

Air-Reflect



**THE REFLECTIVE ALUMINIUM
INSULATION**



Minimise Costs Maximise Savings

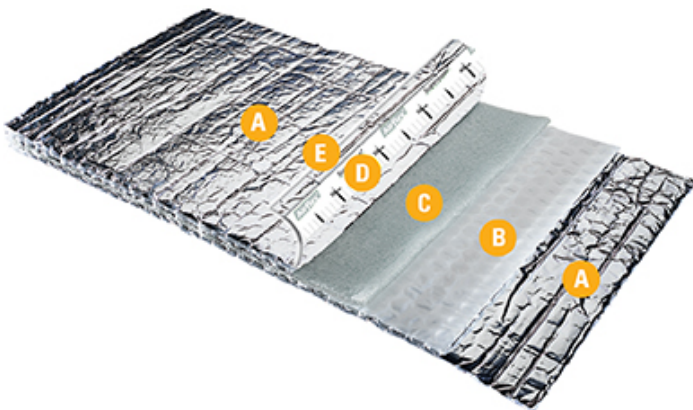
Airgreen[®]

Air-Reflect

Airgreen works daily with professionals in the construction industry via numerous exchanges to advise on how, where and when is the best solution for our products. These exchanges and Airgreen's strong will to innovate and provide extensive knowledge of our products makes us the leading reflective insulation specialist.

Thanks to this our technology, the Air-Reflect Thermal Barrier is truly "ready-to-install". The installation process is simpler, more precise and quicker, meaning less waste, higher quality work and better performance, guaranteed! These are all advantages that will come into play from purchase to installation to use.

And since serving building trade professionals a philosophy all on its own, Airgreen Insulation puts all information necessary for your daily work at your disposal. You can find our application recommendations in this "Practical guide for specialists" and on our website www.airgreeninsulation.com. What's more, our technicians are at your service to answer your questions.



Happy reading

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Energy savings in Summer and winter

Air-Reflect

- 10mm semi-rigid reflective Bubble foil insulation with built in vapour barrier
- Boosts insulation performance
- Reflects radiant heat
- Seals as a vapour barrier and ensures airtightness
- Non-flammable
- Clean, hygienic and simple to install
- Roll size - 1.2m x 12.5m = 15m²
- Ideal for the following building types:
 - Residential
 - Commercial
 - Agricultural
 - Hot & Cold Climate
- Flat & Pitched Roof (over & under rafters)
 - Timber Frame Walls
 - Solid and Cavity Walls
 - Internal & External
- Solid & Suspended Floors
- Floors with Underfloor Heating

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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 97%. 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.

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.

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.

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.

MULTIPLE APPLICATIONS

Air-Reflect

Air-Reflect is currently used in numerous sectors:

- Residential and non-residential (single-family homes and outbuildings, buildings, community halls, recreational facilities, etc.)
- Industry (factories, warehouses, laboratories, modular buildings, etc.)
- Military (barracks, field hospitals, etc.)
- Agriculture (livestock and food storage buildings, wine storehouses, etc.)
- Car industry (horse-boxes, campers, caravans, car boots, etc.)
- Ship building (sailboats, houseboats, barges, etc.)
- Aeronautics (containers, etc.)

Efficient, safe, reliable: all the Reflective Thermal Barrier's guarantees are

concentrated in Air-Reflect. Its performance corresponds to what specialists are looking for: a nonflammable, impermeable, healthy, environmentally friendly product with high reflecting power.

This is why specialists prefer the Air-Reflect Thermal Barrier for insulating private and public architectural heritage. Its lifetime is almost infinite and its reflecting power remains constant over time under standard installation conditions.

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DO'S

- To install Air-Reflect on wood, you must use 12/14mm staples. We recommend you to use 3 rows of staples (galvanised or preferably stainless) and spaced 200mm apart.
- To install on metal, use double-sided adhesive or tec-screws
- You may use nails and screws to attach Air-Reflect to a batten.
- You can use adhesive to fix Air-Reflect in certain types of installations. For more information on the type of adhesive or the installation, please contact us.
- There must always be an air gap between Air-Reflect and plasterboard
- Air-Reflect must be ventilated on the outside like any other insulating product (walls, roofing and claddings).
- Since aluminium is a conductor, Air-Reflect must be earthed
- For buildings at an altitude above 900m, see regulations specific to high altitudes.
- Airgreen products must be stored in a sheltered, weather-protected place.
- Specific installation instructions:
 - When finishing the plaster cladding or other work that generates humidity, a forced ventilation system must be installed and run for several weeks.
 - Installing Air-Reflect outside (on rafters or in cladding) requires appropriate eye protection (sunglasses).

You must pay careful attention to and consider all our general recommendations before you start any installation. In the following pages, you will find descriptions of different types of installations (roofing, roofing frame, wall and floor) along with specific recommendations. Our 10 year warranty only applies if all of our recommendations are strictly adhered to.

Technical Performance

- Thermal Conductivity : Lambda 0.032 W/mk
- Thermal Resistance : Internal Core 0.30mk/w
- With 2 Air Layers : 1.48m²k/w (Horizontal heat flow) 1.25m²k/w (Vertical heat flow)
- Fire Resistance Classification: Euroclass C
- Area of coverage: 15m²
- 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/m²

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 97%. 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/m³ 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

- 1 Take care to protect Air-Reflect against on-site damage during installation, just like any other product that can be easily damaged by rough handling, etc.
- 2 You can install Air-Reflect horizontally or vertically by joining the panels on a rafter and overlap the upper and lower panels
- 3 It is advisable to staple Air-Reflect on rafters to hold it in place prior to fixing battens.
Then it can act as a sarking and underslaters felt. See specific recommendations for installation at the bottom of the roof slope
- 4 Once Air-Reflect is installed, place the counter battens and battens in order to allow a minimum 25mm air ventilation gap.
- 5 Be sure to respect roof ventilation standards. Building regulations.
- 6 When installing Air-Reflect under roofing, do not forget air inlets and outlets in the close boarded, the roof boarding underslaters felt, or any other covering, that will be installed on the rafters.
- 7 You must allow a safety gap around chimney flues: 200mm minimum.
- 8 At the ridge, join the Air-Reflect together with an overlap of about 200mm on the opposite side
- 9 All the joints between the cut panels (where product interior is exposed), must be covered exclusively with 100mm reflective adhesive tape.
- 10 For installation in buildings at an altitude above 900m, see current regulations, especially with regard to ventilated double roofs.
Before beginning any installation, please refer to the Airgreen Technical Department.

Internal Roof insulation

Advantages

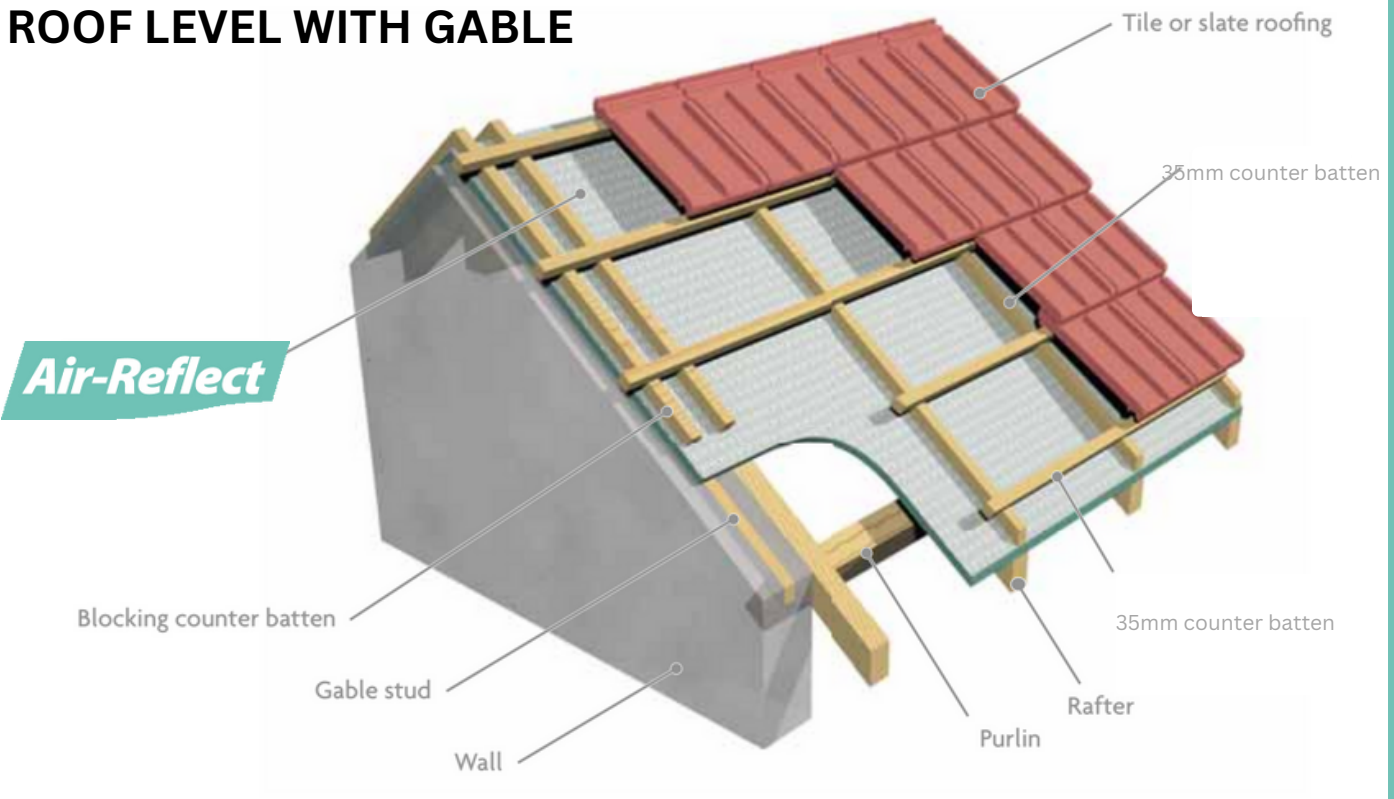
- Quick and easy to install, even when working in tight spaces
- Airtight membrane
- Does not shrink or sag
- Eliminates cold bridging
- Keeps heat inside the building and cold out
- Minimum thickness with maximum insulating effect
- Boosts U-Value
- Vapour barrier
- No roof rot
- Durable

External Roof insulation and membrane

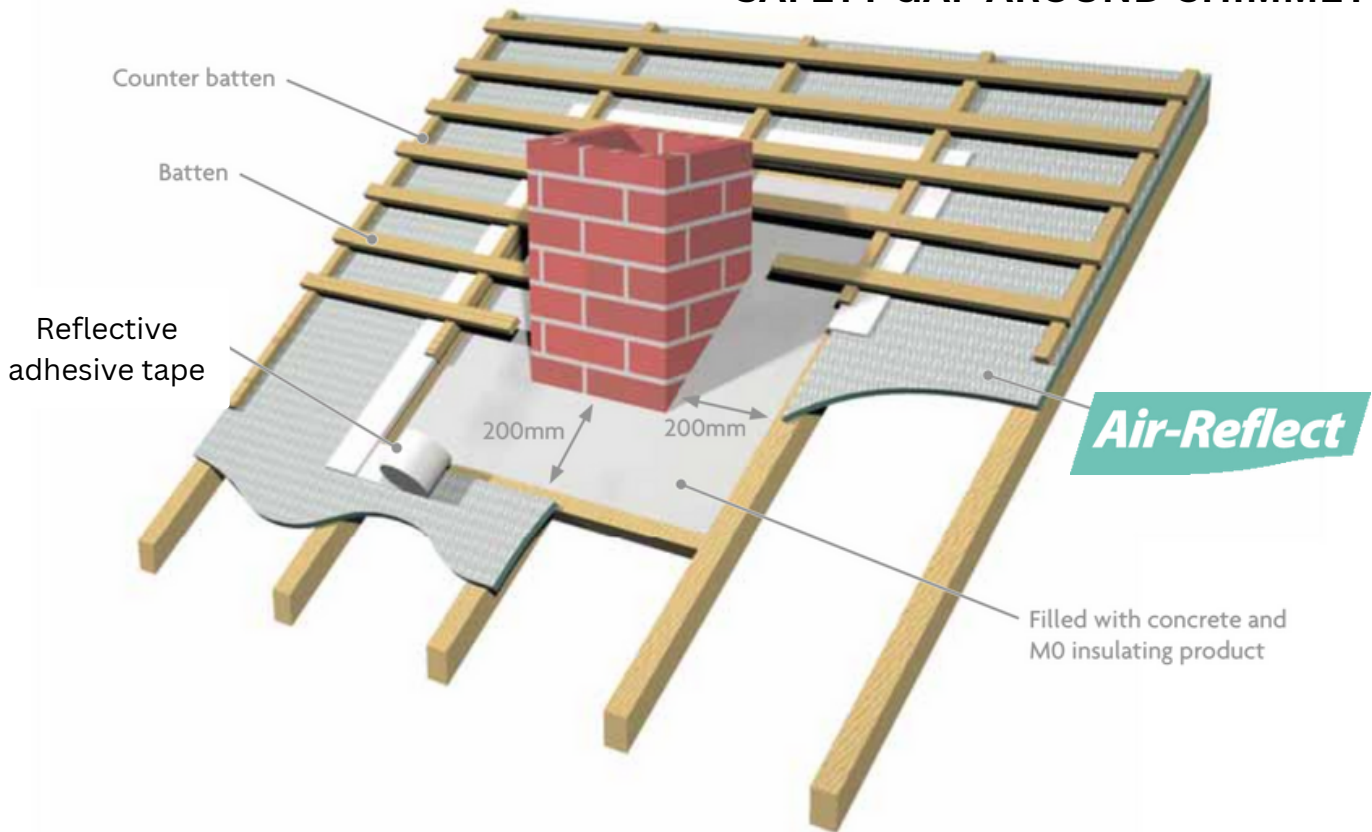
Advantages

- Quick and easy to install
- Does not shrink or sag
- Eliminates cold bridging
- Keeps heat inside the building and cold out
- Minimum thickness with maximum insulating effect
- Boosts U-Value
- Roof underlay, Insulation and Vapour barrier in a single application
- No roof rot
- Durable
- Waterproof

ROOF LEVEL WITH GABLE

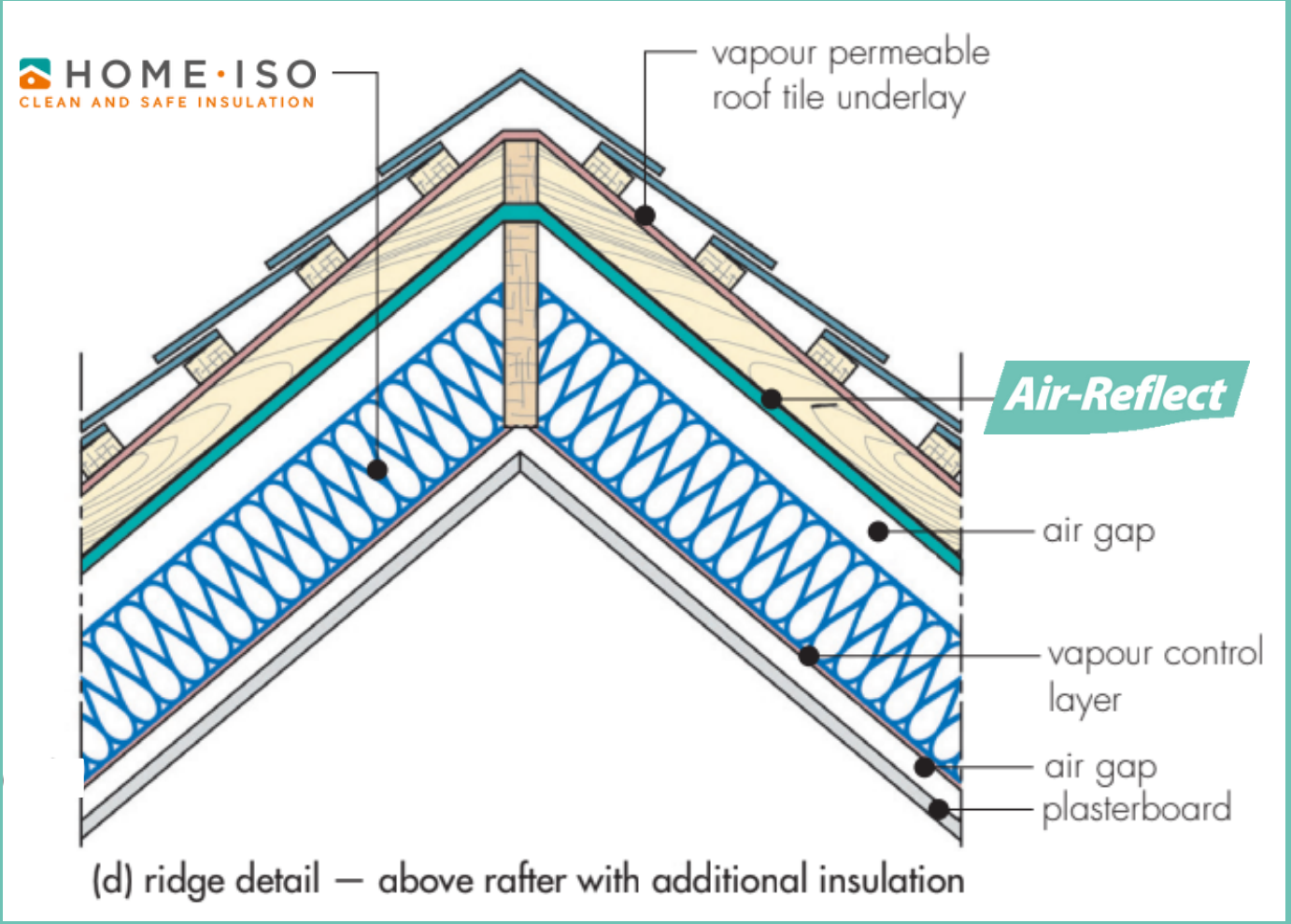
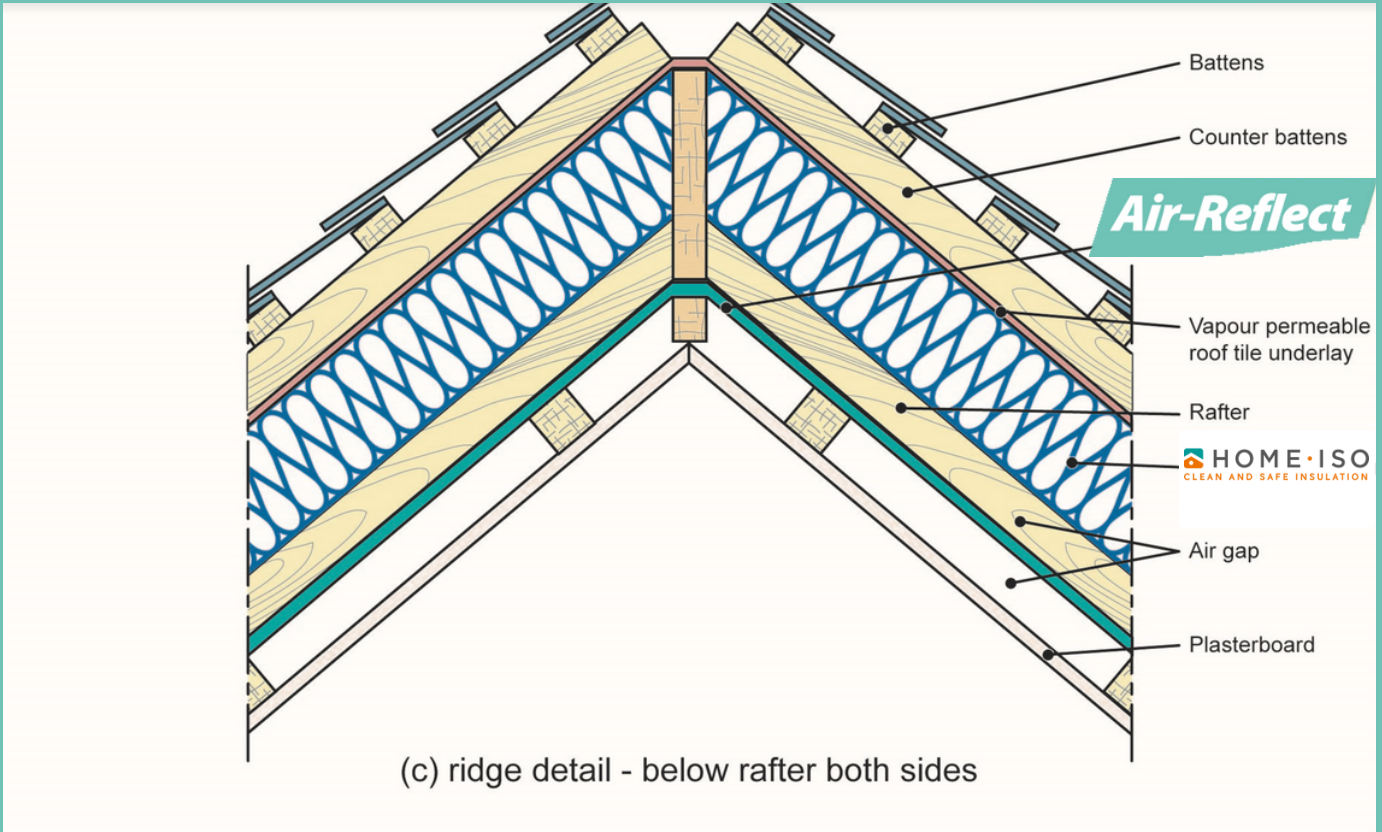


SAFETY GAP AROUND CHIMNEY



Roofing Installation

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Internal wall Insulation

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Advantages

- Quick and easy to install
- Does not shrink or sag
- Allows the possibility of insulating the walls from the inside
- Keeps heat inside the building and cold out
- Minimum thickness with maximum insulating effect
- Boosts U-Value
- Airtight membrane
- Insulation and Vapour barrier in a single application
- Durable
- Air-Reflect adapts to all shapes and surfaces
- The air space created on the inside ensures easy installation of heating and water pipes and electrical fixings

External wall Insulation

Advantages

- Quick and easy to install
- Does not shrink or sag
- Allows the possibility of insulating the walls from the outside
- Eliminates cold bridging
- Keeps heat inside the building and cold out
- Minimum thickness with maximum insulating effect
- Boosts U-Value
- Insulation and Vapour barrier in a single application
- Durable
- Air-Reflect adapts to all shapes and surfaces

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Wall Installation

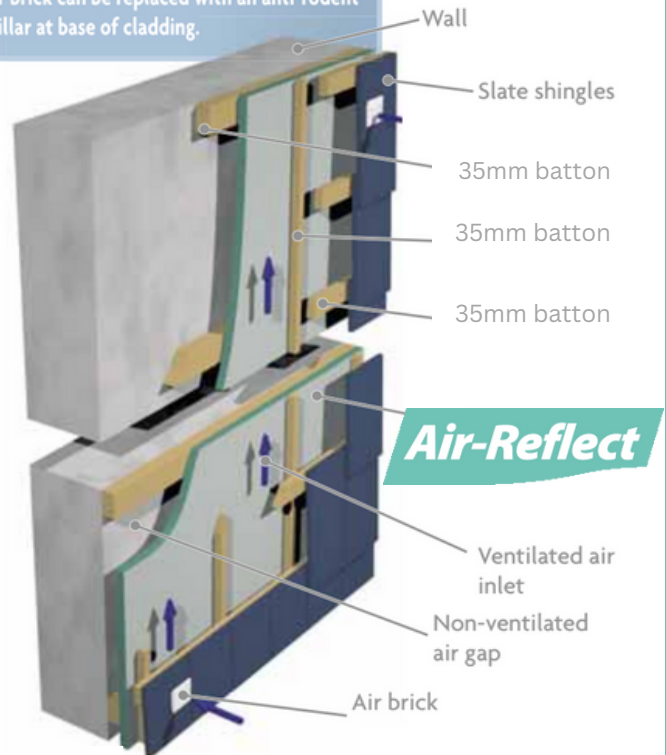
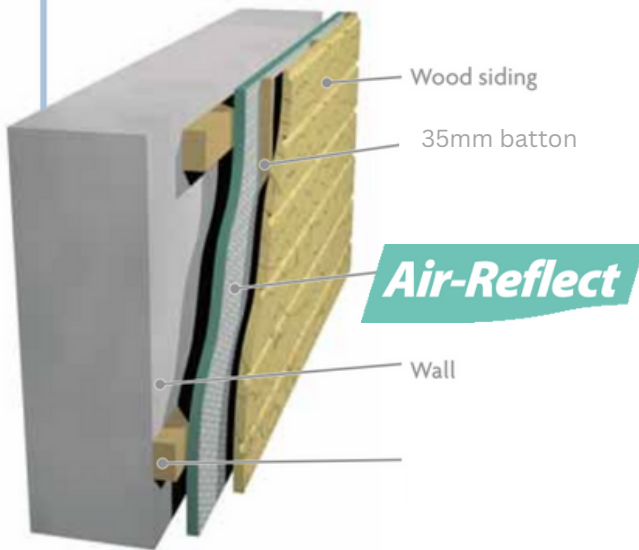
Air-Reflect

EXTERIOR INSTALLATION wall with slate cladding

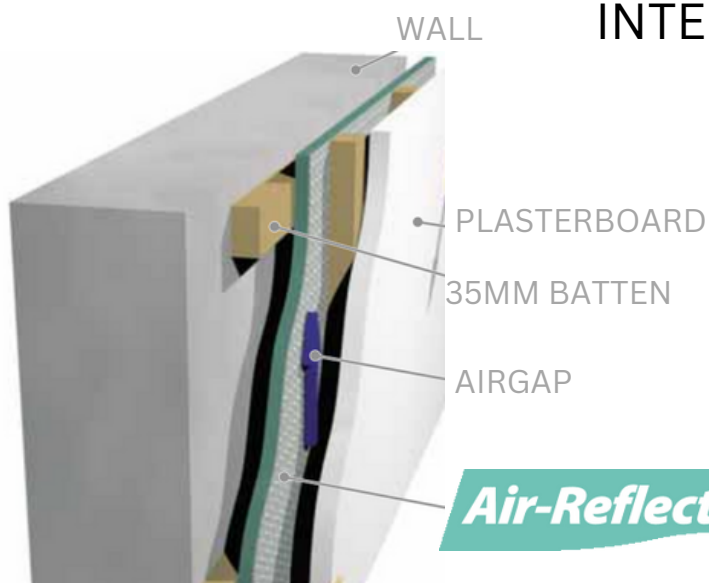
EXTERIOR INSTALLATION wall with wood cladding

Note

Lower air brick can be replaced with an anti-rodent corner pillar at base of cladding.



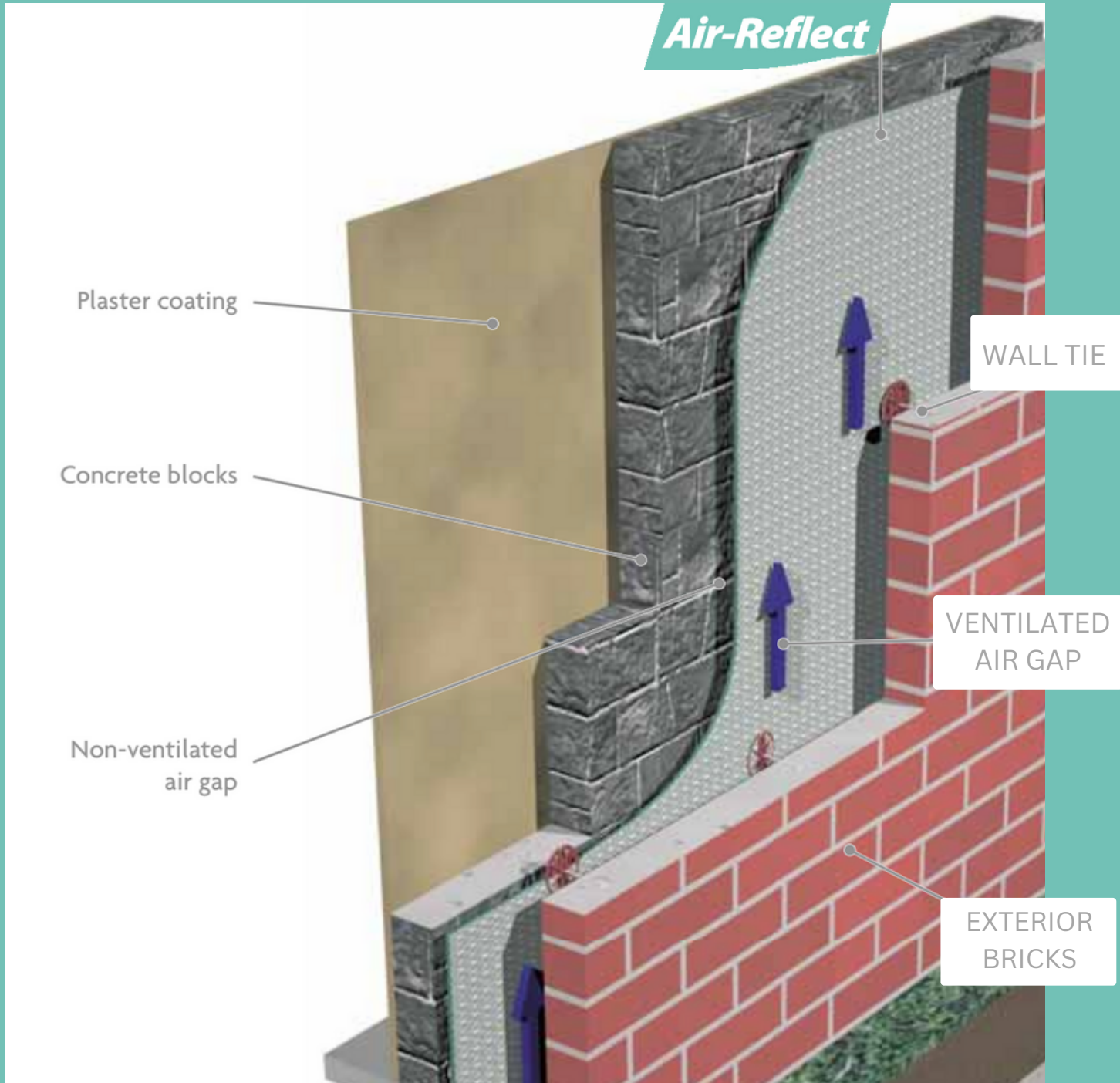
INTERIOR INSTALLATION



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Wall Installation

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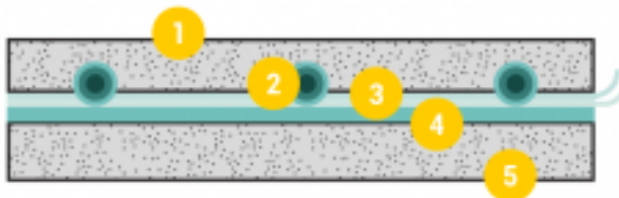
Floor Installation

Air-Reflect

Under Screed and Floorboards

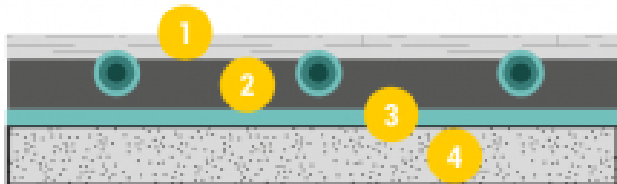
Advantages

- Quick and easy to install
- Under screed and under the floor as a heat distributor
- Minimum thickness with maximum insulating effect
- Air-Reflect adapts to all shapes and surfaces
- Boosts insulation and heating performance



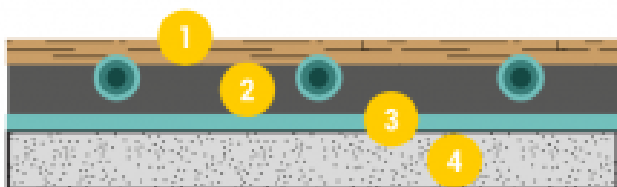
★ Do not install pipes under Airflex (screed could crack).

- 1 **Cement Screed (50-80mm)**
- 2 **Pipes**
- 3 **2 Polytherene type plastic DPM**
- 4 **Air-Reflect**
- 5 **Concrete Floor**



★ Check underfloor heating manufacturers guidelines for covering

- 1 **Concrete Finishing**
- 2 **Tray / Board and Pipes**
- 3 **Air-Reflect**
- 4 **Concrete Floor**



★ Check underfloor heating manufacturers guidelines for covering

- 1 **Floor Finishing**
- 2 **Tray / Board and Pipes**
- 3 **Air-Reflect**
- 4 **Concrete Floor**

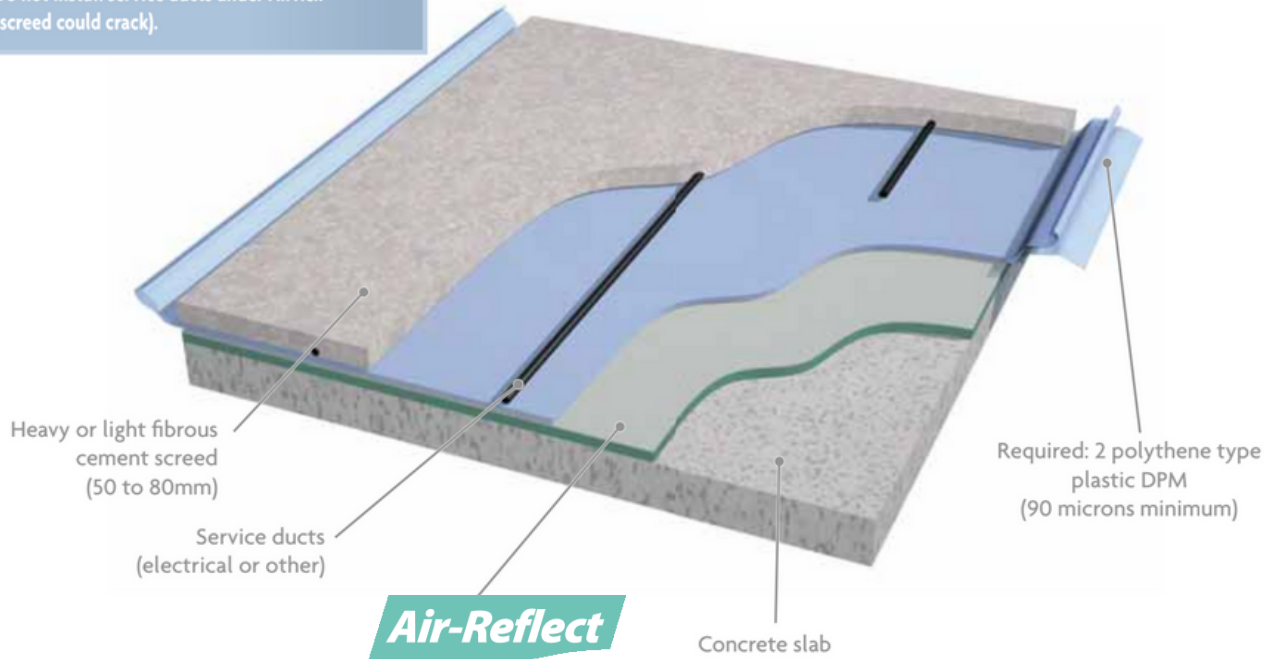
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Floor Installation *Air-Reflect*

FLOOR INSTALLATION UNDER SCREED with room for service ducts

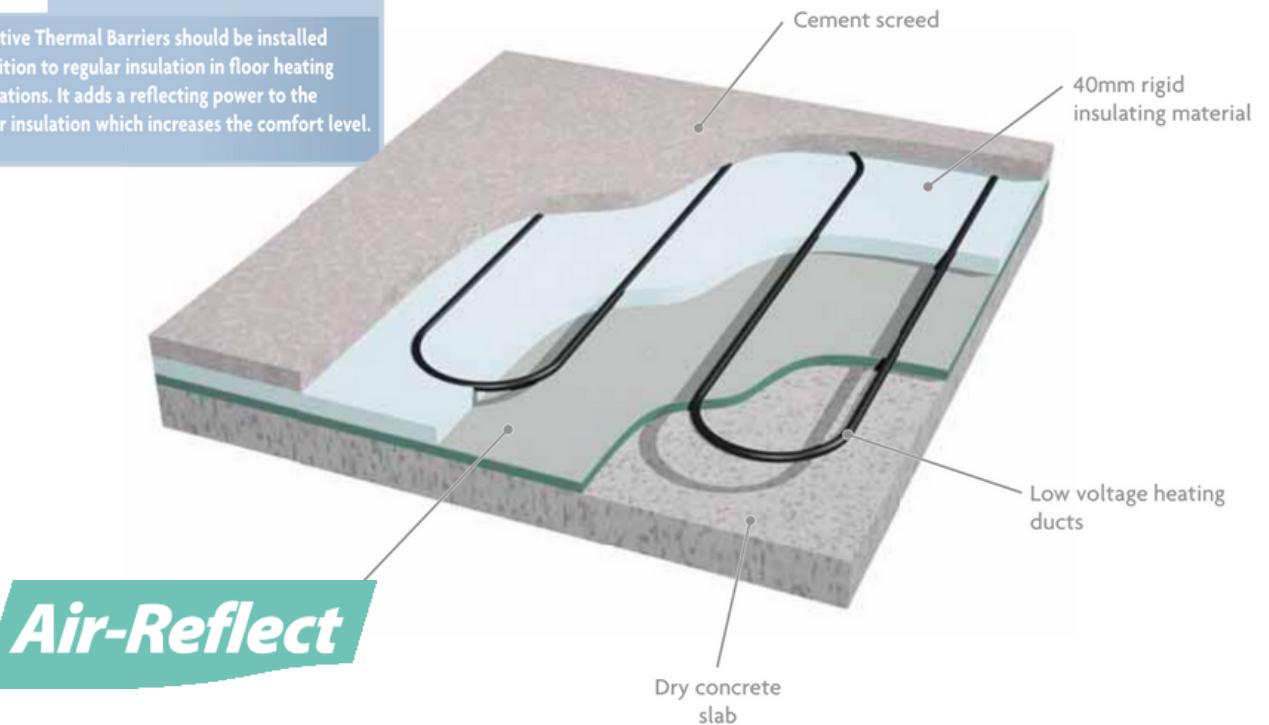
Note

Do not install service ducts under Airflex® (screed could crack).



Note

Reflective Thermal Barriers should be installed in addition to regular insulation in floor heating installations. It adds a reflecting power to the regular insulation which increases the comfort level.

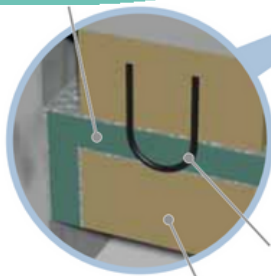


INSTALLATION UNDER HOLLOW OR CONCRETE SLAB FLOOR with plasterboard

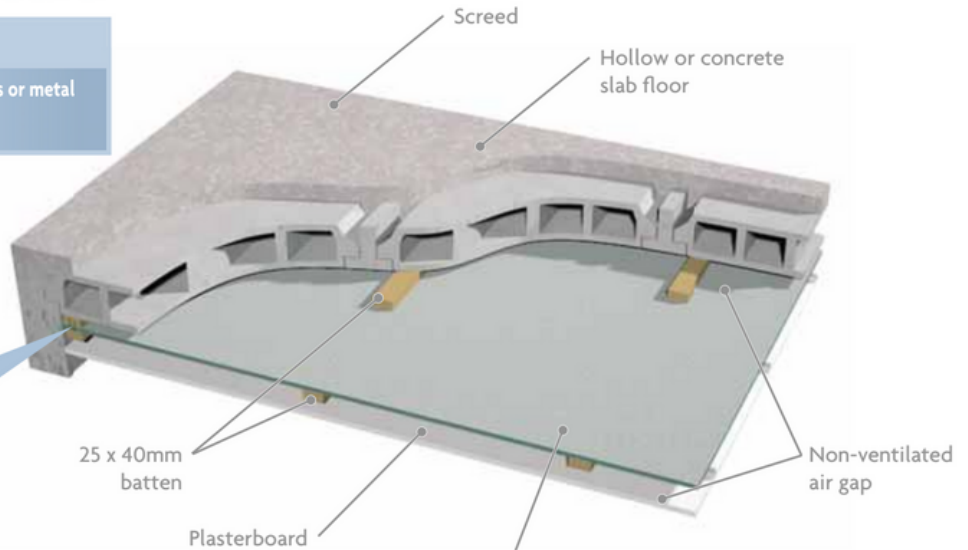
Note

Plasterboard can be installed on battens or metal frame (T-hangers and furring).

Air-Reflect



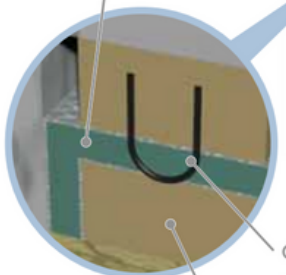
Galvanized or stainless steel 16mm staple
25 x 40mm batten



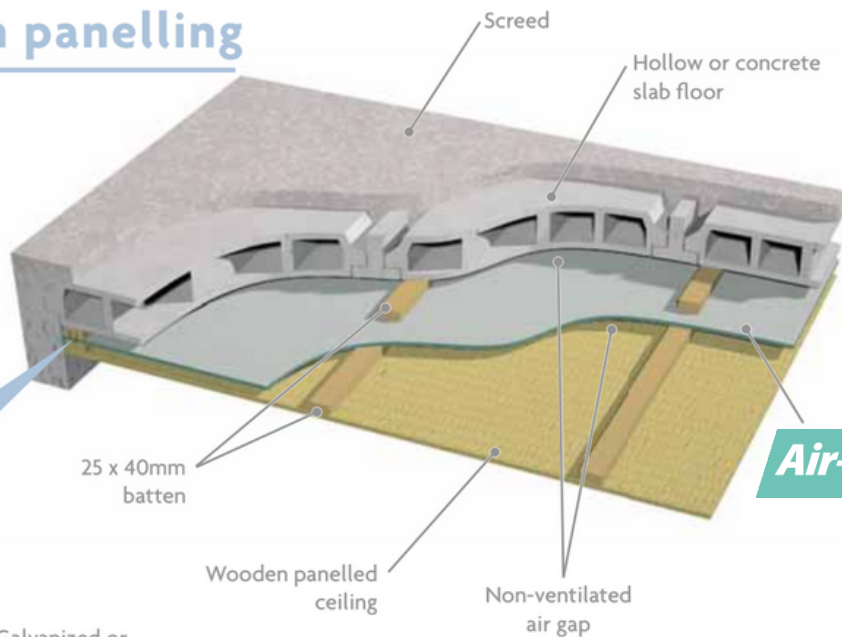
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INSTALLATION UNDER HOLLOW OR CONCRETE SLAB FLOOR with wooden panelling

Air-Reflect



Galvanized or stainless steel 16mm staple
25 x 40mm batten

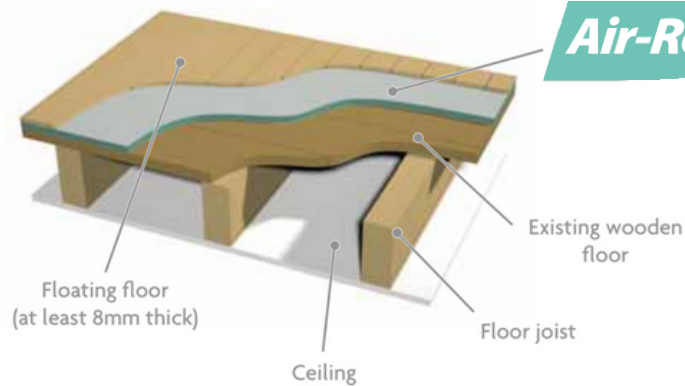


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INSTALLATION UNDER WOODEN FLOOR over existing wooden floor

Note

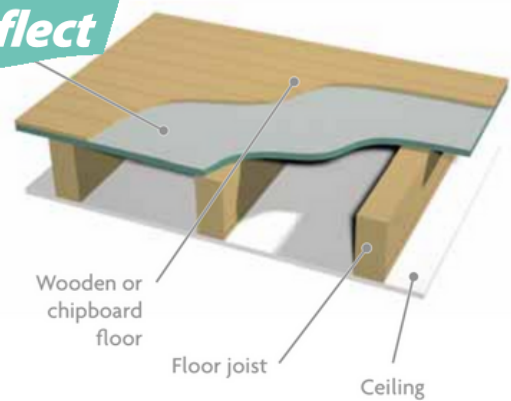
The hollow space created by the joists amplifies the echo chamber effect. In order to counter this effect, this space must be filled with a fibre-based insulating product that is as thick as the joist is deep.



INSTALLATION UNDER WOODEN FLOOR over floor joist

Note

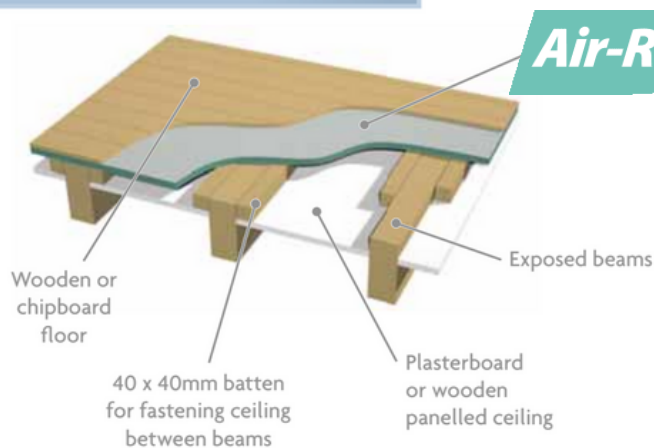
It is not necessary to keep an air gap between Airflex® and a wooden floor.



INSTALLATION UNDER WOODEN FLOOR over floor joist with exposed beams

Note

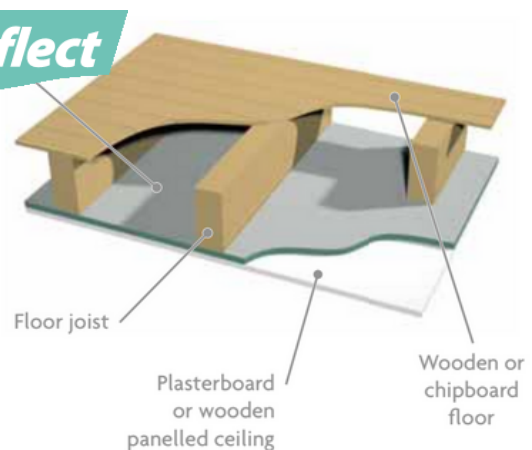
In order to counter the echo chamber effect, this 40mm deep hollow space must be filled with a fibre-based insulating product.



INSTALLATION UNDER WOODEN FLOOR under floor joist

Note

The hollow space created by the joists amplifies the echo chamber effect.



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Contact

WWW.AIRGREENINSULATION.COM

Email: AIRGREENINSULATION@GMAIL.COM

TEL: +447849588352

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 **IGBC**
IRISH GREEN BUILDING COUNCIL