EXPOL

Underfloor Insulation

A comprehensive guide to underfloor insulation

Home insulation DIY projects often focus on exterior walls, ceilings, and other parts of the house, but one part of the house that can easily get overlooked in insulation projects is the flooring.

When looking to insulate your home to make it more comfortable and economical year-round, while also adding value to the property, it pays not to overlook underfloor insulation and to address how the space under your floors is affecting the comfort of your home.

In this comprehensive guide, we will cover all you need to know about underfloor insulation. This guide will explain what it is, how it works and why it's effective, as well as the most popular types of underfloor insulation in Australia, how to install it, how it adds long-term value to your home, and where you can buy it. We will also discuss what type of homes would benefit the most from having underfloor insulation.

What is underfloor insulation?

The concept of addressing and managing the flow of heat through the flooring in homes is not new. In fact, the idea can be traced all the way back to Korea circa 5,000 BC and the use of the Ondol system.

Like other forms of insulation, underfloor insulation provides an effective barrier to the flow of heat through suspended timber sub-floors and helps reduce your reliance on heaters in winter and air-conditioners in summer. Such artificial heating and cooling methods add to your electricity bill while contributing to greenhouse gas emissions.

Homeowners may overlook the underside of their floors as an area where heat can enter or exit their homes. So while you may have sufficiently insulated parts of your home, such as the walls and ceilings, you will still be losing significant heat – or gaining significant heat when you least want it – if your suspended timber sub-floor isn't supported with underfloor insulation. Either way, it is costing you money by increasing your reliance on heating and cooling systems in your home.

Does underfloor insulation actually make a difference?

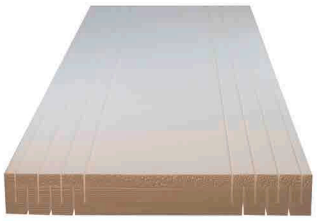
Underfloor insulation can be one of those investments that homeowners may be tempted to question the relevance of. Once installed, it typically sits out of sight – meaning it's also out of mind – and the benefits it delivers may not be immediately apparent.

However, underfloor insulation, when installed correctly and when quality underfloor insulation products with high R-values are used, certainly makes a difference. You'll notice a return on your investment in underfloor insulation in the form of a home that's naturally more comfortable year-round (less heat loss in winter, less heat gain in summer), reduced electricity bills, and added value to your home.

It's also worth noting that even if the rest of your home is insulated properly, without underfloor insulation your floors will still be letting in air draughts and allowing heat to leak out. And underfloor insulation can also provide acoustic advantages for your home by dampening the sound of footsteps on your wooden floors. Along with wall and roof insulation, underfloor insulation also helps reduce the transfer of noises from outside to inside your home and vice versa.

The various types of underfloor insulation

There are four main types of underfloor insulation products. Each one uses different kinds of materials and slightly different methods to deliver underfloor insulation for your home, and each one also comes with its own installation method.



Foilboard Insulation

A rigid insulation panel featuring a fire retardant expanded polystyrene core covered with an aluminium layer of foil on both sides. With a fire retardant expanded polystyrene core, foil board provides a thermal break and vapour barrier for thermal performance and moisture resistance.

Glasswool Underfloor Insulation Batts

Glasswool batts feature millions and millions of tiny air pockets to effectively slow down the flow of heat. Made from recycled glass materials and a cost-effective choice, Glasswool insulation products are pre-cut to fit between the joists of timber floors and can be strapped or stapled in place.

Polyester Rolls

Polyester rolls are a type of bulk insulation that traps billions of little air pockets within their structure to slow down and break up the heat path. Made from recycled plastic materials and typically pre-cut to fit new and existing timber joist floors, polyester rolls are available in a range of thicknesses and R-values.

Expanded Polystyrene (EPS) Foam panels

Arguably the most popular choice for underfloor insulation, expanded polystyrene rigid foam boards are a cost-effective and energy efficient underfloor insulation solution to effectively make your home more comfortable all year round. Certain EPS foam board products are uniquely designed to be easy to install, making them perfect solutions for DIYers looking to add value to their home.

How underfloor insulation adds value to your home

Installing underfloor insulation can add long-term value to your home by making it a more cost-effective, efficient, and comfortable place to live. Here are five ways quality underfloor insulation adds value to your home.

Reduce drafts:

By creating a barrier that wind cannot pass through, underfloor insulation helps eliminate drafts in homes that are raised above the ground.

Prevent heat loss:

Insulation reduces temperature change, meaning less energy is needed to maintain your preferred temperature inside your home.

Reduce unwanted moisture:

Wood floors are particularly vulnerable to moisture. By installing underfloor insulation you will be creating a 'vapour barrier' that prevents moisture from gathering on the underside of your raised wooden floor, which over time may cause the floor to warp or become stained.

Pipe protection:

For those living in the colder parts of Australia in homes with piping beneath their wooden floor, underfloor insulation provides an additional level of protection when the water in the pipes reaches freezing temperature. This can cause the pipes to crack, if not completely burst.

Make summers manageable:

Not just for winter, underfloor insulation also helps to control the temperature inside your house during the warmer months – without relying so much on your air conditioner.

Does your home really need underfloor insulation?

As effective as underfloor insulation is, it's important to note that underfloor insulation is not always required. It all depends on the age of your home, the specific flooring conditions of your home and, to a lesser extent, where your home is located.

So it's worth first determining if your flooring is eligible for underfloor insulation before investing your time and money into it. If you know the flooring materials and method used in constructing your home, then you should know whether or not your home is a candidate for underfloor insulation. If you're not quite sure, it might pay to consult a professional underfloor insulation expert.

Your home may not be a candidate for underfloor insulation if:

- it's built on a solid concrete base (not including houses built on suspended concrete slabs).
- there's the presence of chemical-based spray for insects.
- asbestos is present.
- the home is non-compliant to wiring rules (AS/NZS 3000:2018).

Underfloor insulation as a DIY project

One of the great things about underfloor insulation being light in weight is that it can be very simple to install in your home. In fact, depending on what type of underfloor insulation product you choose, it can be so easy that you can do it yourself as DIY project.

One such example is expanded polystyrene foam panel products. Installing this type of underfloor insulation product is simply a matter of:

- Measuring the distance between your joists.
- Cutting the panel to size if required.
- Sliding the panel between the joists and pushing it so it's nestled flush with the floorboards to ensure there are no air gaps.
- Fixing supplied fittings in place at the panel's corners.

While some underfloor insulation products require professional installation, on the whole underfloor insulation doesn't typically require an extensive or overly strenuous installation process, which makes it a favourable option for DIY enthusiasts. If you're planning in installing your new underfloor insulation as a DIY project, it's worth choosing a product that is non-toxic, such as rigid expanded polystyrene boards. They do not release small fragments that can get trapped in airways, and they do not irritate the skin.

How effective is underfloor insulation?

Whether your floorboards are exposed or have carpet or another material laid on top of them, quality underfloor insulation is still necessary for minimising heat loss and maintaining a desirable internal temperature year-round.

Just like other forms of home insulation, underfloor insulation works in a simple yet highly effective way. Underfloor insulation helps keep your home cool in summer and warmer in winter by creating a barrier that shields your home from air that flows up through your floorboards and into your home.

If you have no insulation at all under your floor, then you may be surprised about how much change you'll feel with the help of underfloor insulation. Even using a minimum R-value underfloor insulation product will actively reduce the transfer of heat.

But when using a high R-value underfloor insulation product coupled with the correct installation method, you'll benefit greatly from investing in underfloor insulation for your home.

The cost of underfloor insulation

Compared to other methods and materials for insulating your home, underfloor insulation is an affordable solution, particularly when done as a DIY project.

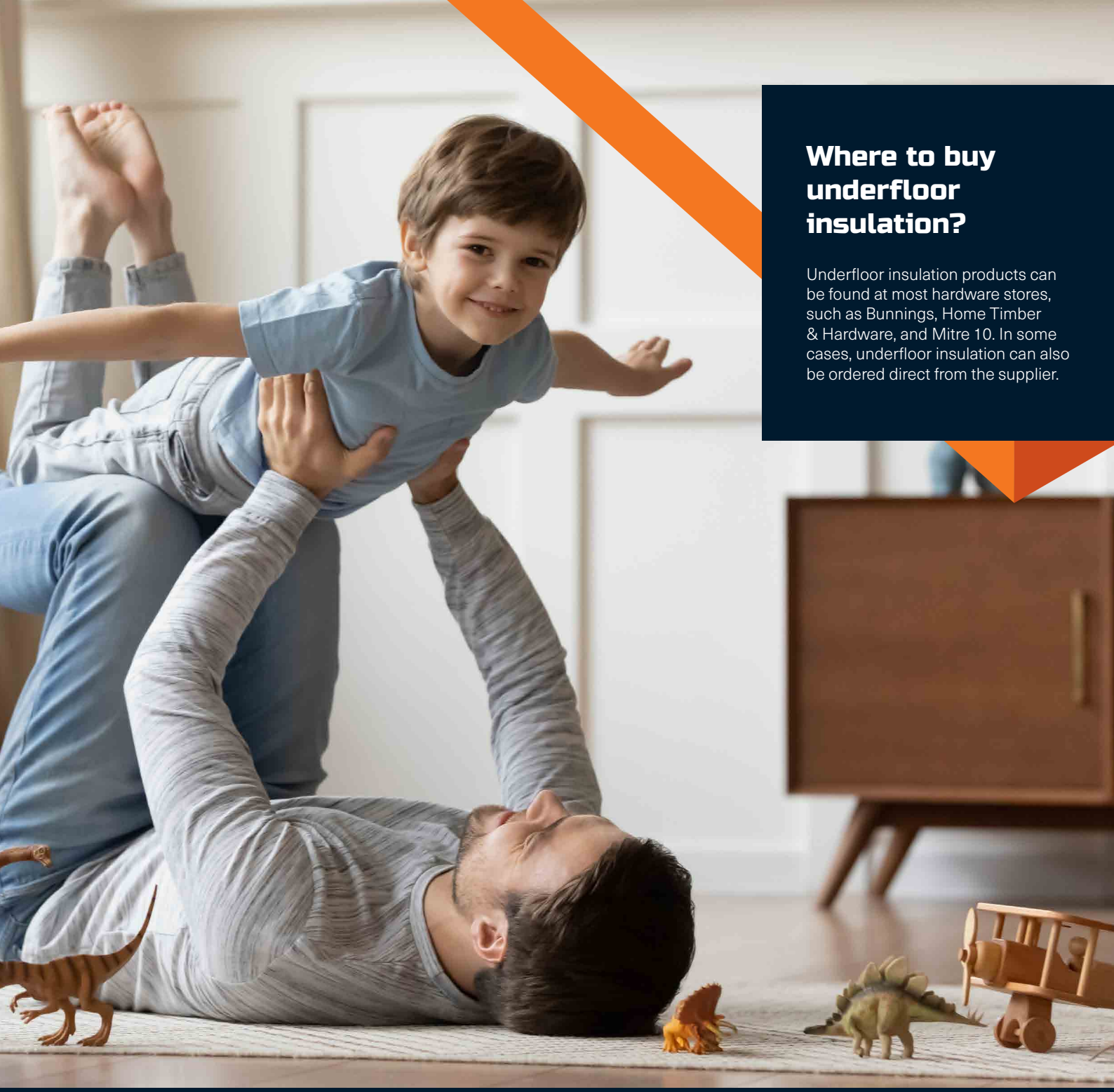
The cost of your underfloor insulation will depend on the following variables:

- The size of the floor area you wish to insulate.
- The type of material and R-value you choose for your underfloor insulation.
- Whether you will require labour to install or whether you do this yourself.

Some underfloor insulation providers have an insulation calculator on their website that can help you determine the materials cost for your underfloor insulation project.

Where to buy underfloor insulation?

Underfloor insulation products can be found at most hardware stores, such as Bunnings, Home Timber & Hardware, and Mitre 10. In some cases, underfloor insulation can also be ordered direct from the supplier.



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Trusted for more than 20 years, Expol Underfloor Insulation is the ideal rigid board for insulating under timber floors. It is easy to install, available in four convenient joist widths (560mm, 470mm, 410mm, 360mm), and a popular option for DIY underfloor insulation projects.

For more information and tips on underfloor insulation, visit expolinsulation.com.au. To discuss your underfloor insulation project call the experts **1300 AU FOAM** or email **sales@foamex.com.au**

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