescent fire seal made from **PALUSOL**, a hydrated sodium silicate material, encapsulated in a vinyl foil or an aluminium foil for the **PALUSOL PL ALU** version. When exposed to fire, **PALUSOL PL** and **PALUSOL PL ALU** are activated at a temperature of between 100 and 120°C, the vinyl or aluminium runs and a rigid, non-combustible foam is formed which offers a high level of thermal insulation.

In contact with heat, the intumescent material expands in one direction to at least five times its initial thickness. The expansion pressure thereby generated can reach 1.5N/mm². This provides an effective barrier preventing the escape of any flames, smoke or hot gases around the perimeter of a fire-resistant element which is sealed in this way.

**Features**

In interior applications, the vinyl film and aluminium film extend the service life of the **PALUSOL PL** and **PALUSOL PL ALU** intumescent seals by protecting it against humidity and from carbon dioxide, thus preventing weathering.

The presence of a vinyl film or an aluminium film in no way affects the intumescent reaction of the **PALUSOL**.

Other features: refer to the technical data sheets for **PALUSOL 100, 104 & 210**.

**Physical properties of PALUSOL PL & PL ALU**

<table>
<thead>
<tr>
<th>Property</th>
<th><strong>PALUSOL PL</strong></th>
<th><strong>PALUSOL PL ALU</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness of film</td>
<td>~0.1 mm</td>
<td>~0.1 mm</td>
</tr>
<tr>
<td>Thickness of <strong>PALUSOL 100</strong></td>
<td>1.9 mm</td>
<td>1.9 mm or 3.6 mm</td>
</tr>
<tr>
<td>Thickness of <strong>PALUSOL 104</strong></td>
<td>3.6 mm</td>
<td></td>
</tr>
</tbody>
</table>

Values given for information only (*). Refer to the paragraph on tolerances.

**Foaming height (10 minutes at 550°C under load)**> 5 x initial thickness

**Expansion pressure**≥ 0.9 N/mm²

**Thermal conductivity (at 20°C)**0.8 W/m.K

**Water content**25% to 40% of weight

**Areal weight **PALUSOL 100** (average)**3.0 kg/m²

**Areal weight **PALUSOL 104** (average)**5.7 kg/m²

**Chemical composition**

**PALUSOL** is a material made from hydrated sodium silicate, coated on both sides with an epoxy resin. The centre layer is reinforced with glass fibre. **PALUSOL** is asbestos-free.
**Applications**

PALUSOL PL and PALUSOL PL ALU are intended for use where the requirement for mechanical resistance is reduced:
- Peripheral seals for fire resistant systems (doors, shutters, dampers, cabinets, doors, etc.)
- With an anti-finger trapping system
- Circular fire dampers
- Enhancement of the fire resistance of various elements etc.

Where mechanical resistance is required, the use of PALUSOL P or PALUSOL PM encapsulated in a rigid thermoplastic sheath is recommended.

**Product range**

**Sections**

<table>
<thead>
<tr>
<th>Width and thickness</th>
<th>Width and thickness</th>
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</thead>
<tbody>
<tr>
<td>10 x 2 mm</td>
<td>10 x 4 mm</td>
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<tr>
<td>15 x 2 mm</td>
<td>15 x 4 mm</td>
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<tr>
<td>20 x 2 mm</td>
<td>20 x 4 mm</td>
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<tr>
<td>25 x 2 mm</td>
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<td>60 x 2 mm</td>
<td>55 x 4 mm</td>
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<tr>
<td>70 x 2 mm</td>
<td>70 x 4 mm</td>
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</tbody>
</table>

For PALUSOL PL ALU sections please contact us.

**Colours PALUSOL PL:**
White, black, red, and grey.
For other colours please contact us.

**Adhesive version (ref. SA):**
PALUSOL PL and PALUSOL PL ALU can be surfaced with a double-sided adhesive strip to facilitate installation.

**Standard length:** 2100 mm.
Any other length can be fabricated up to a maximum of 2100 mm.

**Tolerances:**
- Thickness(*): ± 0.4 mm
- Width: ± 0.5 mm
- Length: Raw parts: 0/+ 15 mm
  Cut parts: 0/- 1 mm

(*) On products without self-adhesive strip.
Long-term efficiency of PALUSOL

The long-term efficiency of PALUSOL has been proven in normal climatic conditions. The results of tests conducted by BASF SE and by independent institutions (such as the Institut für Holzforschung in Munich) show that after 40 years of prolonged exposure in normal conditions of use, PALUSOL retained its efficiency in the event of fire (the expansion height and expansion pressure parameters remained constant).

**Recommendations for use**

- Do not use at temperatures in excess of 40°C.
- For applications in sustained high humidity levels (> 90%), or when in regular contact with water or steam (marine, rail applications), we recommend the use of WATERTIGHT PALUSOL P or PM (cf. technical data sheet for PALUSOL P and PM).

Installation

Since the intumescent action of the PALUSOL PL and PALUSOL PL ALU seals seal creates an expansion pressure, for sealing a fire resistant door it is essential that it is fitted to the edge of the frame or door leaf. In order to achieve an aesthetically acceptable installation as well as mechanical protection, the PALUSOL PL and PALUSOL PL ALU intumescent seals should be fitted into a groove which is wider than the section. This groove will also serve to channel the expansion of the intumescent material.

The surface must be free from dust, grease and any kind of wax. Remove poorly adhering paint.

The seal can be fixed by gluing, but we recommend fixing by a double-sided adhesive strip which is easy to use. This method of fixing requires the seal to be mounted to allow the adhesive strip to be applied correctly onto the receiving surface.

**Packaging**

PALUSOL PL and PALUSOL PL ALU are delivered in flat, semi-rigid profiles, packed into wooden boxes.

**Storage**

Store carefully in a dry, well-ventilated location. Prolonged storage in the container, may cause deformation of the PALUSOL PL and PALUSOL PL ALU seals. Every time a part is removed, reposition the rows tightly.

**Health and safety measures**

Observe usual workplace health and safety rules

Refer to the safety data sheet for PALUSOL 100, 104 & 210.

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