AUS HOME INSULATION
www.aushomeinsulation.com.au

SuperQuilt

Multi-layer Insulation Blanket for Roofs

Thermal Insulation in a 40mm thin, flexible, multi-layer membrane

Technical Manual V1.0

- Pitched roof insulation
- Fully certified
- Thermally tested in accordance with DIN 52611-1 (Guarded Hot Box)
- Core thermal resistance of R-value=1.5
- Ideal for new build & refurbishment
- Effective solar overheating barrier
- Lightweight, flexible and only 40mm thin
- Fast and simple installation
- Vapour control layer

Thermally the best performing multi-foil on the market by far.

BEAL BUILDING ELEMENT ASSESSMENT LABORATORY LIMITED

BEAL APPRAISED · BUILDING CODE COMPLIANT · IN 1302

YBS Insulation
HIGH QUALITY PRODUCTS FOR THE BUILDING INDUSTRY

Insulation for use in Roofs

Benefits

- **Fully certified**
- **Thermally tested in accordance with DIN 52611-1**
- **Roof constructions with SuperQuilt as detailed in this technical manual achieve up to a Total R-Value of 5.1 (calculated to NZS 4214:2000)**
- **Effective solar overheating barrier**
- **Effective in summer and winter**
- **Lightweight, thin and flexible**
- **Fast and simple installation**
- **Tear resistant**
- **For pitched roofs between 20° and 70°**

SuperQuilt is a very flexible, easy to fit, multilayer insulation, thermally tested in accordance with DIN 52611-1, achieving a high core thermal resistance of R-value=1.5 for SuperQuilt.

How does SuperQuilt work?

Due to the special composition of multi layers of insulation, SuperQuilt effectively deals with all forms of energy transfer (i.e. conduction, convection and radiation). SuperQuilt works most effectively by reflecting infra-red radiation. This means that not only is SuperQuilt effective in winter by reflecting heat back into the building and keeping cold out, but also in summer SuperQuilt is a very effective solar over-heating barrier reducing the need for artificial cooling systems and preventing uncomfortable build up of heat in the building.

General Fixing Instructions

Installation of SuperQuilt for pitched roof applications and additional insulation products should be in accordance with this technical manual and current good building practice.

SuperQuilt must be installed with a 75mm down slope overlap with all joints taped with SuperQuilt 75mm Foil Tape.

SuperQuilt can be cut with a SuperQuilt cutter, craft knife or a sharp pair of scissors.

SuperQuilt can easily be fixed with staples at regular intervals. Minimum 14mm stainless steel or galvanised staples are recommended.

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Health and Safety

Electrocution

SuperQuilt insulation must be installed with extreme caution to avoid the metallic foil coming into contact with electricity and becoming electrified and posing a risk of electrocution or fire. Ensure that all wiring is kept well clear of the face of the SuperQuilt blanket and all metal fixings passing through the SuperQuilt will not contact any electrical wiring. All wiring that passes through the SuperQuilt Multi-layer Blanket needs to be protected from contact with the SuperQuilt by a suitable non-conductive conduit. Installers should identify all wiring and assess its condition, inspecting for any damage prior to beginning installation and take appropriate precautionary measures to safeguard themselves and the future building occupants from electrocution.

Ensure all risks have been indentified to reduce the risk of electrocution during installation. Refer to the Australian/New Zealand Wiring Rules (AS/NZ 300:2007) for more detailed information.

Fire Hazard

SuperQuilt used in all roofing applications must be installed in combination with a roofing underlay as detailed in this technical manual. Roofing underlay must have a flammability index not greater than 5.

Always wear protective gear when working in roof spaces.

Under Rafter Application—Tile Roof

Fixing Instructions

Installation of SuperQuilt for under rafter applications should be in accordance with this technical manual and current good building practice.

SuperQuilt is applied directly from the roll either vertically or horizontally depending on the rafter height, pulled tight and stapled onto the rafters at minimum 300mm centres.

SuperQuilt should be overlapped down slope at each joint by approx 75mm and stapled onto the rafters. The joints should be sealed by SuperQuilt Foil Tape. Additionally at the eaves Super-Quilt is cut around the rafters and sealed to the cavity wall insulation or wall plate.

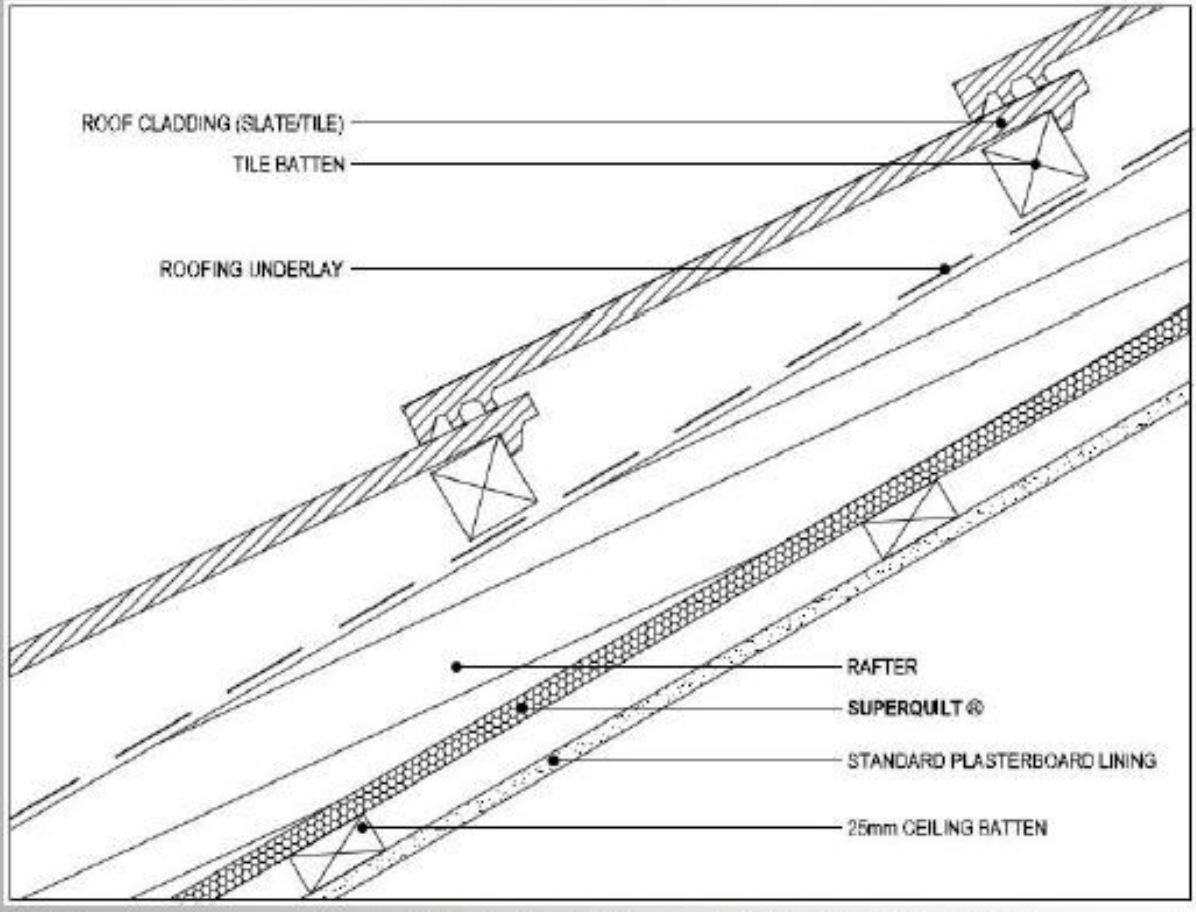
Fix 25mm to 38mm deep battens at right angles to the rafters. For sky-lights see "Skylight Details" in this technical manual.

HEAT FLOW UP R VALUE = 2.7*

The plasterboard is fixed onto the bat-tens in the usual manner.

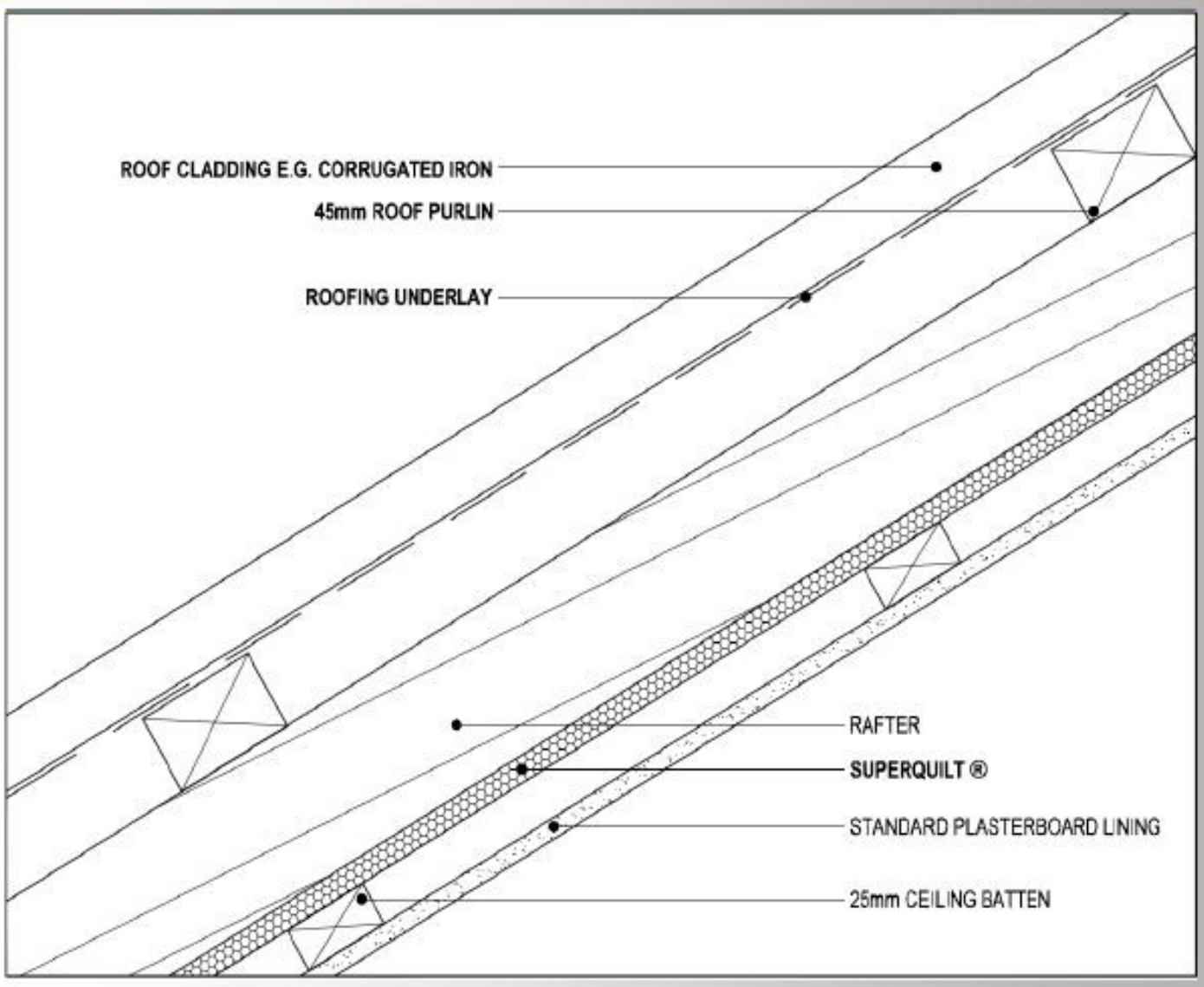
HEAT FLOW DOWN R VALUE = 3.0*

See installation video at:
www.aushomeinsulation.com.au



* Calculations based on assumptions that 140x45 rafter @ 900crs and 25x45 ceiling battens @ 600crs were used. Standard assumptions from AS/NZS 4859.1 were used.

Under Rafter Application—Metal Roof



* Calculations based on assumptions that 140x45 rafters @ 900crs and 25x45 ceiling battens @ 600crs were used. Standard assumptions from AS/NZS 4859.1 were used.

HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 3.0*

Over Rafter Application

Fixing Instructions

Where roof headroom is essential SuperQuilt can be recessed between the rafters, as follows:

A) SuperQuilt is stapled to the top of the first rafter

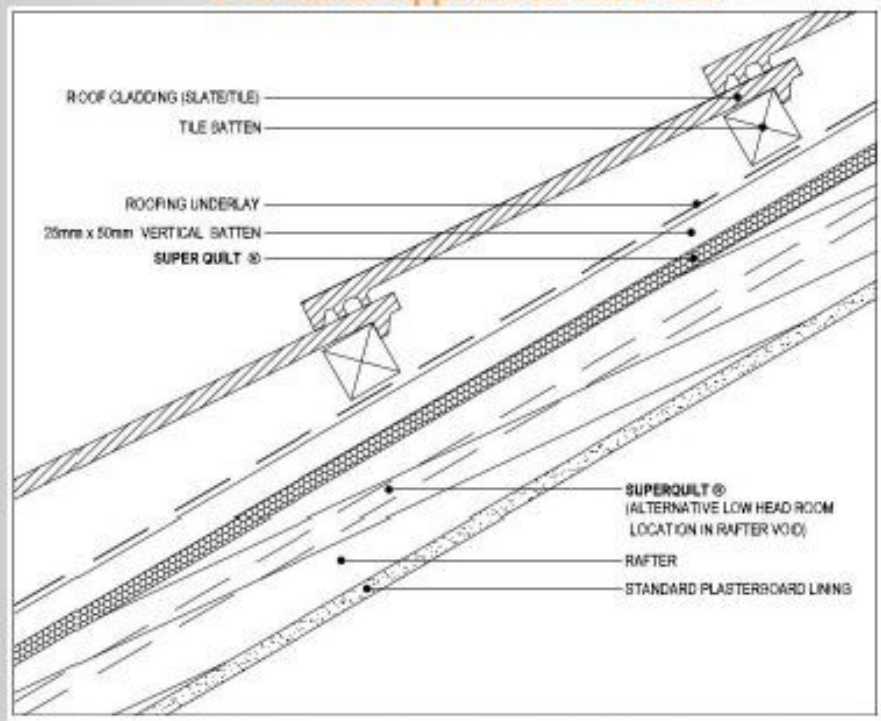
B) SuperQuilt is then recessed into the rafter void min.25mm and fixed with battens or staples

C) The material is then fixed to adjacent rafter, as per instruction B

D) SuperQuilt is then wrapped around the rafter and procedure starts again.

All SuperQuilt joins are to be taped using foil tape and lapped 75mm. See installation video at: www.aushomeinsulation.com.au

Over Rafter Application Tiled Roof

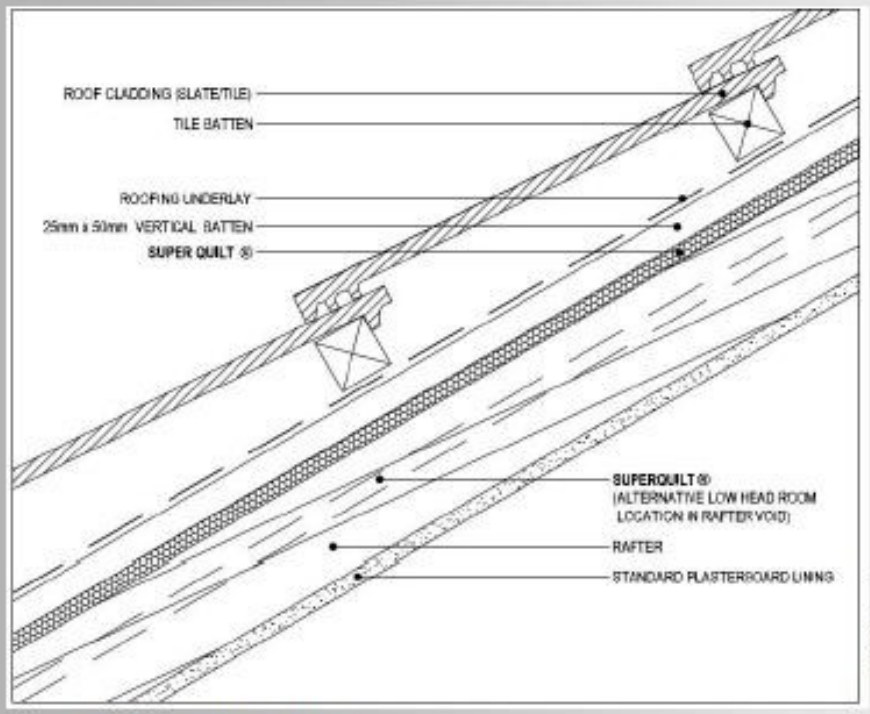


HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 2.9*

*Calculations are based on assumptions that 140x45 rafters @ 900crs and 25x45 battens @ 900crs were used. Standard assumptions from AS/NZS 4859.1 were used.

Over Rafter Application Metal Roof



HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 3.0*

* Calculations are based on assumptions that 140x45 rafters @ 900crs and 70x45 purlins @ 900crs were used. Standard assumptions from AS/NZS 4859.1 were used.

Two Layer Application—Tile Roof

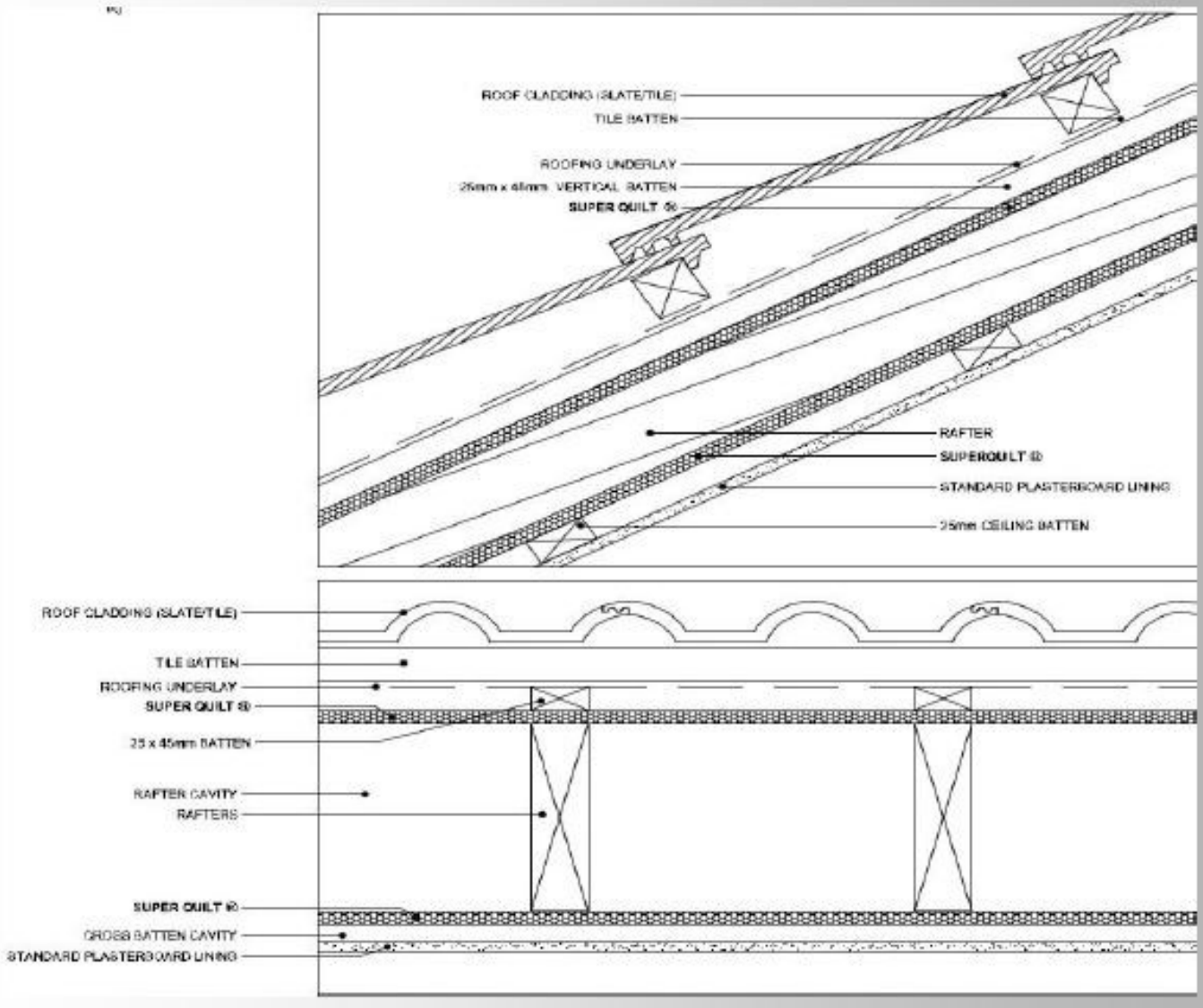
Fixing Instructions

Installation of SuperQuilt for two layer applications should be in accordance with this technical manual and current good building practice.
When installing two layers of SuperQuilt a 50mm air space should be maintained between layers at all times.

See installation video at: www.aushomeinsulation.com.au

HEAT FLOW UP R VALUE = 4.7*

HEAT FLOW DOWN R VALUE = 5.0*

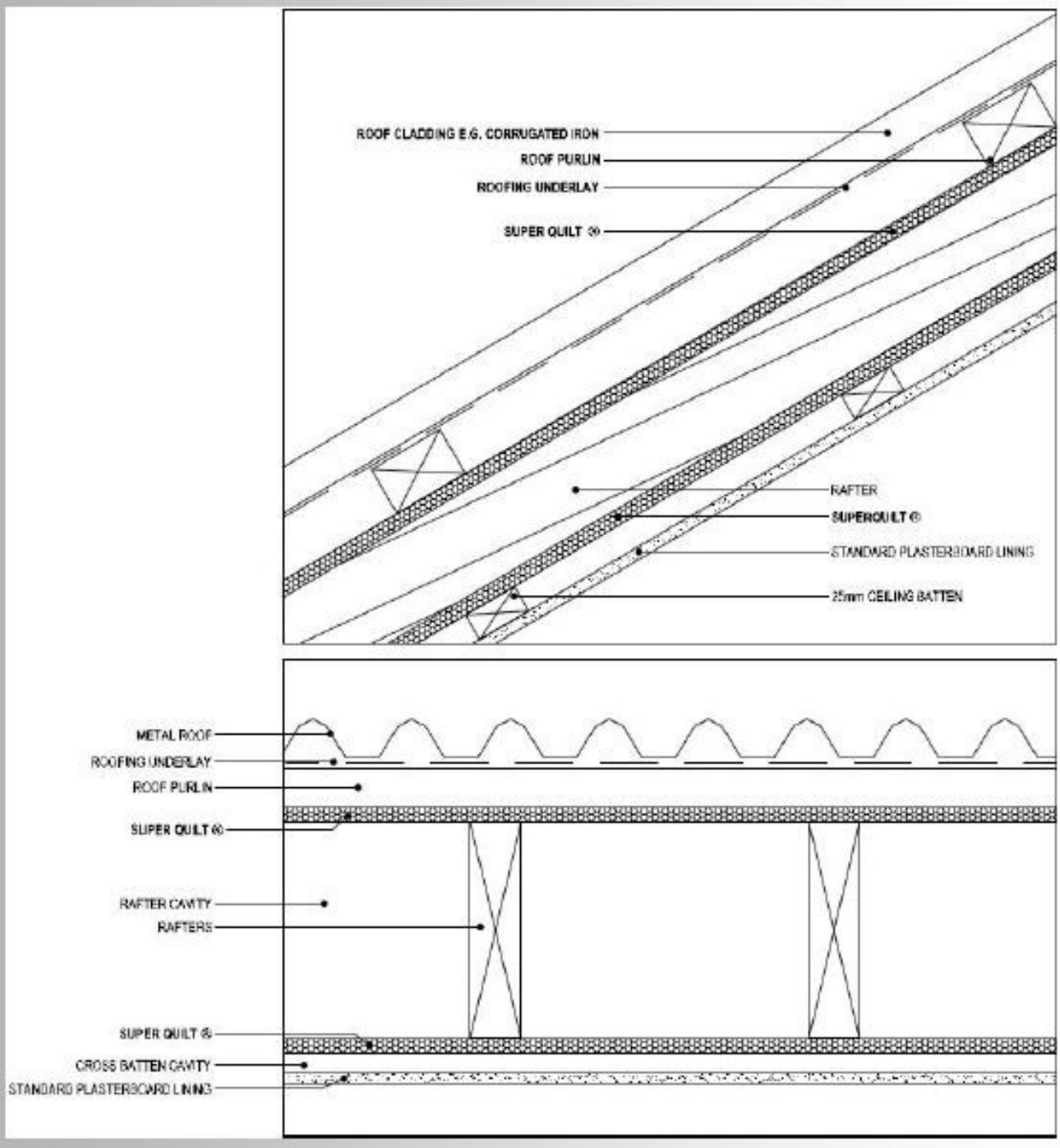


* Calculations based on assumptions that 140x45 rafters @ 900crs and 25x45 ceiling battens @ 600crs were used. Standard assumptions from AS/NZS 4859.1 were used.

Two Layer Application—Metal Roof

HEAT FLOW UP R VALUE = 4.7*

HEAT FLOW DOWN R VALUE = 5.1*

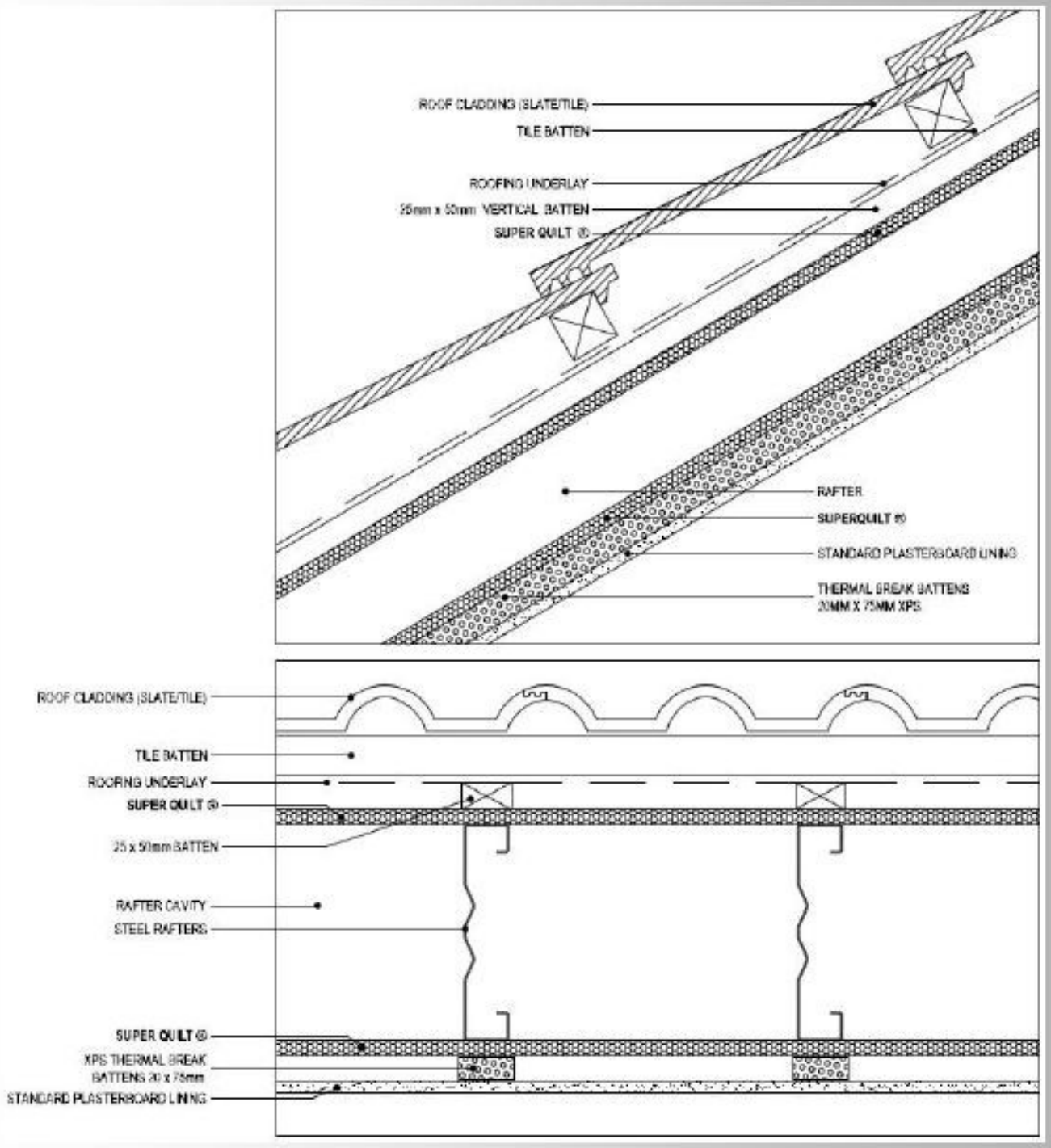


* Calculations are based on the assumptions that 140x45 rafters @ 900crs, 25x45 ceiling battens @ 600crs and 70x45 Purlins @ 900crs were used. Standard assumptions from AS/NZS 4859.1 were used.

Two Layer Application—Tile Roof—Steel Rafters

HEAT FLOW UP R VALUE = 4.6*

HEAT FLOW DOWN R VALUE = 5.0*

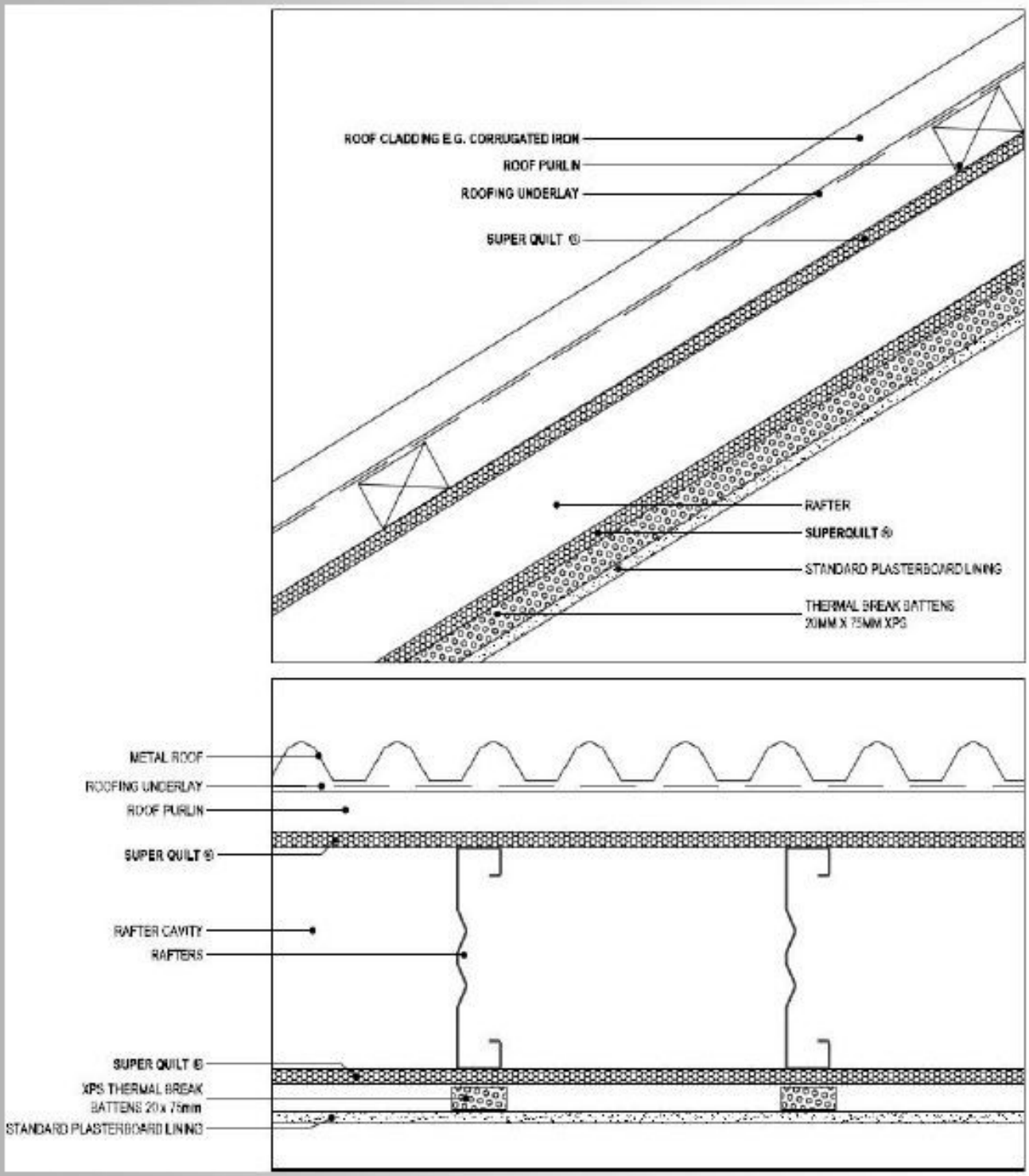


* Calculations based on assumptions that 140x45 rafters @ 900crs, 25x45 ceiling battens @ 600crs and 20mm XPS with an R-Value of 0.8 were used. Standard assumptions from AS/NZS 4859.1 were used.

Two Layer Application—Metal Roof—Steel Rafters

HEAT FLOW UP R VALUE = 4.7*

HEAT FLOW DOWN R VALUE = 5.0*



* Calculations are based on the assumptions that 140x45 rafters @ 900crs, 25x45 ceiling battens @ 600crs and 20mm XPS with an R-Value of 0.8 were used. Standard assumptions from AS/NZS 4859.1 were used.

Recessed Detail

Over Rafter Application

Where roof height is critical SuperQuilt can be recessed between the rafters.
Ensure that there is a 25mm airspace above and below the SuperQuilt at all times.

1. SuperQuilt is stapled to the top of the first rafter
2. SuperQuilt is recessed into the rafter void and fixed with staples or with battens.
3. The material is then fixed to opposite rafter as per instruction 2.
4. SuperQuilt is then wrapped around the rafter and the procedure starts again.

Once all the SuperQuilt is fitted, all joints should be taped using SuperQuilt Foil Tape and lapped 75mm minimum.

A breather membrane is then fitted in accordance with the manufacturers fitting instructions.

The batten and tiles can then be fitted.

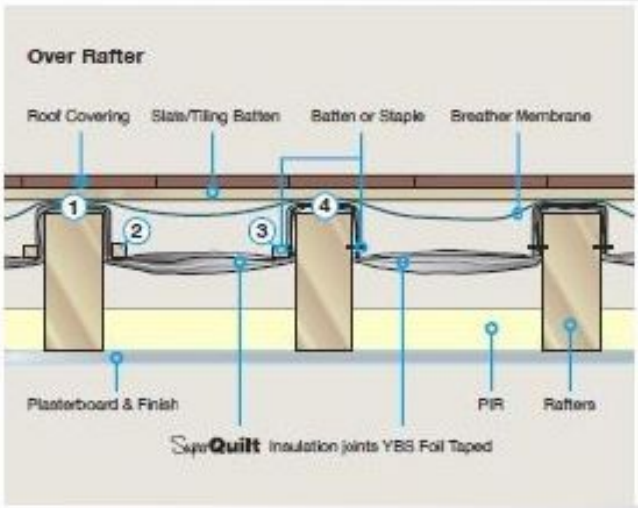
Under Rafter Application

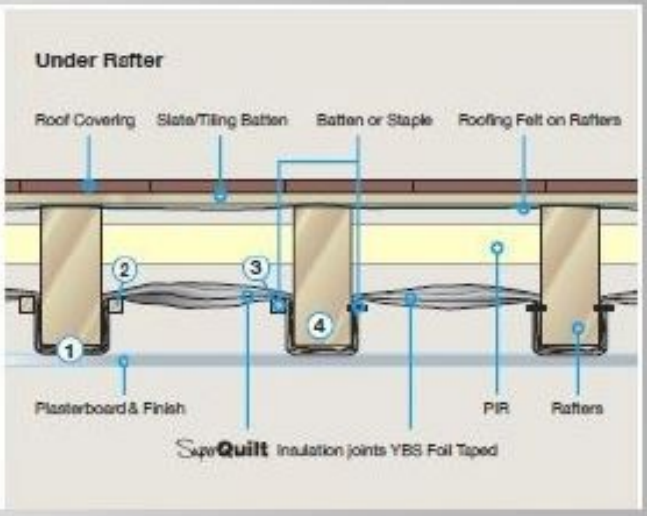
Ensure that there is a 25mm airspace above and below the SuperQuilt at all times.

1. SuperQuilt is stapled to the underside of the first rafter
2. SuperQuilt is recessed into the rafter void and fixed with staples or with battens.
3. The material is then fixed to opposite rafter as per instruction 2.
4. SuperQuilt is then wrapped around the rafter and the procedure starts again.

Once all the SuperQuilt is fitted, all joints should be taped using SuperQuilt Foil Tape.

Plasterboard can then be fixed directly to the underside of the rafters below the SuperQuilt.





Between Purlins Detail—Tile Roof

Fixing Instructions

SuperQuilt is fixed horizontally or vertically and stapled to the underside of the rafters.

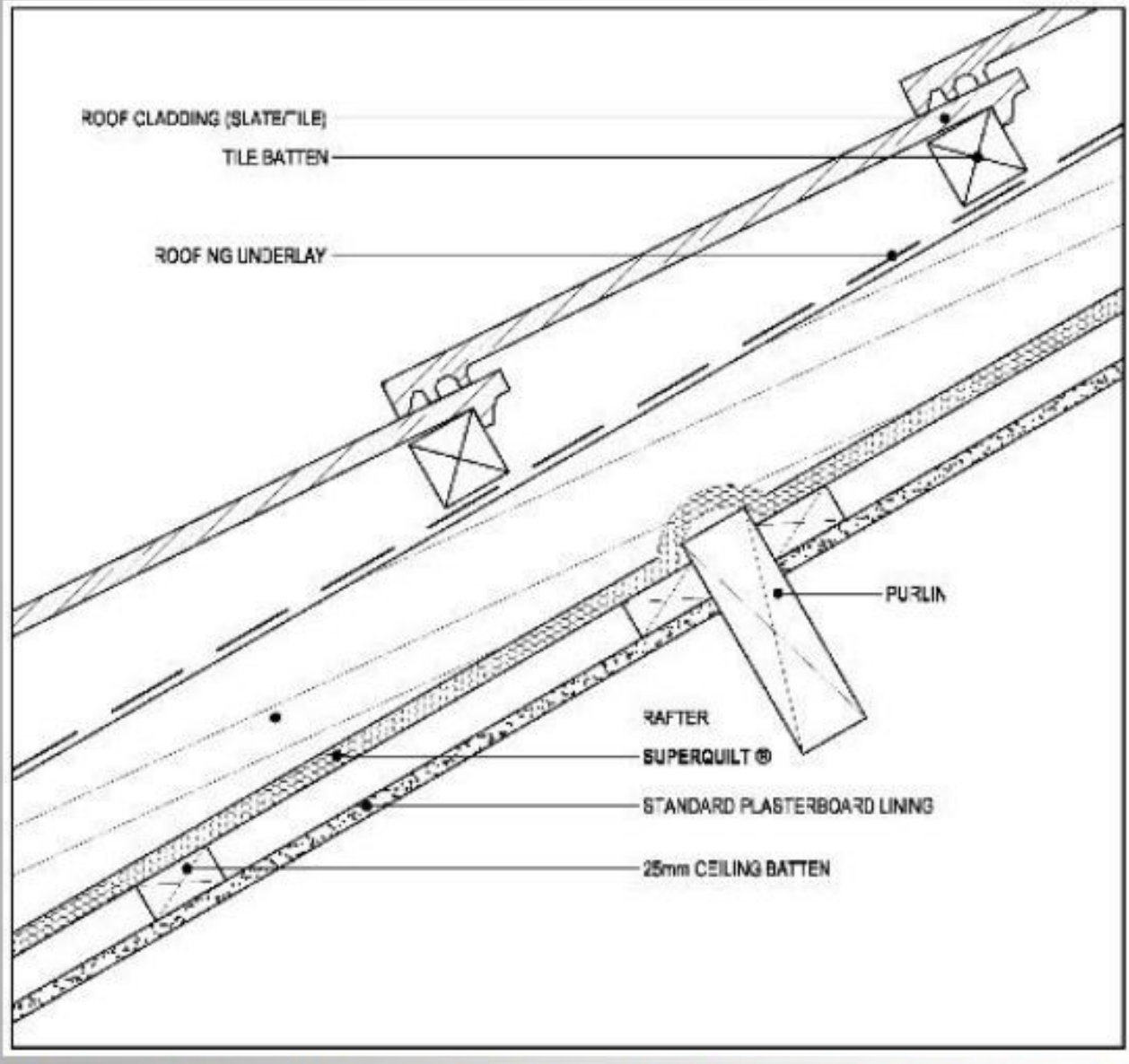
At the purlins the SuperQuilt is turned up and stapled in place.

Perpendicular battens are fixed through the SuperQuilt into the rafters. At the purlins the battens are fixed into the rafters crushing the SuperQuilt tightly against the purlins.

Plasterboard can then be fixed to the battens.

HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 2.9*

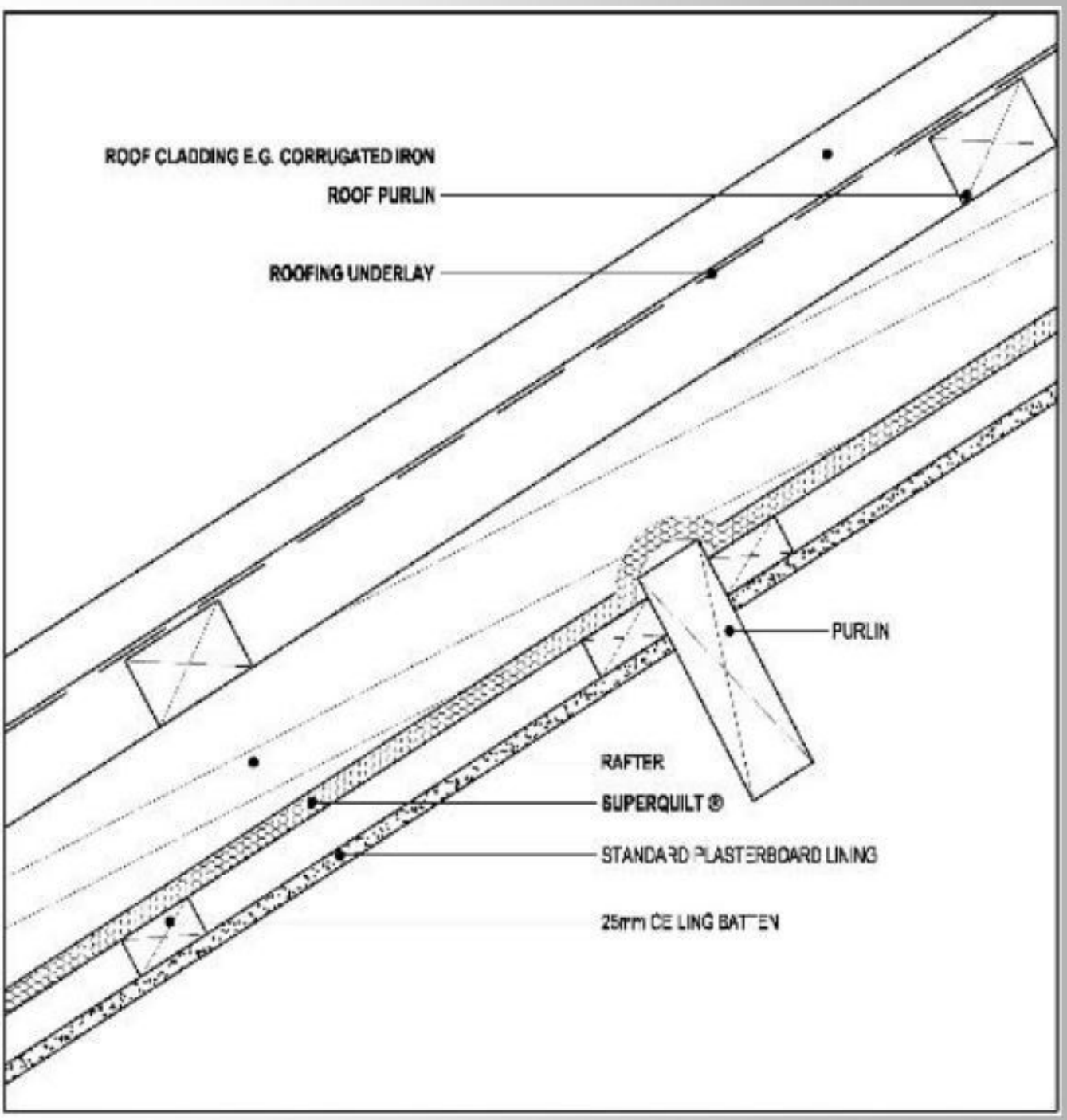


* Calculations are based on assumptions that 140x45 rafters @ 900crs, 45mm wide Under-Purlins @ 1200crs and 3x25x45 ceiling battens between under purlins. Standard assumptions from AS/NZS 4859.1 were used.

Between Purlins Detail—Metal Roof

HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 2.9*



* Calculations are based on assumptions that 140x45 rafters @ 900crs, 45mm wide Under-Purlins @ 1200crs and 3x25x45 ceiling battens between under purlins. Standard assumptions from AS/NZS 4859.1 were used.

Around Purlins Detail—Tile Roof

Fixing Instructions

SuperQuilt is fixed horizontally or vertically and stapled to the underside of the rafters.

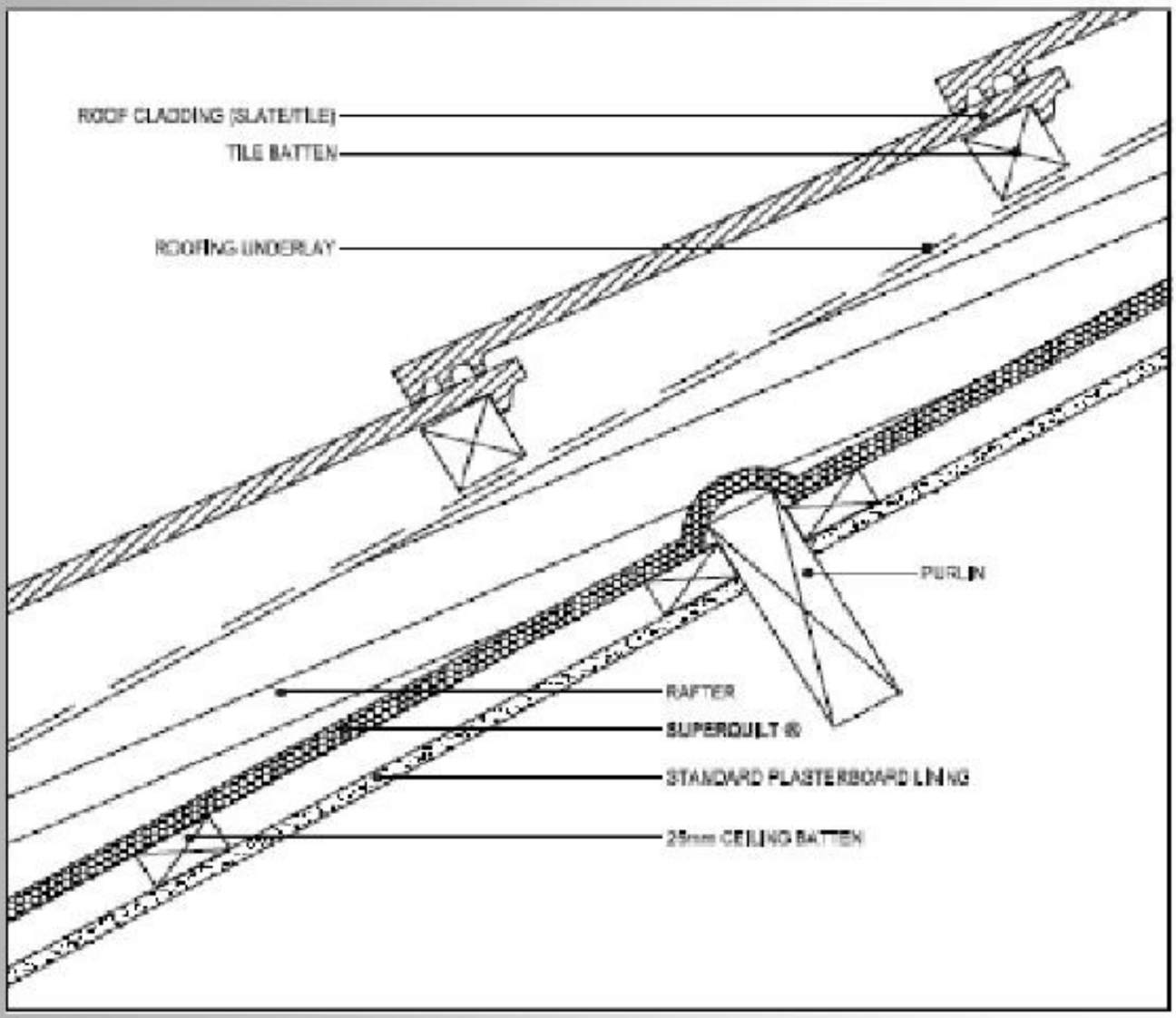
At the purlins the SuperQuilt is cut and pushed behind the purlins then taped to the next piece at the opposite end of the purlin.

Perpendicular battens are fixed through the SuperQuilt into the rafters.

Plasterboard can then be fixed to the battens.

HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 2.9*

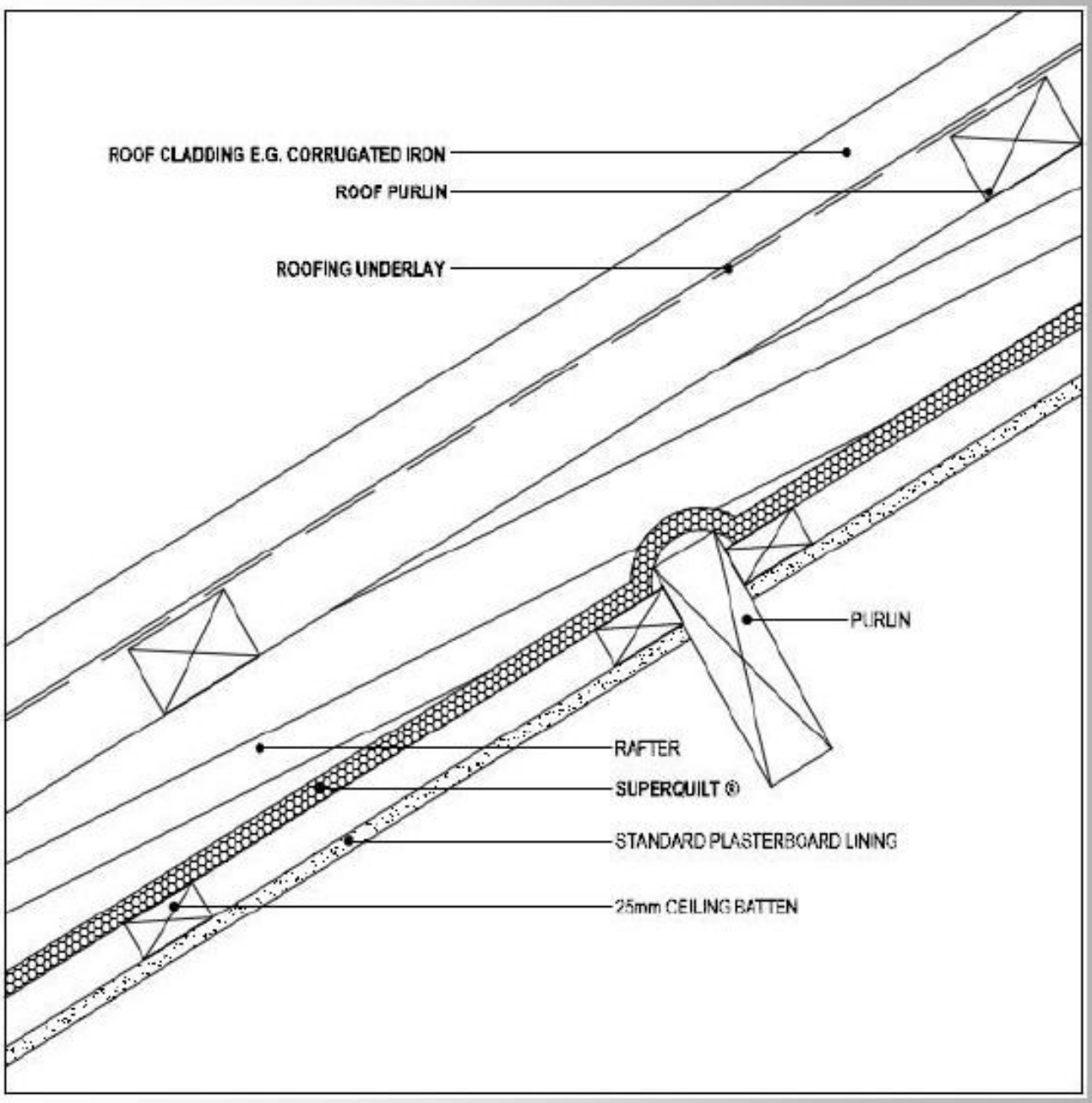


* Calculations are based on the assumptions that 140x45 rafters @ 900crs, 45mm wide Under-Purlins @ 1200crs and 3x25x45 ceiling battens between under purlins were used.

Around Purlins Detail—Metal Roof

HEAT FLOW UP R VALUE = 2.7*

HEAT FLOW DOWN R VALUE = 2.9*

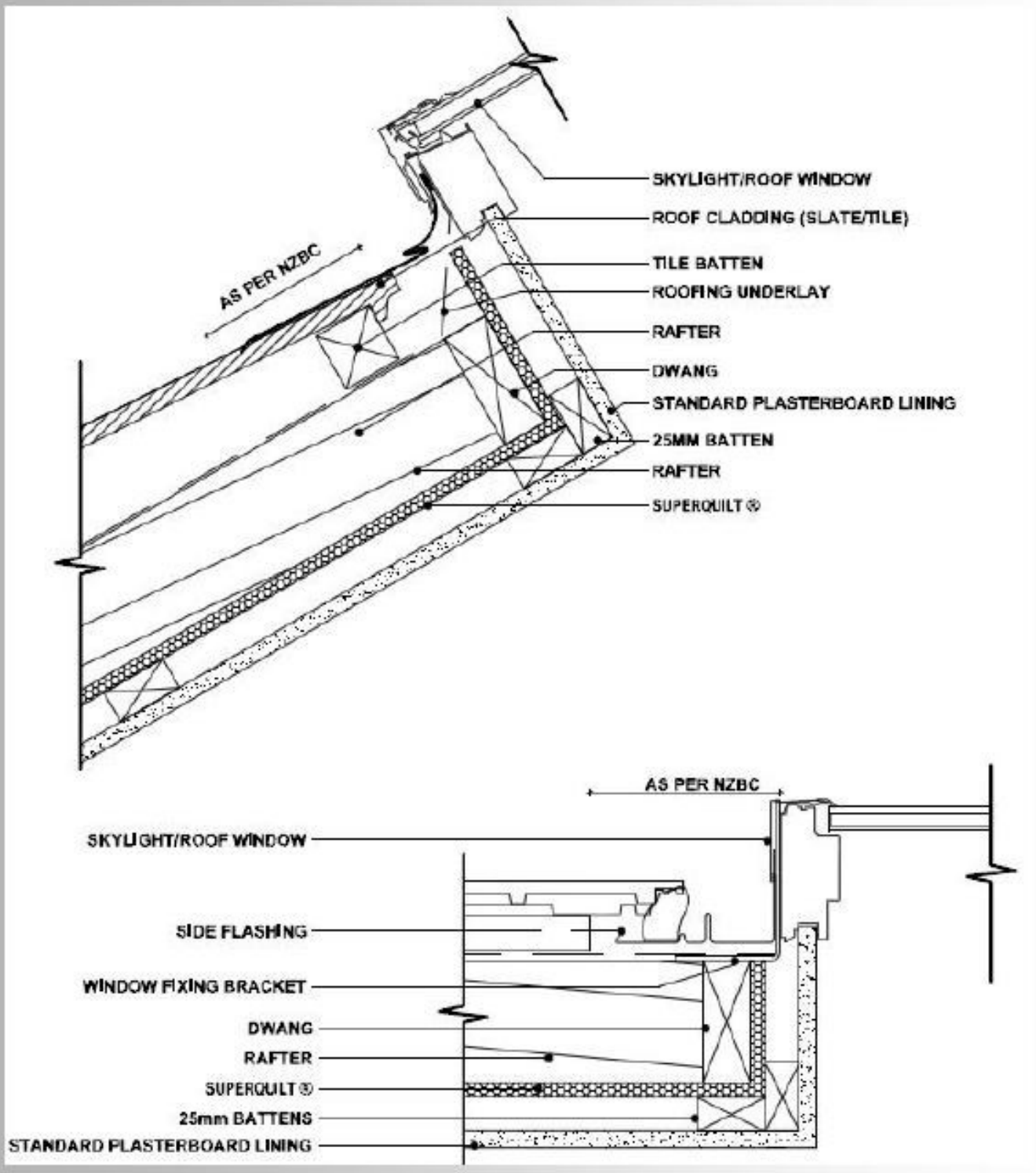


* Calculations are based on the assumptions that 140x45 rafters @ 900crs, 45mm wide Under-Purlins @ 1200crs and 3x25x45 ceiling battens between under purlins. Standard assumptions from AS/NZS 4859.1 were used.

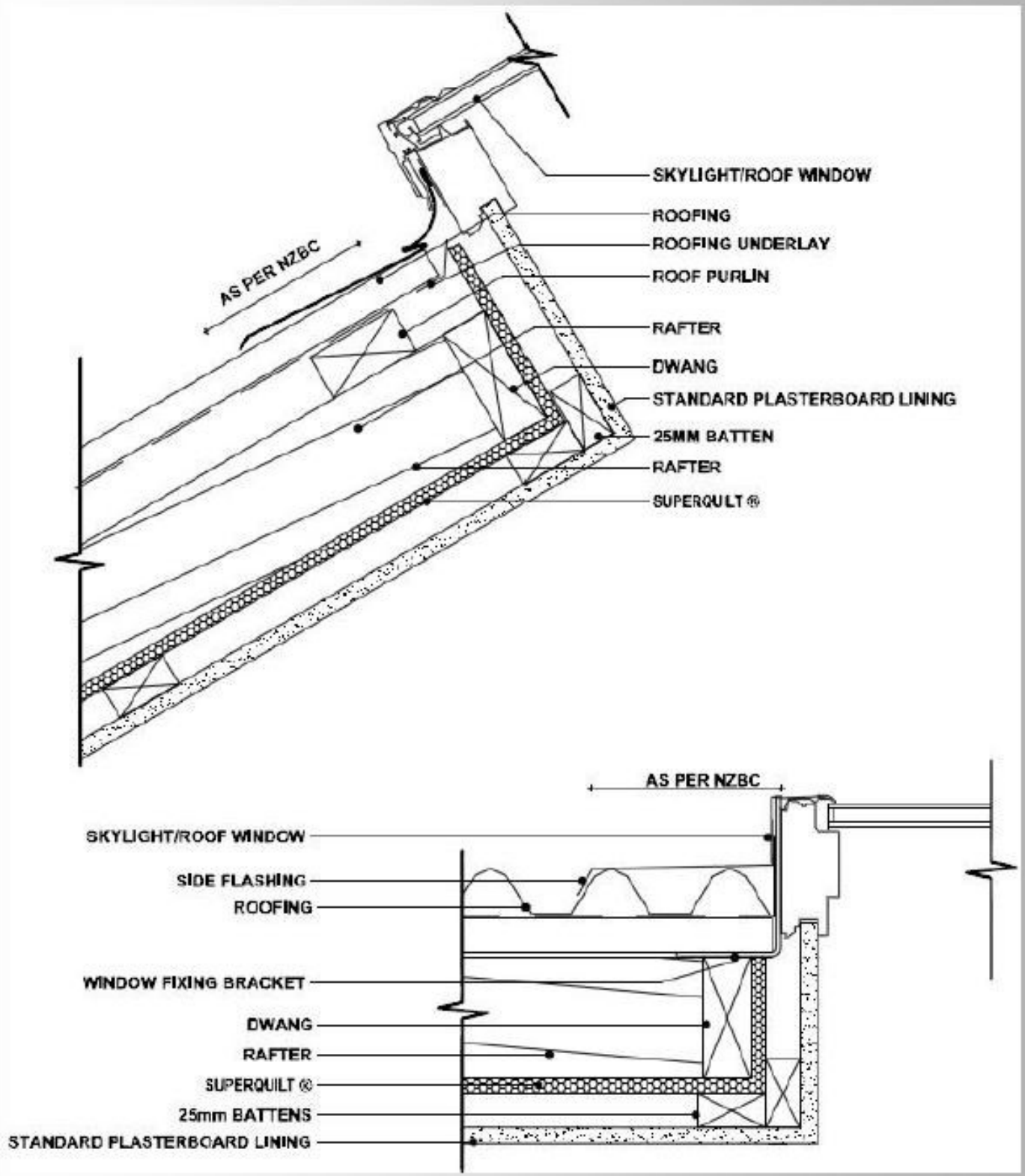
Skylight Details—Tiled Roof

Fixing Instructions

SuperQuilt is fixed above or below rafters as per fixing details and turned up at the vent/wall/rooflight and sealed with SuperQuilt Foil Tape. Battens are placed on the rafters above the SuperQuilt. A breather membrane is fixed above the battens and finished by turning up at the vent/wall/rooflight. The battens are fixed in place. The flashing/collar for the vent/wall/rooflight is fitted following its manufacturers specifications and details.



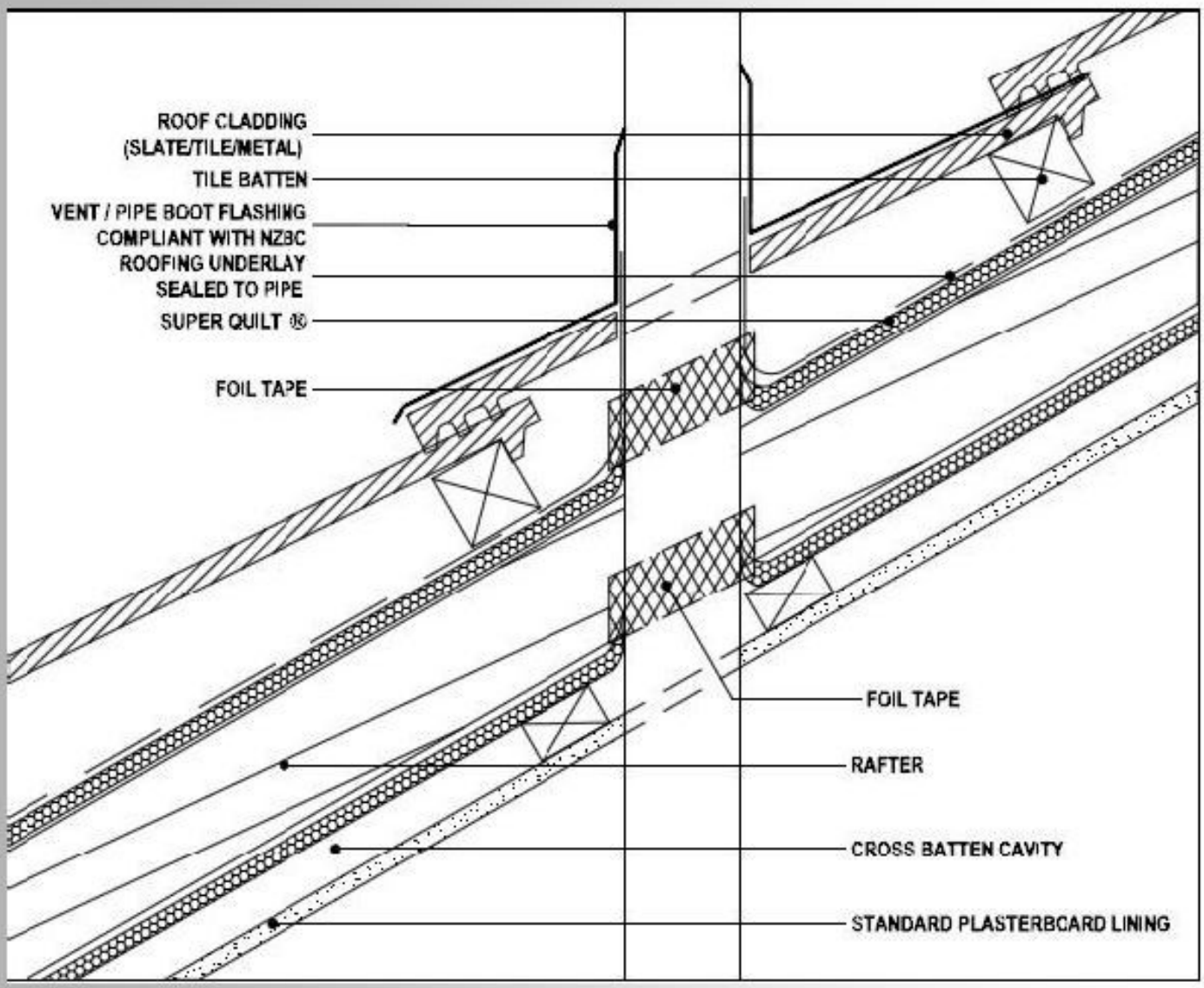
Skylight Details—Metal Roof



Vent Pipe Penetration Detail

Fixing Instructions

SuperQuilt is fixed above the rafters as per fixing details and turned up at the vent and sealed with SuperQuilt Foil Tape.
Self supporting roofing underlay is fixed above the rafters and finished by turning up at the vent and sealing to the vent penetration.
Tile battens are fixed in place and the flashing for the vent is fitted as specified by the roofing manufacturers specifications and details.



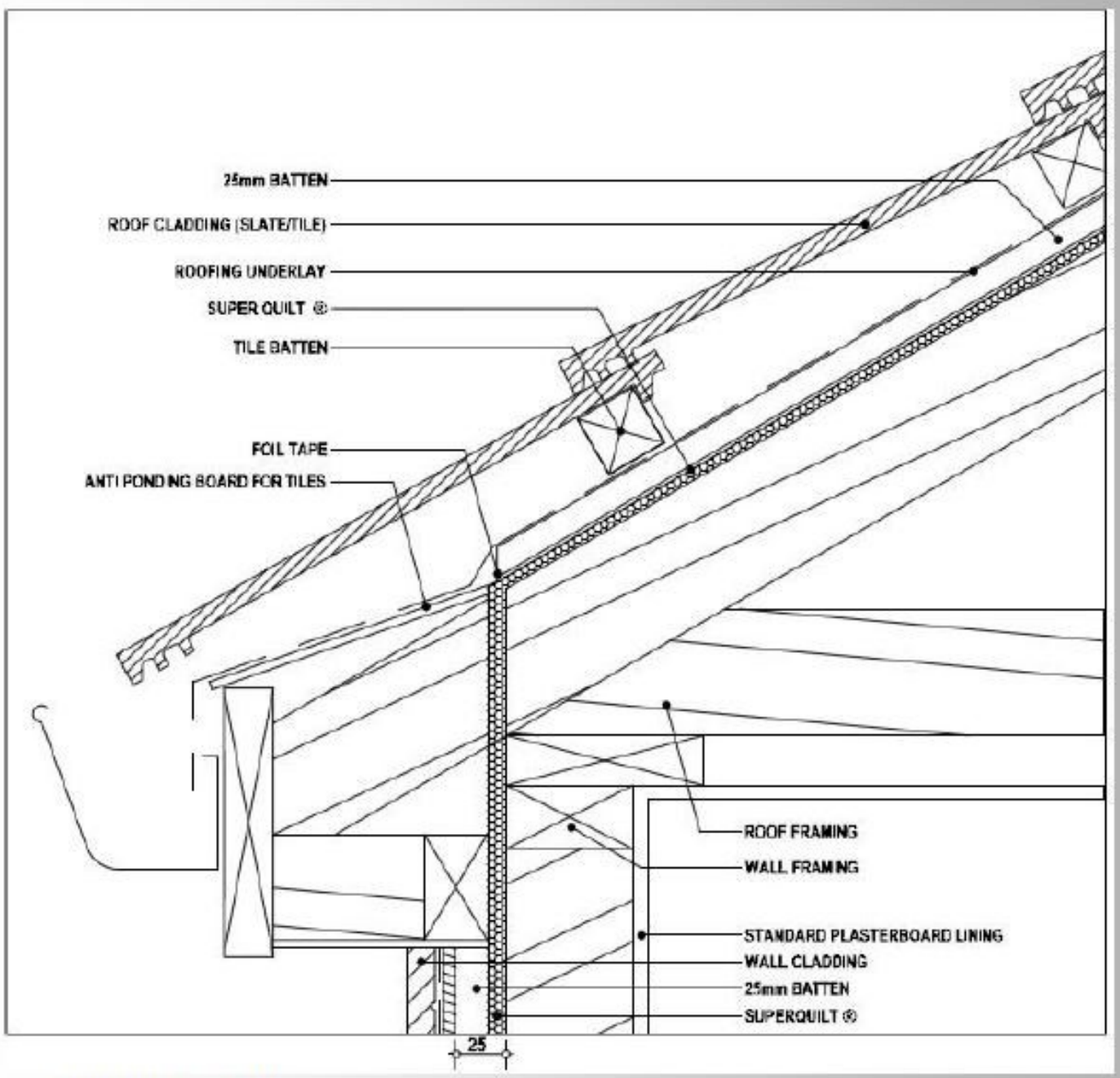
Eave Detail—Tiled Roof

Over Rafter Fixing Application

SuperQuilt is stapled to the rafters.
At the eaves the SuperQuilt is cut and taken down between the rafters to the cavity wall insulation or the wall plate.
The material needs to be sealed with staples and foil tape to the rafters and the cavity wall insulation or wall plate to create an airtight envelope.

Alternative Under Rafter Application

As an alternative SuperQuilt may be installed under the rafters and reduce the need for the 25mm battens.



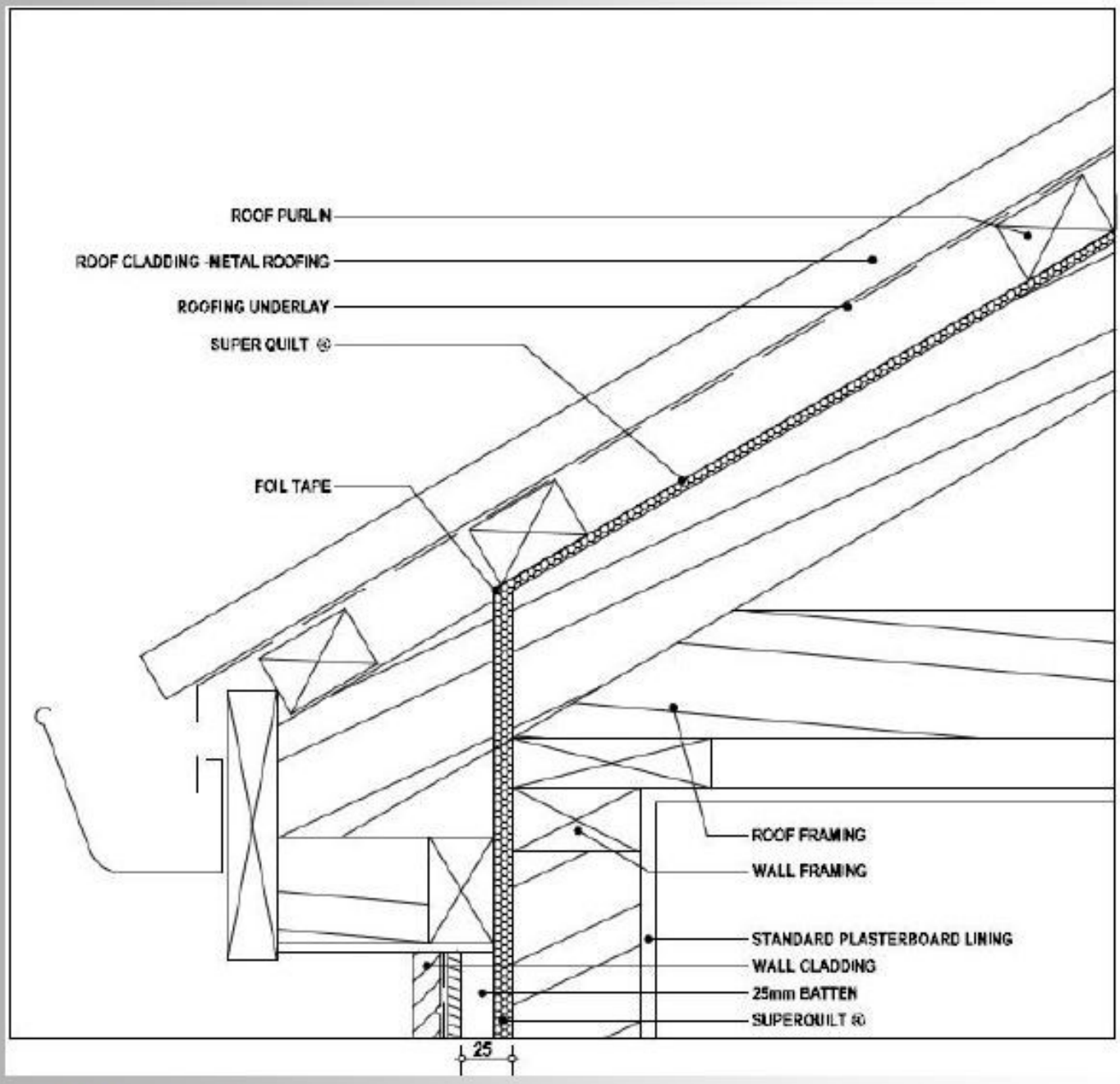
Eave Detail—Metal Roof

Over Rafter Fixing Application

SuperQuilt is stapled to the rafters.
At the eaves the SuperQuilt is cut and taken down between the rafters to the cavity wall insulation or the wall plate.
The material needs to be sealed with staples and taped to the rafters and the cavity wall insulation or wall plate to create an airtight envelope.

Alternative Under Rafter Application

As an alternative SuperQuilt may be installed under the rafters and reduce the need for the 25mm battens.



SuperQuilt

TECHNICAL PROPERTIES

PRODUCT DESCRIPTION		
19 Components		
Thickness	40mm approx.	
Weight	800g/m²	
MECHANICAL PROPERTIES	**VALUE**	**REFERENCE STANDARD**
Thermal performance		
Core	R value = 1.5	DIN 52611-1
Core + 2x25mm non-vented air-spaces	R value = 2.5	DIN 52611-1
Water vapour resistance	1569MNs/g	BS EN 12572
Emission coefficients of surfaces	0.03	Fraunhofer Institut
Tensile strength	142KPA	DIN EN 1608
PACKAGING	**15m²**	
Width	1.5m	
Length	10m	
Weight	12.5kg	

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Richard: 0429 331 114 | Office: 0499 334 417
info@aushomeinsulation.com.au

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Office: 0499 334 417
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