Fire Rated Expanding Foam

Pyroplex® Fire Rated Expanding Foam is a flame retardant based polyurethane expanding foam, which sets in a solid form by using moisture present in the atmosphere. The product is suitable for sealing gaps around doors and window frames, using secondary fire sealing media around services, such as metallic cable trays and general service penetrations.

Pyroplex® Fire Rated Expanding Foam is an ablative product, which will achieve a fire resistance period of up to 120 minutes when used in conjunction with a mineral fibre backing material.

Pyroplex® Fire Rated Expanding Foam has been tested in accordance with BS 476: Part 20: 1987 and BS EN 1366-4: 2006 and has a European Classification in accordance with BS EN 13501-2: 2007.

Field of application

Pyroplex® Fire Rated Expanding Foam is suitable for use in a wide range of construction and building fire stopping solutions, including:

- Cavity joints between doors and window frames
- Non-combustible services, including ducts and cable trays

Product features

- Fire Resistance of up to 4 hours dependent upon gap to depth ratio.
- Quick curing, can be cut, sawn or formed within 60 minutes of application.
- Easy to install, with up to 3m linear joint being fitted in under 10 minutes.
- Coloured pink to signify its ability to withstand and support combustion.
- Can be painted and/or plastered without additional primers.
- Expands up to 4 times its volume, which can prove an economical solution to other alternatives.

Product data

<table>
<thead>
<tr>
<th>Gap width</th>
<th>Gap depth</th>
<th>Integrity</th>
<th>Insulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm</td>
<td>200mm</td>
<td>120 minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>20mm</td>
<td>200mm</td>
<td>120 minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>30mm</td>
<td>200mm</td>
<td>120 minutes</td>
<td>120 minutes</td>
</tr>
<tr>
<td>40mm</td>
<td>200mm</td>
<td>120 minutes</td>
<td>120 minutes</td>
</tr>
</tbody>
</table>

Product testing

Pyroplex® have carried out numerous independent fire resistance tests to confirm the suitability of the product and to demonstrate product compliance, including BS EN 1366-4: 2000, and has a European Classification in accordance with BS EN 13501-2: 2007.

The reports have been consolidated in Assessment Report No. WF147514 and this is available on request from Pyroplex® Limited.

Installation instructions

Preparation of the substrate:
Surfaces must be firm, clean, free of dust and loose particles. The cavity or voided area to be filled must be well moistened with water, this will aid installation adhesion to the substrate. It may be necessary to use a primer, prior to the application of the foam.

It is important to use the foam within a temperature controlled environment, the minimum temperature to which the foam can be installed should be no less than +20°C.

If the temperature is below +20°C the foam may show signs of slumping and irregular expansion.

Cans should not be left in an over-heated environment, temperatures above +50°C or exposed to direct sunlight.

Prior to application ensure that the surrounding area is protected, in particular when using the foam in retrofit applications. It may also be necessary to mask and protect the surrounding area of the cavity, particularly in areas where the compartment may be decorated or furnished.

Shake the can for two minutes, until the foam inside becomes liquid. This is essential to ensure the performance of the product. Then attach the adapter or gun to the canister.

Fill the cavity from the base of the aperture slowly and build up the layers of the foam, ensuring that the void is filled. Take care not to over-fill the cavity.

Allow the foam to cure and using a sharp bladed instrument cut-off the expanded ‘cured’ foam.

Ensure that empty cans are disposed of by reference to local regulations.

Health and safety information
For detailed information on this product please refer to the relevant Material Safety Data Sheet.

Transportation
Classified as hazardous for road, rail, or sea transport. Not generally suitable for transport by air.
# Fire Rated Expanding Foam

## Storage conditions
Store dry and in a cool place [not above +35°C] and ensure sufficient ventilation.

## Product guarantee
Providing the product is installed in accordance with the requirements of the guidance document the fire performance characteristics of the product is guaranteed for a period of 10 years.

## Quality approval
Pyroplex® Limited has a Quality Management System that meets the requirements of ISO 9001, and is independently verified under Certificate FM10371.

## Technical support and guidance
Should you require any further information regarding this product please contact Pyroplex® Limited or visit our website, www.pyroplex.com

## Additional information
The information contained herein is based upon the present state of our knowledge. Recipients of our Pyroplex® products must take responsibility for observing existing laws and regulations.

Due to our policy of continuous improvement Pyroplex® Limited reserves the right to amend specifications without prior notice.

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<table>
<thead>
<tr>
<th>Application</th>
<th>Cavity gap sealing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire resistance period</td>
<td>120 minutes</td>
</tr>
<tr>
<td>Insulation/integrity</td>
<td>Insulation and integrity</td>
</tr>
<tr>
<td>Test standard</td>
<td>BS 476: Part 20: 1987</td>
</tr>
<tr>
<td></td>
<td>BS EN 1366-2: 2007</td>
</tr>
</tbody>
</table>

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Due to our policy of continuous improvement Pyroplex® Limited reserves the right to amend specifications without prior notice.
1. Field of application
Pyroplex® Fire Rated Expanding Foam is suitable for use in a wide range of construction and building fire stopping solutions, including:
• Cavity joints between doors and window frames
• Non-combustible services, including ducts and cable trays

2. Product features
• Fire Resistance of up to 4 hours dependent upon gap to depth ratio.
• Quick curing, can be cut, sawn or formed within 60 minutes of application.
• Easy to install, with up to 3m linear joint being fitted in under 10 minutes.
• Coloured pink to indicate it’s a fire resistant material.
• Can be painted and/or plastered without additional primers.
• Expands up to 4 times its volume, which can prove an economical solution to other alternatives.

3. Service penetrations
Suitable for use in solid cavities in walls, Pyroplex® Fire Rated Expanding Foam can be used in and around service penetrations, but as not as the sole criteria for fire protection purposes, therefore, should be used in conjunction with other fire protection products to maintain the fire resistance period of the aperture being sealed.

4. Pyroplex® test reports
A number of independent fire resistance tests have been carried out to confirm the suitability of the product and to demonstrate product compliance by utilising BS 476: Part 20: 1987 and BS EN 1366-4: 2000, and has a European Classification in accordance with BS EN 13501-2:2007.

Test Reports
- WF test report no. 147514
- WF test report no. 178414
- WF test report no. 166576C
- WF test report no. 179654A

5. Specification overview
Product characteristics and physical attributes:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Appearance - result</th>
</tr>
</thead>
<tbody>
<tr>
<td>750ml canister</td>
<td>Approximately 38 litres</td>
</tr>
<tr>
<td>Cell structure</td>
<td>Medium fine in appearance</td>
</tr>
<tr>
<td>Tack time</td>
<td>4 - 8 mins, dependent upon environmental conditions</td>
</tr>
<tr>
<td>Tool time (cutting)</td>
<td>10 - 14 mins, dependent upon environmental conditions</td>
</tr>
<tr>
<td>Full stability load bearing [20mm bead]</td>
<td>After approximately 12 hours</td>
</tr>
<tr>
<td>Female strength DIN 53430</td>
<td>18N/cm²</td>
</tr>
<tr>
<td>Elongation &amp; tension DIN 53430</td>
<td>30%</td>
</tr>
<tr>
<td>Shear strength DIN 53427</td>
<td>8N/cm²</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>0.04W/mK</td>
</tr>
<tr>
<td>Water absorption DIN 53333</td>
<td>0.3 vol. %</td>
</tr>
</tbody>
</table>

6. Structural applications
Pyroplex® Fire Rated Expanding Foam can be used in walls, of a solid construction.

Wall construction and fire resistance periods:

<table>
<thead>
<tr>
<th>Construction element</th>
<th>Fire resistance period [min]</th>
<th>Minimum thickness [mm]</th>
<th>Material types and minimum density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall</td>
<td>Up to 120 mins</td>
<td>200</td>
<td>Solid masonry work*, with a density no less than 650kg/M³</td>
</tr>
</tbody>
</table>

* Aerated concrete, lightweight ash blocks and/or solid brick construction.

7. Structural and penetrations conditions
The following dimensions must be observed during installation of the foam.

Maximum opening apertures:

<table>
<thead>
<tr>
<th>Condition types</th>
<th>Wall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum construction</td>
<td>200mm</td>
</tr>
<tr>
<td>Maximum opening size</td>
<td>40mm wide is the maximum aperture, depth to be a minimum of 200mm</td>
</tr>
</tbody>
</table>

8. Installation instructions
Preparation of the substrate:
Surfaces must be firm, clean, free of dust and loose particles. The cavity or voided area to be filled must be well moistened with water, this will aid installation adhesion to the substrate. It may be necessary to use a primer, prior to the application of the foam.

It is important to use the foam within a temperature controlled environment, the minimum temperature to which the foam can be installed should be no less than +20°C.
If the temperature is below +20°C the foam may show signs of slumping and irregular expansion.

Cans should not be left in an over-heated environment, temperatures above +50°C or exposed to direct sunlight.

Prior to application, ensure that the surrounding area is protected, in particular when using the foam in retrofit applications. It may also be necessary to mask and protect the surrounding area of the cavity, particularly in areas where the compartment may be decorated or furnished.

Shake the can for two minutes, until the foam inside becomes liquid. This is essential to ensure the performance of the product. Then attach the adapter or gun to the canister.

Fill the cavity from the base of the aperture slowly and build up the layers of the foam, ensuring that the void is filled. Take care not to over-fill the cavity.

Allow the foam to cure and using a sharp bladed instrument cut-off the expanded ‘cured’ foam.

Ensure that empty cans are disposed with reference to local regulations.

9. Storage conditions

Pyroplex® Fire Rated Expanding Foam can be stored for nine months at +23°C when stored upright, exposure to higher temperatures will limit the shelf life further.

Canisters must be stored upright.

10. Material safety data sheets

For detailed information on this product please refer to the relevant Material Safety Data Sheet.

11. Maintenance and installation records

Since the product is not subject to routine and replacement programmes, Pyroplex® recommend that all firestopping materials are checked on a regular basis to ensure that the product remains integral. Replace and fit any damaged components to reinstate the fire resistance.

All Pyroplex® firestopping components have been manufactured in accordance with our ISO 9001 accreditation FM10371 applies and are subject to routine factory production controls, including independent routine fire tests.

12. Product guarantee

Providing the product is installed in accordance with the requirements of the guidance document the fire performance characteristics of the product is guaranteed for a period of 10 years.

13. Quality approval

Pyroplex® Limited has a Quality Management System that meets the requirements of ISO 9001, and is independently verified by BSI Management Systems under Certificate Number FM10371.
Fire Rated Expanding Foam  

Material Data Sheet

1. Field of application
Pyroplex® FireRated Expanding Foam is suitable for use in a wide range of construction and building fire stopping solutions, including:
- Cavity joints between doors and window frames
- Non-combustible services, including ducts and cable trays

2. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS No.</th>
<th>Contents [class]</th>
<th>Health [R no.]</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenyl Methane - 4, 4'-Di-Isocyanate</td>
<td>101-68-8</td>
<td>5-10%</td>
<td>Xn</td>
<td>20.36/37/38</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isobutane</td>
<td>75-28-5</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>106-97-8</td>
<td>1.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimethyl Ether</td>
<td>115-10-6</td>
<td>5-10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Hazardous identification
Extremely flammable. Irritating to eyes, respiratory system and skin, when used in a confined environment. May cause sensitisation by inhalation and skin contact.

4. First aid measures

**General note:** Effects may be delayed. Keep affected person under observation.
**Inhalation:** Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention.
**Ingestion:** DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUID! Seek medical attention.
**Skin:** This product bonds to skin extremely well. Carefully remove the cured product by physical means, soften the remaining material with moisturiser and allow to degrade by natural means.
**Eyes:** Promptly wash eyes with plenty of water while lifting the eyelids. Get medical attention immediately. Continue to rinse.

5. Fire fighting measures

**Extinguishing media:** Powder, foam or CO2. Larger fires: Water spray, fog or mist.
**Special fire fighting procedures:** Use water to keep fire-exposed containers cool and disperse vapours. Move container from fire area if it can be done without risk. Keep run-off water out of the sewers and water sources. Dike for water control. If risk of water pollution occurs, notify appropriate authorities. Use pressurised air mask if substance is involved in a fire.

6. Accidental release hazards

**Spill clean up methods:** Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.
**Ventilation:** Provide ventilation and confine spill. Do not allow run-off to sewer or touch spilled material. Shovel into dry containers, cover and move. Flush the area with water.

7. Handling and storage

**Usage precautions:** Do not use in confined spaces without adequate ventilation and/or respirator. Risk of vapour concentration on the floor and in low-lying areas. Keep away from heat, sparks and open flames. Avoid spilling, and skin and eye contact. Do not use contact lenses.

**Storage precautions:** Store at moderate temperatures in dry, well-ventilated area. Keep away from heat, sparks and open flames.

**Storage criteria:** Misc. hazardous material storage. Flammable compressed gas storage.

8. Exposure controls and personal protection

**Ingredient comments:** OES = Occupational Exposure Standard. MEI = Maximum Exposure Limit. Exposure limits for isocyanates are quoted as NCO.

**Protective equipment:** Glasses, gloves, and ventilation.
**Ventilation:** Provide adequate general and local exhaust ventilation.

**Respirators:** Respiratory protection may be required.

**Protective gloves:** Use protective gloves made of: Rubber, neoprene or PVC.

**Eye protection:** Wear splash proof goggles to prevent any possibility of eye contact. Contact lenses should not be worn when working with this chemical.

**Other protection:** Use engineering controls to reduce air contamination to permissible exposure level. Wear appropriate clothing to prevent any possibility of skin contact.

**Hygienic work routines:** Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily if contamination is reasonably probable.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance:</th>
<th>Aerosol or Viscous. Liquid or solid Foam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>Pink</td>
</tr>
<tr>
<td>Physical data comments:</td>
<td>Information given concerns the major ingredient</td>
</tr>
<tr>
<td>Solubility description:</td>
<td>Hardens in contact with water. Slightly soluble in organic solvents [most]</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point [°C]:</td>
<td>&lt; +20</td>
</tr>
<tr>
<td>Flash point method:</td>
<td>OC [Open Cup]</td>
</tr>
</tbody>
</table>
10. Stability and reactivity


Materials to avoid: No incompatible groups noted.


11. Toxio logical information

Health warnings: This chemical can be hazardous when inhaled and/or touched.

Inhalation: Prolonged inhalation of high concentration may damage respiratory system. Pulmonary sensitiser. Recognised allergen.

Skin contact: May cause sensitisation by skin contact.

Eye contact: Irritating to eyes.

Eyes, nose and mouth: May cause temporary blindness and severe eye damage.

Respiratory system: Repeated exposure may cause chronic upper respiratory irritation.

Route of entry: Inhalation, ingestion, skin and/or eye contact.

Target of organs: Eyes. Respiratory system, lungs. Skin.

Medical symptoms: Eye and Mucous Membranes: Irritation of eyes and mucous membranes.

Respiratory system: General respiratory distress, unproductive cough.

Skin: Skin irritation, brown skin stains.

Medical considerations: Chronic respiratory and obstructive airway diseases. Skin disorders and allergies. Allergic reactions may develop after inhalation of low concentrations, also several hours after exposure.

12. Ecological information

Environmental hazards: Little danger to the environment.

13. Disposal considerations

Dispose of in accordance with Local Authority requirements.

16. Additional information

The information contained herein is based upon the present state of our knowledge. Recipients of our Pyroplex® products must take responsibility for observing existing laws and regulations.

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