

CERTIFICATE No. 05/0234

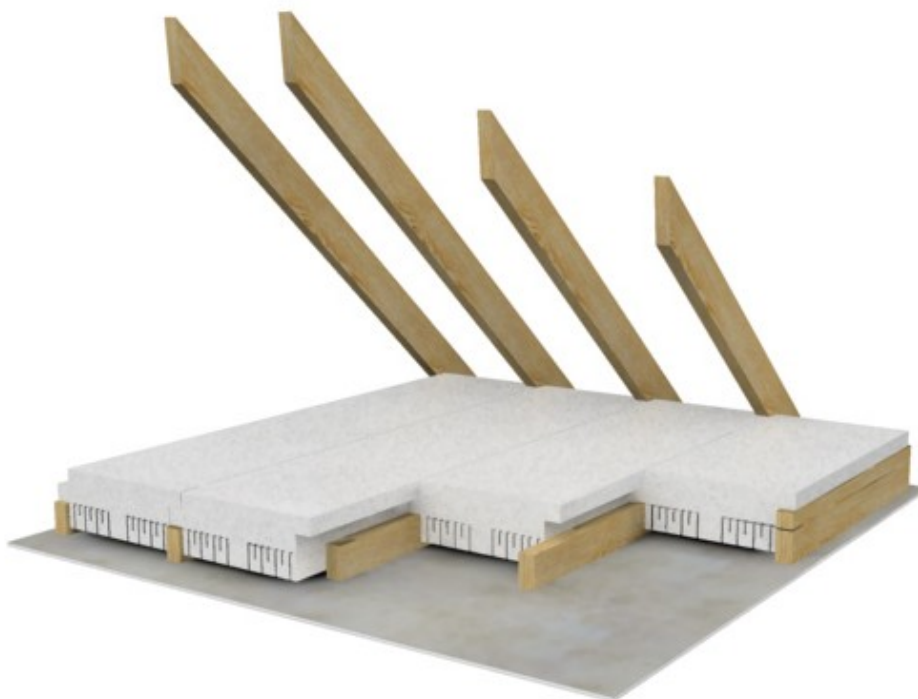
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Wolfpack Attic Insulating Flooring

Isolation de murs
Wärmedämmung

The **Irish Agrément Board** is designated by Government to issue European Technical Approvals. Irish Agrément Board Certificates establish proof that the certified products are '**proper materials**' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2002**.

The **Irish Agrément Board** operates in association with the **National Standards Authority of Ireland (NSAI)** as the National Member of UEAtc.



PRODUCT DESCRIPTION:

This Certificate relates to Wolfpack attic insulation, manufactured in accordance with IS EN 13163:2001 *Thermal insulation products for buildings – Factory made products of expanded polystyrene (EPS) – Specification*.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2002.

USE:

The system consists of Wolfpack variable width insulation panels, friction fitted between the joists to create an attic insulation flooring system. The panels are manufactured from expanded polystyrene.

MANUFACTURE AND MARKETING:

These products are manufactured and marketed by:

Airpacks Ltd.,
Kilnaleck,
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1.1 ASSESSMENT

In the opinion of the Irish Agrément Board (IAB), Wolfpack, if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 - 2002 as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS 1997 to 2002 REQUIREMENT:

Part D – Materials and Workmanship

D3 – Wolfpack as certified in this Irish Agrément Certificate is comprised of proper materials fit for their intended use (See Part 4 of this Certificate).

D1 – Wolfpack as certified in this Certificate, can meet the requirements of the building regulations for workmanship.

Part B – Fire Safety

B3 – Internal Fire Spread (Structure)

Wolfpack carries a Class 1 rating to BS 476:Part 7:1997, and will not require the installation of cavity barriers.

Part C – Site Preparation and Resistance to Moisture

C4 – Resistance to Weather and Ground Moisture

Wolfpack when installed in compliance with the conditions indicated in Part 2 of this Certificate will not promote the passage of moisture and will minimise the risk of surface of interstitial condensation.

Part F – Ventilation

F2 – Condensation in Roofs

Wolfpack meets the regulation requirements when designed and installed in accordance with Section 2.4 and Part 3 of this Certificate.

Part L – Conservation of Fuel and Energy

L1 - Conservation of fuel and energy

Based on the measured thermal conductivity of Wolfpack referred to in this Certificate, the current 'U Value' requirements can be achieved (see Section 4.4 of this Certificate).

2.1 PRODUCT DESCRIPTION

This Certificate relates to the Wolfpack insulation system for attic insulation flooring. Wolfpack variable width panels are friction fitted between joists where they will then widen to fit tightly. Sheets can be cut to size easily with a fine tooth saw or hot wire cutter to accommodate services.

Length	1200 mm
Depth	180, 190, 205, 215, 225, 238 mm
Density	SD: 15 kg/m ³ HD: 20 kg/m ³ EHD: 25 kg/m ³ UHD: 30 kg/m ³ Grey SD: 15.9 kg/m ³ Grey HD: 20 kg/m ³

Table 1: Product Range

2.2 MANUFACTURE

Wolfpack is manufactured from expanded polystyrene, and contains a flame retardant additive (FRA). Wolfpack insulation boards are manufactured using no HCFC or CFC gases and have zero Ozone Depletion Potential.

2.2.1 Quality Control

Quality control checks include board dimensions, density, dimensional stability, compressive strength and thermal conductivity.

2.3 DELIVERY, STORAGE AND MARKING

Every pack shows the manufacturer's name, IAB identification mark and IAB Certificate number.

Boards should be protected in transit and in storage from damage caused by ropes and tie straps. Boards should be protected from prolonged exposure to UV light and should be stored under cover or protected with polyethylene. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar, and timbers newly treated with creosote etc. The boards must not be exposed to a naked flame or other ignition sources.

2.4 INSTALLATION

2.4.1 General

A proper assessment should be carried out to ensure the roofing structure is capable of sustaining loading due to storage in addition to loads that it might reasonably be expected to endure. If any doubt exists over the suitability of the roof/ceiling structure to sustain these loads, then advice should be sought from a chartered engineer with relevant experience. Normal trussed roofs are not, in general, capable of safely sustaining significant amounts of extra loading.

Installation must be in accordance with the manufacturer's instructions. Wolfpack insulation boards are light to handle and can be easily cut or shaped. The boards are firm enough to be walked on while maintaining their depth. The product requires no protective clothing to be worn during installation.

2.4.2 Procedure

1. An effective seal should be provided around the loft access hatch.
2. When starting boards are being laid, a batten should be nailed to the top of the ceiling joist to support the sheet.
3. Wolfpack should be squeezed between the joists where it will widen to fit tightly. This is to ensure that there are no spaces. The sheets can be cut to size easily with a fine tooth saw or hot wire cutter to accommodate services.

4. Each sheet is shiplapped on the upper layer to minimise cold bridging.
5. All pipework on the cold side of the insulation should be well insulated.
6. Along the eaves it is recommended that fibreglass is placed into areas which are inaccessible for accurate fitting of Wolfpack. Care should be taken to ensure eaves ventilation remains in place.
7. The area under the cistern should be left uninsulated but its top and sides should be insulated.
8. Electrical cables running within the EPS must be carried in a conduit, e.g. rigid PVC, unless nylon coated cables are used, as outlined in the national rule of the Electro Technical Council of Ireland. Cables should generally be installed so that they can be located above the insulation.
9. Due to the substantial fire risk due to high temperatures that can be caused by high current values produced by extra-low voltage lighting, it is recommended that only surface mounted extra-low voltage lighting be used.
10. After installation, sheets of plywood can be laid across to provide a finish to the floor. All covering sheets should be laid in accordance with relevant standards.

3.1 GENERAL

Wolfpack attic insulation system, when installed in accordance with this Certificate, is effective in reducing the U-value (thermal transmittance) of new and existing attic floor constructions.

3.2 FLOOR LOADING

The design loadings for self contained single family dwelling units as defined in BS 6399: *Part 1: 1996 Loading for buildings – code of practice for dead and imposed loads*, are

- Uniformly distributed load – 1.5 kN/m²
- Concentrated load 1.4 kN

Wolfpack covered with plywood, OSB or similar material can support these design loadings without undue deflection.

3.3 UNDERFLOOR SERVICES

The maximum continuous working temperature of expanded polystyrene is 80°C. Where underfloor heating systems are to be used, installers should ensure that this temperature is not exceeded.

4.1 BEHAVIOUR IN FIRE

Combustibility – Although Wolfpack is a product of limited combustibility, when used in the context of this Certificate the increase in fire load in the building consequent to its use, is negligible.

Wolfpack is manufactured without the use of CFC's and HCFC's, there is no release of such gas on burning.

4.2 STRENGTH

Wolfpack, when installed in accordance with the manufacturer's instructions and this Certificate, will resist the loads likely to be met during installation and in service.

4.3 RESISTANCE TO MOISTURE

Wolfpack will not allow moisture to cross the floor construction provided it is installed in accordance with this Certificate (see section 2.4).

4.4 CONDENSATION RISK

Wolfpack has a vapour resistance 145MN/gm. The Certificate holder should be contacted for the purpose of calculating a project specific condensation risk analysis.

Capillary Action – The closed cell structure does not allow water uptake by capillary action.

4.5 THERMAL INSULATION

The aged/design thermal conductivity ' λ ' value of Wolfpack when measured in accordance with IS EN 12667:2000 *Thermal performance of building materials and products – Determination of thermal resistance by means of guarded hot plate and heat flow meters method – Products of high and medium thermal resistance*, is shown in Table 2.

Density of Insulation	Conductivity (W/mK) of Insulation	Thickness (mm) of Insulation
SD	0.037	238 mm
HD	0.034	225 mm
EHD	0.033	215 mm
UHD	0.032	205 mm
Grey SD	0.030	190 mm
Grey HD	0.028	180 mm

Table 2: Insulation required to achieve a U-value of 0.16 W/m²K

4.6 DURABILITY

Wolfpack boards are rot proof and durable. As attic floor insulation, Wolfpack is judged to be stable and will remain effective as an insulation system for the life of the building, so long as it is installed in accordance with this Certificate.

4.7 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

- Density
- Water vapour transmission
- Long term water absorption
- Dimensional accuracy
- Compressive and cross breaking strength
- Dimensional stability
- Thermal conductivity
- Efficiency of the construction process

4.8 OTHER INVESTIGATIONS

- (i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed. Wolfpack does not contain CFC or HCFC gas.
- (ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) Site visits were conducted to assess the practicability of installation and the history of performance in use of the product.
- (iv) A condensation risk analysis was performed.

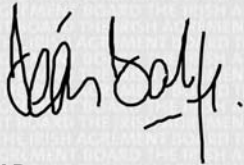
- 5.1** National Standards Authority of Ireland ("NSAI") following consultation with the Irish Agrément Board ("IAB") has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:
- (a) the specification of the product is unchanged.
 - (b) the Building Regulations 1997 to 2002 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
 - (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
 - (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
 - (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
 - (f) the registration and/or surveillance fees due to IAB are paid.
- 5.2** The IAB mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the IAB mark and certification number and must remove them from the products already marked.
- 5.3** In granting Certification, the NSAI makes no representation as to;
- (a) the absence or presence of patent rights subsisting in the product/process; or
 - (b) the legal right of the Certificate holder to market, install or maintain the product/process; or
 - (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.
- 5.4** This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.
- 5.5** Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act. 1989, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.
- 5.6** The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.
- 5.7** Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, Manufacturer's instructions, or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certification.

The Irish Agrément Board

This Certificate No. **05/0234** is accordingly granted by the NSAI to **Airpacks Ltd.** on behalf of The Irish Agrément Board.

Date of Issue: **December 2005**

Signed



Manager, IAB

Readers may check that the status of this Certificate has not changed by contacting the Irish Agrément Board, NSAI, Glasnevin, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. www.n Sai.ie