



## Warm Roofs

### What is a Warm Roof?

Warm Roofs are relatively new technology in the New Zealand market, having been available to the international market for over 30 years. The traditional 'cold deck' flat roof simply consisted of a structural timber deck with a waterproof covering directly applied to the top of the deck, with insulation being somewhat of an afterthought. The mineral wool insulation in this system is stuffed in between the timber rafters/joints with a minimum of 50mm air gap left in between the insulation material and the timber roof deck. This gap is necessary to allow air-flow so that warm, moist air (typical of our New Zealand climate) is allowed to escape rather than coming in to contact with the timber deck and forming condensation. When condensation occurs it can lead to rotting decking and/or timbers, damp ceilings and damp insulation which becomes ineffectual. Good external ventilation is essential to minimise the risk of condensation in a cold roof, preferably by installation of soffit vents to the underside of the fascia boards. Good ventilation is vital to allow condensation to escape, particularly where moisture levels are high (in places such as kitchens and bathrooms). Unfortunately this means heat is also lost in the process.

The warm deck flat roof system uses a combination of insulation and waterproof membrane to create your warm roof by putting the insulation on the outside of the timber deck structure. This means no ventilation is required, and there is nowhere for condensation to form.

By moving the insulation to the outside of the structure, the roof deck is effectively brought inside, which results in a 'warm deck' (hence the name), this removes the possibility of condensation forming on the underside of the deck and eliminates damp. Because this design works by conserving heat, no ventilation is required. Modern polyisocyanurate (PIR) foam rigid insulation with reflective foil to both sides provides more than double thermal efficiency compared to mineral wool, and unlike the cold roof method the insulation thickness is not limited by the depth of the timber rafters/joists. A vapour barrier or vapour control layer is an essential component of any warm roof.

### What are the benefits of installing a warm roof?

As previously described, warm roof systems require less ventilation - effectively providing the roof with a warm blanket of insulation. This provides you with not only a warmer and drier building environment, but one that is more energy efficient.

Roofing Industries and its warm roof partners can provide an optimised solution to suit most situations.

For more information. - [ASK US](#)