



## Case Study

# KNAUF INSULATION HELPS BRING EMILY AND JAKE'S 'PASSIVE HOUSE' ASPIRATIONS TO REALITY

September 2021

### Project Name

'Passive House' - Jake and Emily Amor

### Products Used

Earthwool® R6.0 Ceiling batt  
Earthwool® R3.0 Ceiling batt  
Earthwool® 2.7<sup>SHD</sup> Soundshield Plus

### Building Type

Residential: House

### Application

Ceiling and Walls

## Build on us.



Declare.



Emily and Jake Amor began their journey as first time owner-builders by constructing a modern and sustainable ‘passive house’ on a 13 acre block they purchased in South West Victoria. According to Emily, “The whole intent behind our house design was to create a passively heated and energy efficient home. Insulation is a big part of this design. With all the thermal gains that can be achieved through our large north facing, double glazed and thermally broken windows, insulation helps to maintain a steady internal temperature and reduce heat loss. Internal wall insulation also offers acoustic benefits which is great if you have kids in the house.”

### What was the challenge?

The land where the Amors’ are building their future home is situated in a part of Victoria that experiences cold weather year-round. The key challenge in constructing an eco-friendly passive house was to combat the cold without relying on air conditioning that would not only contribute to unwanted carbon emissions but also inflate their electricity bill.

“One of the biggest challenges we’re hoping to address is the amount of money conventionally spent on energy bills and the over-reliance on the fireplace and electrical heating to keep the home warm during winter,” Emily said. “Living in South West Victoria where it’s cold for most of the year, heating the home can be a costly venture. We are trying to minimise energy consumption and reduce our overall carbon footprint over the long term. We are also aiming to create a home that works for us, rather than us becoming a slave to it with the cost of ongoing bills. We want to rely as much as possible on nature’s main energy source, the sun, to warm our home and smart design to keep the house cool in the warmer months.”

### What products were used?

The Amor’s agreed that insulation is essential to achieve a passive designed home and for this reason selected Knauf Insulation products to insulate the walls and ceiling. The couple chose R6.0 and R3.0 Earthwool® thermal insulation for the ceilings, while R2.7 SHD Earthwool® SoundShield Plus was used in the external walls and R2.5 Earthwool® SoundShield in the internal walls. According to Emily, they selected Knauf Insulation’s Earthwool® range for their passive house project due to the products’ superior DIY handling experience and the company’s sustainability credentials that include the use of recycled elements and low-carbon manufacturing process.

**“One of the main reasons we decided to use Earthwool® insulation was because it is made using recycled glass and manufactured without the use of petro-based binders; it doesn’t contain added formaldehyde. This is in line with our overall goal to reduce as many toxins as possible in our home for the sake of our family’s health and the overall impact on the environment.”**



***Having worked with other insulation products in the past, we know it can be notorious for causing skin irritations due to the glass particles. We still used protective suits and long sleeve garments during installation, which is particularly important when installing the product in the ceiling, but overall we found Knauf Insulation's Earthwool® far less irritating and itchy on the skin.***

Emily Amor

### *What was the result?*

Insulation was successfully installed in the home's ceiling and internal and external walls to provide complete protection from the cold and deliver a superior

level of thermal and acoustic performance. Emily said, "Knauf Insulation is a trusted, environmentally sensitive manufacturer so if you're trying to make a more conscious choice about the products you're using in your home and reduce environmental toxins, they are a great option."

Insulation is a must in any home to maximise energy efficiency and solar gains to heat (and maintain that heat) in the home. "I can't imagine anyone would consider building a new home these days, especially in colder climates, without insulation. Without it, you're basically leaking money through your walls every time you switch on a heater or reverse cycle air conditioner to artificially heat your home. For a modest upfront cost, you can certainly save a lot of money in the long term by insulating your home."



# About Earthwool® Insulation

Earthwool® insulation batts will improve the thermal comfort and energy efficiency of the building in which it has been installed thus keeping it cool in summer and warm in winter. The super-soft and easy to handle benefits have been further enhanced with TwinTech®, a dual forming technique that ensures a smooth finish on both sides of the insulation, which improves product handling and appearance.

Earthwool® insulation batts are made using up to 80% recycled glass and with ECOSE® Technology, a plant-based binder that contains no added formaldehyde.

- > Sound absorbing
- > Non-combustible
- > Saves energy – lower energy bills
- > No added formaldehyde
- > Soft to handle and install
- > TwinTech® – smooth finish on both sides
- > Compression packed – more product per pack
- > Odourless



## ECOSE® Technology

A unique plant-based binder which contains no added formaldehyde or phenol. It is made from natural raw materials that are rapidly renewable and result in lower upfront carbon emissions compared to traditional formaldehyde-based binders. This makes our insulation soft to touch and easy to handle.



## TwinTech® Technology

An advancement in insulation manufacture – the dual forming technique enables thicker products for evolving building code requirements and ensures there is a smooth finish on both sides of the insulation for optimal product handling and appearance.



## Declare & Red List Free

Knauf Insulation's glasswool, free from Red List materials and certified for excellent air quality, features up to 80% recycled content and ECOSE® Technology, offering safer, eco-friendly building solutions.



For more information about Knauf Insulation's range of insulation products, visit:  
[www.knauf.com](http://www.knauf.com)

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