



# ***Air-Reflect***

Reflect Aluminium Insulation

Maximise Performance

Minimise Costs

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***Airgreen***<sup>®</sup> INSULATION

## AIR-REFLECT AND HEAT TRANSFER

**Insulating means installing a barrier that stops radiation, conduction and convection. Air-Reflect acts on all these heat transfer methods and also reduces ambient humidity.**

### RADIATION

Thermal radiation = heat transfer in the form of electromagnetic waves radiated from hot surfaces. The more the radiation is reflected, the less heat transfer occurs. Air-Reflect's two faces made of 99% pure aluminium give it a reflecting power of 90%. Its inner components are designed to "absorb" residual heat transfer from radiation. In winter, the heat is retained inside. In summer, the sun's radiation is reflected toward the outside.

### CONDUCTION

Conduction = direct flow of heat through a material resulting from physical contact. The more insulating the components are, the less conduction occurs. Two air gaps between each film and the central foam separate the walls perfectly in order to reduce any thermal bridging.

### HYGROMETRY

Hygrometry = degree of humidity in the air. The more watertight the insulation is, the less humidity will be in the ambient air. When hygrometry is superior to 45%, humidity begins to penetrate the absorbent products, specifically mineral wools. Most of the time, the hygrometry level in homes varies between 55% and 80%, resulting in excessive heating in winter. Having no seams, Air-Reflect is completely waterproof. The result is a significant 15% to 20% reduction in humidity.

### CONVECTION

Convection = heat transfer through air currents. The stiller the air is, the less heat transfer occurs through convection. Air-Reflect is totally airtight and effectively seals out wind. Its internal composition (trapped dry air bubble film and layers of stabilised trapped dry air) considerably reduces convection.

## ENVIRONMENTALLY FRIENDLY

Air-Reflect is environmentally friendly and provides healthy and lasting comfort. Air-Reflect is stable, 100% rot-proof and totally hypoallergenic. There is no risk of crumbling material, so no airborne microparticles that may be harmful to the lungs and skin. It is a clean product that neither collects dust (antistatic), nor retains bacteria, odours or dirt. Being neutral, it does not attract rodents, birds or insects. Finally, Air-Reflect is particularly resistant to crushing (C.S.T.B. No. CPM/02-0009, 16th April 2002). Unlike standard fibre-based insulating products, Air-Reflect's insulating power remains constant over time. Its lifetime is almost infinite. Moreover, Air-Reflect is 100% recyclable.

# Technical Data

## Technical Performance

- Thermal Conductivity : Lambda 0.032 W/mk
- Thermal Resistance : Internal Core 0.30mk/w
- With 2 Air Layers : 1.48m<sup>2</sup>k/w (Horizontal heat flow) 1.25m<sup>2</sup>k/w (Vertical heat flow)
- Fire Resistance Classification: Euroclass C
- Area of coverage: 15m<sup>2</sup>
- Weight of roll: 9kg
- Thickness: 11mm
- Impermeable: 100% air/watertight (joined)
- Insulation Performance: Constant over time in both summer and winter
- Sound Reduction: 54db Walls 23db Roofs 24db Floors
- Mechanical Resistance: Compression 300Kg/m<sup>2</sup>

## Area of use

- Walls: Internal /external /solid /cavity /steel / timber
- Floors: solid/ suspended floors/underfloor heating
- Roofs: Flat & pitched roof (over & under rafters)
- Residential & non-residential: Homes, Hotels, Outbuildings etc
- Industry: Modular buildings, Timber frame, Steel frame etc
- Agriculture: Livestock & Food storage buildings etc
- Automotive industry

## Features

- Seals as vapour barrier
- Air-tightness barrier
- Reflective Radiant barrier
- Thermal insulation
- 100% rot proof: no condensation under standard installation conditions
- Sustainable
- 100% Recyclable

## Build up

- **A** 99% pure aluminium film, 30 microns. Radiation reflecting
- power of 90%. Completely air and watertight.
- **B** Fire-resistant dry air-bubble polyethylene film, 150 microns.
- No convection, low conduction.
- **C** Fire-resistant closed-cell polyethylene foam film of 25 kg/m<sup>3</sup> surface density, 3mm thick, insulated between two air gaps. Consequently, conduction is extremely low.
- **D** Layers of stabilised trapped dry air reduce thermal bridging, thus preventing condensation.
- **E** Self-adhesive tape

