The H1 Roof

your solution to insulated roofing

FAQs

What is the difference between 'Warm roof' and 'WarmSpan'?

A: 'Warm roof' is a broad, generic term for a roof insulating a building by installing rigid foam panels on the outside (on top of) a substrate that has been deemed structurally compliant by industry professionals other than Viking.

'WarmSpan' is Viking's brand name for our warm roof that has been designed to a prescriptive formula. It's a complete, engineered, structural warm roof (including the substrate and supports) which has been officially tested and certified as being structurally compliant by Viking.

What is the difference between 'WarmSpan[1]' and 'WarmSpan[2]'?

A: 'WarmSpan[1]' (which has ten years history-in-use) uses glass-facer insulation panels which are adhered to the vapour barrier and/or engineer-tested metal tray substrate (ST900; ST700) with our proprietary polyurethane adhesive.

NB: A Warmspan[1] assembly that complies with the new H1/AS1 requirements, will require two layers of insulation glued together and the assembly will be a minimum of approximately 178mm thick.

'WarmSpan[2]' removes some cost and thickness with its 140mm single-layer of high-R-value foil-faced insulation board covered with a 6.4mm coverboard; mechanically fastened using insulated plugs to one of the engineer-tested substrate options being (i) any of the metal substrates listed above with supports as wide as 1800mm, or (ii) 17mm tongue and groove plywood with supports at 900mm centres.

The waterproofing membrane options for both WarmSpan systems include Viking Enviroclad or Viking Torch-On – fully bonded to the surface – not mechanically fastened.

What's so special about WarmSpan[2]'s steel tray or T & G plywood substrate options?

A: When the WarmSpan[2] assembly was engineer-tested as a whole assembly using these specific substrates, (including snow loading testing), the results proved that less support; and therefore, less labour and material cost was required to still comply with B1 (structure) of our Building Code and therefore not compromise the structural integrity of the building.

Why do you need a cover board for WarmSpan[2]?

A: In order to have the thinnest possible H1 compliant roof assembly for design purposes, we need to employ a foil-faced polyiso board as it has the greatest thermal efficiency per thickness on the market. Foil facer insulation boards can't be adequately adhered to with torch-on or TPO adhesives. Viking's cover board not only provides an excellent surface to fully bond both membrane types to, it also provides acoustic; fire; and construction foot traffic protection.

How is it that moisture content of the plywood substrate is not relevant prior to being overlaid and is only required to be H1.2 treated?

A: The plywood substrate is situated beneath an impermeable vapour barrier membrane, which is not the external envelope membrane and is deemed an internal structural component. The plywood will dry during the construction period and must be below 18% prior to internal linings being installed. This is no different to the wall framing components which have the same H1.2 treatment requirement and are separated from the external envelope by an RAB or building wrap, which can be applied to the framing regardless of a high moisture content.

With the vapour barrier being loose laid (with mechanically fastened PIR) it is not required to adhere to a dry plywood substrate.

Why do I not need Stainless Steel fastenings for the plywood and warm roof build up as per E2/AS1?

A: E2/AS1 is an acceptable solution which only accounts for H3.2 treated plywood as a substrate for a directly applied envelope membrane. The Viking WarmSpan^2 system is an alternative solution where the plywood is an internal structural component and is only required to be H1.2 treated. Fastenings in internal environments which are not coming into contact with H3.2 treated timber do not need to be stainless steel.

***NB:** H1.2 treated ply is not always available, so with H3.2 as the alternative, it would require stainless steel screws to be fastened.

Why can 17mm ply be laid on 900mm centre supports with no edge blocking? E2/AS1 states 400mm centre and edge blocking.

A: E2/AS1 is an acceptable solution which only accounts for plywood as a substrate for a directly applied envelope membrane. The Viking WarmSpan^2 system is an alternative solution where the plywood is an internal structural component with tongue and grooved edges. Being a structural component, supporting a build-up of PIR and coverboard, it has been tested by Holmes Solutions to prove it exceeds minimum uplift and deflection requirements; comfortably in excess of those required for 'Extra High Wind Zones.'

Secondly, Viking WarmSpan^2 system's envelope membrane is fully adhered to a thick build-up of engineered sheet products. This completely isolates the envelope membrane from the dynamic nature of a timber substrate – which as we all know, has constant seasonal, structural, thermal, and deflection movement.

Is Warmspan^2 a cut-price roofing system?

A: No. Absolutely not. Warmspan^2 was born from industry concern over cost increases from the new H1 insulation requirements.

Viking took the path of analysing every component of a typical low-slope roof structure, and then assessed how each component could meet building code compliance – as opposed to the typical path of following traditional design methodology. To ensure our system achieved all performance requirements, Holmes Solutions were contracted to conduct physical testing of the complete systems.

We didn't just stop at assessing each component, we also looked at how differing solutions affect installation time, and the practical aspects of constructing in the NZ environment. What Viking has delivered is a complete structural and insulated roofing methodology which exceeds minimum compliance requirements but reduces time and cost by eliminating over-engineered traditional design, and practical methods of installation.

Roofspec Viking

Taking care of detail