

HOW UNDERFLOOR INSULATION WORKS: THE KEY TO COMFORTABLE, ENERGY-EFFICIENT MODULAR ACCOMMODATION

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Why Underfloor Insulation Matters

When it comes to **underfloor insulation for modular accommodation**, most people focus on walls and roofing, but what's underfoot plays a huge role in energy efficiency and comfort. Without it, heat loss in winter and heat gain in summer can drive up running costs and make interiors harder to regulate.

At Aruva Modular, we build **practical designs that make life easy and pay back**, and that includes **properly insulated floors**. Every Aruva unit features a **10mm reflective-coated foam layer, suspended 20mm below the chipboard flooring**. This isn't just an extra layer—it's a well-designed system that **uses an air gap and radiant heat reflection to maintain a stable indoor climate year-round**.

Here's how it works, why it matters, and what it means for your investment.

How Underfloor Insulation for Modular Accommodation Works

The Power of the Air Gap

Insulation is all about slowing down heat transfer. While bulk insulation in walls and ceilings is effective, **underfloor insulation benefits most from a well-designed air gap**.

With Aruva's system, the **insulation sits 20mm below the floor, creating a sealed layer of still air**. That gap does the bulk of the work, acting as a **thermal break** to slow heat movement between the inside and outside.

- In **winter**, warm air inside the unit is prevented from escaping through the floor.
- In **summer**, heat from below is stopped from pushing into the accommodation space.

Reflective Coating: Managing Radiant Heat

Heat moves in different ways—conduction through solid

materials, convection through air, and **radiation from heat sources like the sun or warm ground surfaces**.

Aruva's **reflective-coated foam** plays a crucial role here. The **metallic layer bounces radiant heat away**, preventing it from being absorbed into the flooring. This is particularly beneficial in **rural areas, where temperature swings between day and night can be extreme**.

The Foam Layer: A Protective Barrier

The **10mm foam layer** adds another level of resistance, improving thermal insulation while also acting as a **moisture and sound barrier**.

- **Stops cold draughts** from rising through the floor
- **Reduces sound transfer**, useful for high-traffic areas
- **Prevents moisture issues**, protecting flooring from damp conditions

Why Smart Agricultural Managers Invest in Underfloor Insulation

If you're providing modular accommodation for staff, short-term stays, or family members, **performance matters**. Smart agricultural managers understand that **investing in high-quality accommodation for their people leads to better performance across the organisation**. Workers who are comfortable and well rested are more productive, and properly insulated housing plays a big part in that.

Lower Energy Costs, Higher Efficiency

Without underfloor insulation, **up to 20% of a unit's heat loss can occur through the floor**. That translates to higher heating and cooling costs. **By reducing heat transfer, Aruva's underfloor insulation helps maintain a more stable temperature, reducing reliance on heaters and air conditioning**.

The result? **Lower running costs, improved energy efficiency, and reduced wear and tear on appliances**.

A More Comfortable Living Space

A poorly insulated floor **feels different**. In winter, it's cold underfoot. In summer, it can make the whole space feel warmer. A well-insulated floor keeps the temperature **balanced, comfortable, and consistent**.

This is particularly important for:

- **Worker accommodation**, where comfort translates to better rest and productivity.
- **Tourism and short-term rentals**, where guest experience is key.
- **Long-term living spaces**, where year-round consistency matters.

Protection Against Moisture and Structural Damage

Moisture is a concern in many Australian climates, especially rural and agricultural areas where rainfall and humidity fluctuate. Underfloor insulation helps protect flooring from damp conditions, reducing the risk of:

- Warped or damaged floors
- Mould growth and poor air quality
- Structural wear and long-term degradation

By acting as a barrier, **this insulation system helps extend the life of modular accommodation, keeping it strong and efficient for years.**



How Underfloor Insulation Compares to Other Options

Not all insulation works the same way. Here's how different options compare:

Type of Insulation	How It Works	Best Used For
Reflective Foam (Aruva's underfloor insulation)	Reflects radiant heat, traps air for insulation	Underfloor applications, modular accommodation, suspended floors
Bulk Insulation (Fibreglass, wool, or batts)	Traps air in thick layers to slow heat transfer	Walls, ceilings, some flooring

Rigid Foam Boards	High-density thermal resistance	Permanent structures, walls, under slab
Spray Foam Insulation	Expands to seal gaps, provides air-tight insulation	Walls, ceilings, irregular spaces

For underfloor use, **a reflective system with an air gap delivers the best results**, balancing insulation, moisture protection, and cost-effectiveness.

Is Underfloor Insulation Worth It?

The short answer? **Yes.**

Smart agricultural managers and property owners know that **good accommodation pays off**—not just in the short term, but in **long-term efficiency, durability, and occupant satisfaction**.

With underfloor insulation, you get:

- **Lower energy costs** – Reduced reliance on heating and cooling.
- **A more stable, comfortable environment** – No freezing floors in winter or stifling heat in summer.
- **Stronger, more resilient accommodation** – Less wear and tear, better moisture resistance.
- **Better long-term value** – A modular unit that stays efficient for years.

Those who **manage agricultural operations and need to house workers understand that looking after their people leads to better productivity, retention, and overall business performance**. Quality accommodation isn't just about a building—it's an investment in a **well-rested, high-performing team**.

Aruva's Approach: Practical, Reliable, Built to Last

At Aruva Modular, **our process keeps it simple, so you're sorted from start to finish**. We don't cut corners, and we don't add features for the sake of marketing. Every detail in our builds—including underfloor insulation—is there for **a real reason: to deliver modular accommodation that's practical, efficient, and comfortable from day one**.

Because at the end of the day, it's not just about a structure—it's about a **good night's sleep**.

For more on our modular accommodation solutions, visit www.aruva.au.

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