

Case Study

## **Knauf Insulation Skillion Roof Products are used to meet H1 compliance and maintain building code ventilation requirements**

December 2024



### *Project Name*

Alton Downs Vineyard, Awatere Valley

### *Products Used*

R7.4 Skillion batt

R1.3 Skillion batt

### *Building Type*

Home

### *Application*

Skillion Roof

### *Builder / Installer*

Peter Ray Homes / Living House NZ

## **Build on us.**



*The Alton Downs Vineyard Home is a beautifully designed, high-end architectural residence located in the Marlborough District of New Zealand. This spacious 5-bedroom home, features skillion roof construction, ensuring a striking and functional design.*

*To be able to achieve stringent H1 compliance and building code requirements, Knauf Insulation glasswool skillion batts were specified, providing superior thermal performance and energy efficiency. The thoughtful integration of high-quality insulation and modern design elements creates a comfortable, sustainable living environment in one of New Zealand's most picturesque regions.*

### What was the challenge?

The builder, Peter Ray Homes designed the skillion roof structure of the Alton Downs Vineyard home using 290mm rafters at 450mm centres. The New Zealand Building Code requires a 25mm air gap between the top of the insulation and the roof purlins, while achieving high R-Values is necessary to meet H1 requirements. Achieving these goals requires a balance of insulation performance, air circulation, and thermal efficiency, ensuring the building's overall comfort and energy efficiency.



### What was the solution?

For the Alton Downs Vineyard Home, the builder has used a 290mm rafter. To insulate this area Knauf Insulation has proposed the use of a R7.4 skillion batt.

The nominal thickness of the R7.4 skillion batt is 265mm which means it will friction fit nicely while also maintaining the 25mm air gap under the roof purlins. Our skillion batt insulation boasts a high density and thermal resistance rating, which ensures excellent thermal performance by significantly reducing heat transfer. This makes it ideal for skillion roofs, where a higher R-Value is essential for H1 Compliance.

The unique thickness of our insulation was specifically chosen to accommodate the critical ventilation requirements of the roof design. This allows for the necessary 25mm air gap under the roof underlay, which is vital for maintaining airflow and ensuring the building remains comfortable and energy-efficient. Many insulation products on the market do not account for this crucial ventilation pathway, but Knauf Insulation's skillion batts are designed to fit securely and friction-fit neatly between the rafters, keeping the air gap intact.

The nominal thickness of 265mm is not only key to maintaining the air gap but also allows for easy installation. The batt width and thickness have been carefully considered to provide a seamless fit, ensuring that the installation process is straightforward and efficient.

The R7.4 skillion batts will friction fit into place creating a complete thermal envelope for the home helping maintain a comfortable temperature inside the home year-round.



The Knauf Insulation range of skillion products are manufactured using DriTherm Technology, a silicone treatment, improving their durability and resistance to moisture while they are also tested to be non-combustible in accordance with AS 1530.1, ensuring the highest standards of fire safety.

Furthermore, Knauf Insulation's glasswool products are made using ECOSE® Technology, a sustainable, plant-based binder with no added formaldehyde, acrylics, dyes, or colours. This manufacturing process reduces the carbon footprint while maintaining excellent product performance. The ability to compress the product at a higher rate allows for more glasswool insulation per package, reducing logistics requirements and storage on site.

### Why Knauf Insulation?

Knauf Insulation provided a highly effective solution for the Alton Downs Vineyard Home. Our skillion batt glasswool insulation was the ideal choice to meet both the functional and environmental demands of the project whilst also meeting the stringent H1 and Building Code requirements.

***"We chose to specify and use Knauf Insulation's skillion batts because their design perfectly met the building code requirements. Unlike many other insulation products, Knauf's skillion batts were able to maintain the crucial 25mm air gap needed for proper ventilation, without compromising the performance of the insulation. Their friction-fit design ensures a secure and efficient installation, making them the ideal choice to meet both the H1 requirements and the strict air gap specifications of the building code."***

John Pile, Living House NZ Ltd



# About Knauf Insulation

## R7.4 Skillion batt

Our R7.4 skillion roof insulation batts are designed to offer a combination of excellent thermal and acoustic performance. The products are specifically designed to provide the maximum thermal contribution in the roof space. Our systems allow for Building Code requirements to be met and ventilation requirements to be maintained.

Knauf Insulation Skillion Roof batts are non-combustible, made using up to 80% recycled glass and with ECOSE® Technology, a sustainable binder with no added formaldehyde. They're available in a range of R-Values and sizes to suit most joist spaces.

- > High thermal performance - year-round comfort
- > Sound absorbing
- > Saves energy - lower energy bills
- > No added formaldehyde
- > Soft to handle and install
- > Friction fit
- > Odourless
- > Non-combustible



### 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, is 70% less energy intensive to manufacture than traditional binders, and makes our insulation soft to touch and easy to handle.



### DriTherm® Technology

A silicone treatment that is added during manufacture to upgrade the moisture resistance of the glasswool insulation.

**Declare.**

**Red List Free**

### 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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