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# Trelleborg Waterproofing –Solutions Securing Values

Trelleborg Waterproofing offers water and weather protection systems for increased service life of buildings and other types of construction. We are part of the global industrial Trelleborg group, which is based on leading polymer technology and unique applications know-how in sealing, damping and protection for demanding industrial environments throughout the world.



Our vision is to offer innovative air-, sound- and water resistant products and systems, making it possible to save on energy and environment, as well as increasing the service life of buildings and other constructions.

Our core values guide us in making decisions and conducting business:

**Customer focus** All of our decisions are taken with the customer in focus. Working in partnership, we aim to add value for our customers, as well as for Trelleborg Waterproofing.

**Performance** "Performance" is not only about the results we achieve but how we achieve them.

**Innovation** We think differently and strive to apply innovative thinking and creativity to everything we do.

**Responsibility** We have a social responsibility and we carefully protect the positive image of our company.

Our customers should always feel that our products as well as our commitment correspond to their needs and expectations. This is achieved through quality driven team work where each single activity in combination with all other activities in our organization results in satisfied and returning customers.



**Trelleborg Engineered Systems** is a leading global supplier of engineered solutions that focus on sealing, protection and safety of investments, processes and individuals in extremely demanding environments.

Trelleborg Engineered Systems comprises four business segments:

**Industry:** precision components and systems in polymer coated materials, such as hoses, elastomer laminates and polymer-coated fabrics. Other special products, such as molded components to many different industry segments, printing blankets for the graphics industry, and industrial antivibration applications.

**Infrastructure Construction:** specialized solutions for infrastructure projects, for example, fender systems for harbors, tunnel seals, dredging systems, pipe seals, acoustic and vibration damping solutions for railways, bridges and buildings, and protective suits and diving suits.

**Offshore:** niche oriented products for offshore oil and gas extraction.

**Building:** Polymer and bitumen based construction products for sealing and waterproofing applications for industry and consumers.

## Protection against the elements

We supply complete systems including all component parts. Our waterproof roofing membranes comprise a range that covers virtually all needs. The materials are well proven and comply with strict environmental criteria.

### **High-tech membranes with exceptionally long service life**

It is not enough for a waterproof membrane to stay watertight, it must also be capable of withstanding frost, snow, heat and strong winds without physical or chemical changes that could shorten its intended service life. All our membranes satisfy statutory requirements and have been tested under the harshest imaginable conditions.

Every year we spend large amounts of money on research and development of



both materials and system solutions. Trelleborg membranes are the result of intensive development, often at basic research level.

They now last longer than ever; studies show that we have materials that can retain their properties for 40–50 years at a total cost which is often substantially lower than that of alternative types of roofing. That, and their minimal maintenance demand,

#### **Trelleborg Waterproofing's commitment:**

- + Scientifically designed waterproofing systems
- + Installed by trained contractors
- + Quality control plan and quality assurance checklist
- + Comprehensive warranties

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= Dependable, long-lasting waterproofing with minimum maintenance demand

## Protection against the elements

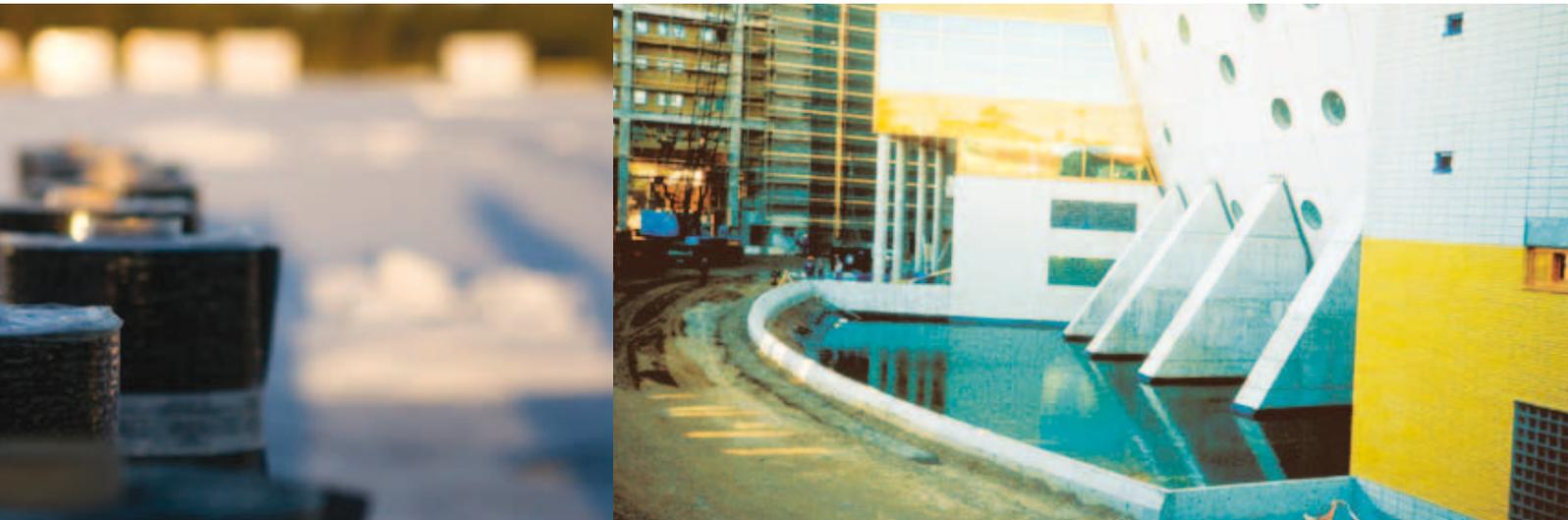
make our membranes very attractive and economical options for the user.

### **Single-ply principle and ballasted roofs**

Our waterproofing systems are based on the single-ply principle, mechanically fastened or ballasted. They are much more dependable and durable than traditional roofing systems consisting of two or more glued layers.

### **Not just roofs**

In addition to roofing, Trelleborg Waterproofing supplies a wide range of membranes and systems for waterproofing and containment. We have systems for facades, tanking, secondary containment, reservoirs and landfills.



### **Trained contractors**

A waterproofing system is no better than its weakest link, and experience has shown that damage and leaks are usually caused by faulty installation. That is why we provide all our contractors with training on our waterproofing systems: product knowledge, application methods and quality assurance.

### **A safe choice**

Buyers benefit from an extensive quality control plan that covers the whole process, from raw materials and manufacturing until the waterproof membrane is in place, so you can be sure that it will perform its function for many years to come.

Our warranty assurances and safety packages are among the most comprehensive on the market.

# Contact Details

## Trelleborg Waterproofing AB

### Company Information

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SE-331 35 Värnamo  
Sweden

Invoicing address: Box 1088  
SE-231 81 Trelleborg  
Sweden

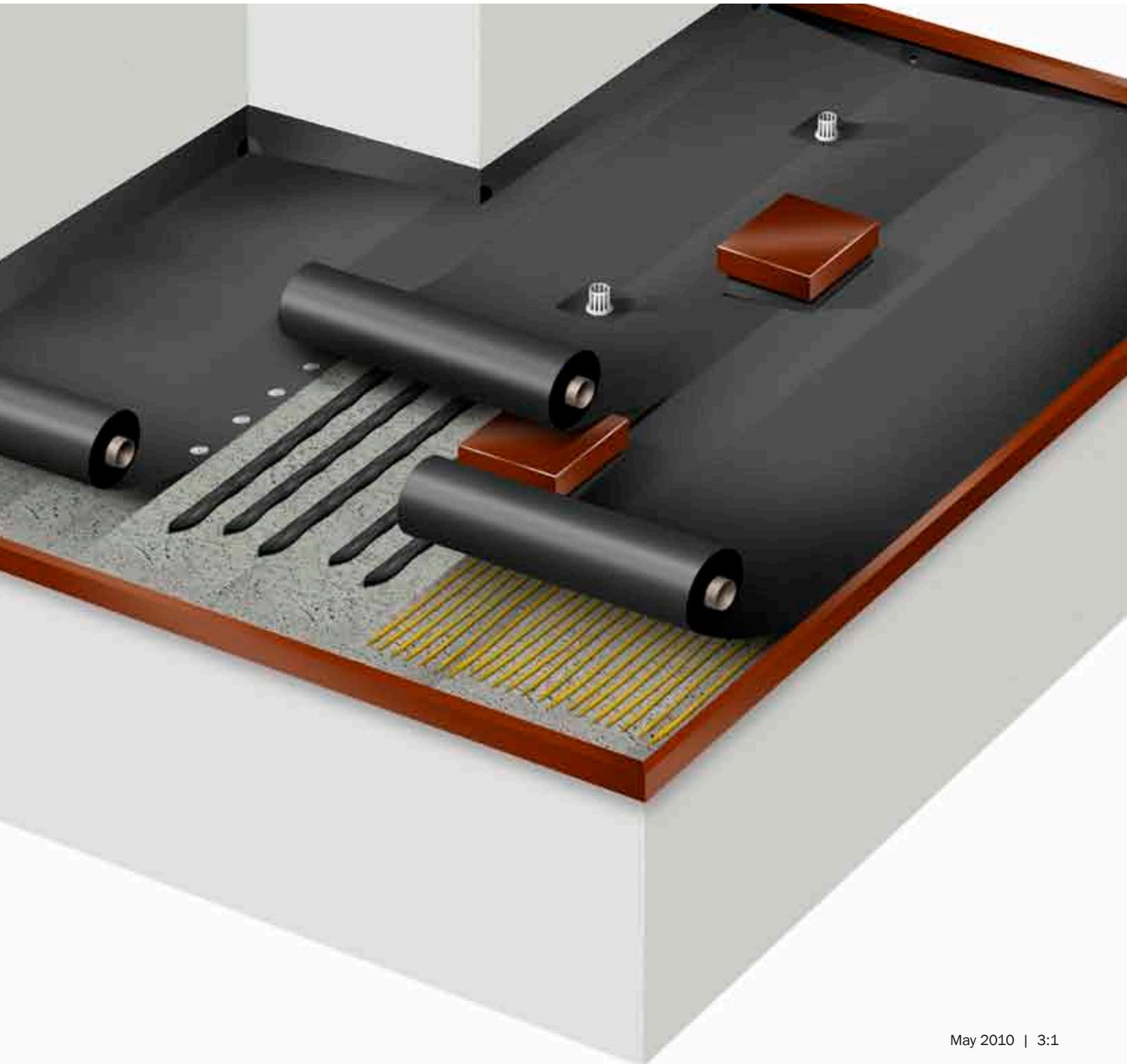
GPS coordinate: Lat: N 57° 12' 10.45"  
Long: E 14° 1' 57.50"

VAT No: SE556739698001  
Registered office: Höganäs  
Org. No: 556739-6980  
Account: SWIFT  
Swift address: ESSESESS  
For domestic payment: Bankgiro 272-9481  
IBAN: SE8050000000057461014900

General Conditions of Delivery: [www.trelleborg.com/waterproofing](http://www.trelleborg.com/waterproofing)

# Superseal Roofing System

## Elastomeric Single Ply Membrane



# Superseal Roofing System

## With Thermobond heat splicing technology

Superseal is a unique, fleece-backed heat seamable elastomeric membrane. The EPDM membrane design is ideal for mechanical attachment or adhering to any suitable substrate, with or without heat insulation.

### Superseal Roofing System provides

- Superseal EPDM membrane – a flexible and elastic rubber membrane that is chemically and thermally stable with exceptional weather resistance. No change in strength or elasticity between -30°C and +120°C.
- Thermobond hot air splicing giving a seam that has the same elasticity and flexibility as the membrane itself.
- Fleece-backed membrane giving a smooth, wrinkle-free installation. No thermal movements or tensions in the roof membrane.
- Light weight per installed square meter.
- Fast and reliable installation and no open flames on the roof. Only hot air is necessary for all splicing and detail work.
- A full range of components and details for a complete water-tight, waterproofing system.
- A roll width of 1,74 meter (alternative 1,34 meter) ensures fast installation.

Superseal is installed solely by authorized contractors who take responsibility for the integrity and performance of the finished roof and who work with full access to Trelleborg Waterproofing AB's know how and technical support.

### Sustainable future

Superseal have minimal impact on the environment by efficient utilization of resources and exceptional durability. The product does not contain any heavy metals, chlorine, halogens or softeners and nothing leaves the product during the service life.

### Superseal Roofing System

Superseal are a complete system with solution to any detail on the roof by the Thermobond welding technique. The system include pipe boots, corners, drains, Thermobond clad metal and much more.

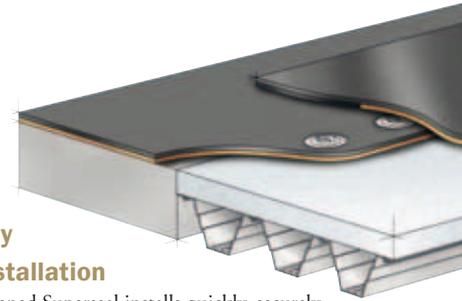
### Certificate and approvals

CE marked according to EN 13956 "Plastic and Rubber Sheet for Roof Waterproofing",  
SP - Technical Research Institute of Sweden  
Fire classification Brooft1, Brooft2, SP - Technical Research Institute of Sweden.  
BBA Certificate 92/2799, British Board of Agreement.  
ATG Certificate 04/2600, BUtgb, Belgien.



# Superseal Roofing System

With Thermobond heat splicing technology



## Mechanically

### Attached Installation

Mechanically fastened Superseal installs quickly, securely and effectively on any suitable substrate, like TRP metal decking with insulation, timber decking or light weight concrete. Soft insulations, like mineral wool, require telescopic fasteners. The membrane is laid parallel transverse to the slope of the roof; overlapping 120 mm. Splicing is done with hot air automatic machine, which can be made at freezing temperatures or damp weather.

Mechanically secured roofs always require control of pullout resistance of fasteners. Thanks to the fleece backing the membrane can be bonded to the substrate at roof perimeter, thus limiting the effects of wind loads.



## Cold Adhered Installation

The membrane is partially bonded to the substrate with our PUR adhesive type 3200. Beads of adhesive are applied over approximately 25 % of the roof surface. Superseal membrane is laid parallel, transverse to the roof slope with 50 mm overlapping. Seams are heat spliced with a hot air splicing machine. Suitable substrates are bitumen felt, timber, concrete or light weight concrete. The installation requires a dry substrate and a minimum temperature of +5°C.



## Bitumen Bonded Installation

Bitumen bonded Superseal can be installed on substrates of bitumen felt, concrete or light weight concrete. The membrane that is laid parallel transverse to the slope of the roof, overlapping 5 cm, is partially adhered over approximately 50 % of the surface in SBS modified bonding bitumen. The bonding bitumen is heated to 170-190°C in a gas heated hot bitumen kettle. Also traditional oxidized bitumen can be used on substrates that are stable and without structural or thermal movements. The installation requires a dry, clean substrate and good weather conditions.

# Product Specification

## Superseal ST

Superseal ST is a fleece reinforced roofing membrane for use for exposed roofs either mechanically attached or adhered to substrate with PUR-adhesive or bonding bitumen. The product has external fire performance classification BroofT1 and BroofT2.

All seaming is performed with hot air enabled by patented Thermobond technology.



### Technical data

Weight 2.1 mm: 1.6 kg/m<sup>2</sup>  
2.25 mm: 1.7 kg/m<sup>2</sup>

Thickness (mm)	Width (m)	Length (m)	Packaging (rolls/pallet)	Article number
2.1	1.74	20	15	5330472
2.1	1.34	20	15	53304324
2.25	1.74	20	15	5330473
2.25	1.34	20	15	53304334

### Physical properties

Characteristic	Test method	Unit	Requirement	Typical value
Tensile strength	EN 12311-2 (A)	N/50mm	400	450
Elongation at break	EN 12311-2 (A)	%	300	325
Tear resistance	EN 12310-2	N	150	190
Dimensional stability	EN 1107-2	%	0.5	0.3
Foldability at low temp.	EN 495-5	°C	- 40	-60
External fire performance	EN 13501-5	Classification	BroofT1, BroofT2	Pass

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Approvals, Certificates & Specifications

CE EN 13956. ATG approval. More information available upon request.



# Product Specification

## Superseal FRT

Superseal FRT is a fleece reinforced roofing membrane for use for exposed roofs either mechanically attached or adhered to substrate with PUR-adhesive or bonding bitumen. The product has external fire performance classification BroofT2.

All seaming is performed with hot air enabled by patented Thermobond technology.



### Technical data

Weight 2.1 mm: 1.6 kg/m<sup>2</sup>

Thickness (mm)	Width (m)	Length (m)	Packaging (rolls/pallet)	Article number
2.1	1.74	20	15	5140472

### Physical properties

Characteristic	Test method	Unit	Requirement	Typical value
Tensile strength	EN 12311-2 (A)	N/50mm	400	450
Elongation at break	EN 12311-2 (A)	%	300	360
Tear resistance	EN 12310-2	N	150	180
Dimensional stability	EN 1107-2	%	0.5	0.3
Foldability at low temp.	EN 495-5	°C	- 40	-60
External fire performance	EN 13501-5	Classification	BroofT2	Pass

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Approvals, Certificates & Specifications

CE EN 13956. BBA approval. More information available upon request.



# Product Specification

## Superseal T

Superseal T is a fleece reinforced roofing membrane for exposed roofs either mechanically attached or adhered to substrate with PUR-adhesive or bonding bitumen. It is also an alternative to Elastoseal membrane for ballasted roofs. The product has external fire performance classification FroofT in exposed installations.

All seaming is performed with hot air enabled by patented Thermobond technology.



### Technical data

Weight 2.1 mm: 1.6 kg/m<sup>2</sup>

Thickness (mm)	Width (m)	Length (m)	Packaging (rolls/pallet)	Article number
2.1	1.74	20	15	5930472

### Physical properties

Characteristic	Test method	Unit	Requirement	Typical value
Tensile strength	EN 12311-2 (A)	N/50mm	400	450
Elongation at break	EN 12311-2 (A)	%	300	350
Tear resistance	EN 12310-2	N	150	200
Dimensional stability	EN 1107-2	%	0.5	0.3
Foldability at low temp.	EN 495-5	°C	- 40	-60
External fire performance	EN 13501-5	Classification	FroofT	Not classified

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Approvals, Certificates & Specifications

CE EN 13956. More information available upon request.



# Product Specification

## Thermobond R Splice Strip

The Thermobond R (Reinforced) splice strip is used for making connections between membrane and for detail works like flashings and upstands. The product is built up by a top layer of EPDM and a bottom layer of Thermobond. The recommended width for connections membrane to membrane is 150 mm.



### Technical data

Reinforcement: Scrim of Polyester

Width (m)	Thickness (mm)	Length (m)	Weight (kg/roll)	Max roll/pallet	Article number
150	1.5	20	5.9	15x8	5320202
300	1.5	20	11.7	15x4	5320203
450	1.5	20	17.6	15x2	5320204
600	1.5	20	23.4	15x2	5320206
900	1.5	20	35.1	15x1	5320209

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Thermobond Splice Strip

The Thermobond splice strip is used for making round shaped details like pipe boots or outlets. The product is built up by a top layer of EPDM and a bottom layer of Thermobond that can be melted for splicing.



### Technical data

Reinforcement: None

Width (m)	Thickness (mm)	Length (m)	Weight (kg/roll)	Max roll/pallet	Article number
150	1.5	20	5.9	15x8	5350002
200	1.5	20	7.8	15x6	53500021
450	1.5	20	17.6	15x2	5350004
600	1.5	20	23.4	15x2	5350005
900	1.5	20	35.1	15x1	5350006

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## TPE 100 Flashing

Homogenous Thermobond flashing for making 3-dimensional details like site build corners or irregulars shaped details during roof installations. Can also be used for trouble-shooting and repairs.



### Technical data

Reinforcement: None

Width (m)	Thickness (mm)	Length (m)	Weight (kg/roll)	Max roll/pallet	Article number
150	2.0	10	4.3	24x8	5340002
300	2.0	10	8.7	24x4	5340003
450	2.0	10	13.0	24x2	5340004
600	2.0	10	17.3	24x2	5340006

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Thermobond Corner

Thermobond corners are used for covering inside/outside corners in combination with Thermobond R splice strip. The corners are spliced with hot air.



### Technical data

Product	Thickness (mm)	Size (mm)	Package (pcs/box)	Article number
Inside corner	2.5	H:100, W:225	40	5350022
Outside corner	2.5	H:100, W:100	40	5350023

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Thermobond Pipe Boot

Thermobond pipe boots are used for covering of pipe penetrations. The product has a flange for seaming to the membrane with hot air. Choose open pipe boot when the circumstances don't allow the pipe boot to be pulled over the pipe from the top.



### Technical data

Product	Diameter (mm)	Height (mm)	Flange (mm)	Article number
Thermobond pipe boot	35	250	300x300	5360035
	50	250	300x300	5360050
	70	250	300x300	5360070
	90	250	300x300	5360090
	100	250	300x300	5360100
	125	250	400x400	5360125
	150	250	400x400	5360150
Thermobond pipe boot - open	Diameter (mm)	Height (mm)	Flange (mm)	Article number
Thermobond pipe boot - open	50	250	300x300	5370050
	70	250	300x300	5370070
	90	250	300x300	5370090
	100	250	300x300	5370100
	125	250	400x400	5370125
	150	250	400x400	5370150

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Thermobond Clad Metal

Thermobond Clad Metal is used for perimeter profiles and can be cut and folded like ordinary galvanized steel sheets. The steel is galvanized and 0.6 mm thick laminated with a 0.3 mm Thermobond layer which makes it possible to weld other Thermobond based accessories.



### Technical data

Width (m)	Length (m)	Thickness (mm)	Weight (kg/m <sup>2</sup> )	Package (pcs/pallet)	Article number
1	2	0.9	4.6	50	5599601

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Thermobond Hot Melt Sealant

Thermobond hot melt sealant is used to level differences in height at splice areas at T-joints and Cross-joints.

### Technical data

Diameter (mm)	Roll length (m)	Article number
4	30	5540040



### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Drain PE

Roof drain equipped with a collar of Thermobond that makes it heat spli- ceable to the membrane. The drain can be used horizontally as overflow. The pipe is made of polyethylene.



### Technical data

ø, pipe (mm)	Length (mm)	Collar (mm)	Package (pcs/carton)	Article number
63	380	300x300	10	5501211
75	380	300x300	10	5501212
90	380	300x300	8	5501213
110	380	400x400	6	5501214
125	380	400x400	4	5501215

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seam- ing. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Drain PC

Roof drain equipped with a 500x500 mm collar of Thermobond flange that makes it heat spliceable to the membrane. The pipe is 0.8 mm thick and made of Stainless Steel.



### Technical data

ø, pipe (mm)	Length (mm)	Collar (mm)	Flow rate (L/sec)	Package (pcs/carton)	Article number
60	300	500x500	1.6	5	5501195
90	300	500x500	5.2	5	5501196
110	300	500x500	8.9	5	5501197

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Thermobond

Thermobond seaming technique is unique and patented by Trelleborg Waterproofing. Thermobond is based on a thermoplastic rubber (TPE-base) that can be seamed with conventional seaming methods for plastic material like hot air or hot wedge seaming. The Thermobond material is the base for a full range of accessories that gives good system solutions combining the unique properties of an elastomeric membrane with the seaming properties of the thermoplastics.

# Product Specification

## Contact Adhesive 5000

Contact Adhesive 5000 is a ready-for-use contact adhesive for adhering EPDM and Butyl membranes to dry substrates (such as wood, concrete and metals).

### Technical data

<b>Base:</b>	Synthetic rubber and synthetic resins, dissolved in inflammable organic solvents
<b>Colour:</b>	Black
<b>Flash point:</b>	Below 0°C
<b>Viscosity (at 20°C):</b>	2500 ±500 mPa.s
<b>Solids:</b>	41±2 %
<b>Density (at 20°C):</b>	865±10 kg/m <sup>3</sup>
<b>Shelf life:</b>	max. 12 month, provided that the glue is kept in a cool place in a well-sealed container



### Article number and package

5595000	4.5 kg/can 60 cans/pallet
5595001	0.9 kg/can 432 cans/pallet

### Consumption/coverage

0.5 kg/m<sup>2</sup>

### Direction for use

Contact Adhesive 5000 is ready for use but can if necessary be thinned with Cleaning Wash 9700 (max. 10 %) or toluene. Contact Adhesive 5000 must not be thinned or mixed with other products.

The adhesive must only be processed in dry weather conditions at temperatures of at least + 5 °C. The material and the base to be glued must also be dry and clean. Contact Adhesive 5000 should be applied with a stiff brush or a finely-toothed glue spatula. Contact Adhesive 5000 should be applied to both sides.

### Suitable substrates

Contact Adhesive 5000 provides an excellent adhesion on many materials, such as EPDM/Butyl rubber, hard PVC, acrylic glass, SVS, RVS, stone, concrete, light weight concrete, lead, wood and bituminous substrates.

The substrates must be clean, free from oil and grease, and dry. Wet substrates or substrates covered with moisture must be dried by means of hot air before adhering.

### Warning

Contact Adhesive 5000 is highly flammable. Keep away from open fire.

The solvents in Contact Adhesive 5000 are extremely harmful to polystyrene foam.

Contact Adhesive 5000 is only suitable for by Trelleborg approved EPDM and Butyl membranes.

# Product Specification

## PUR Adhesive 3200

PUR Adhesive 3200 is used for adhering Superseal on different substrates. As a result of its special formulation, in which physical drying and chemical cross linking have been combined, the penetration of the adhesive is limited also when strong absorbing materials are concerned.

### Technical data

<b>Base:</b>	Polyurethane prepolymer
<b>Colour:</b>	Yellowish brown
<b>Flash point:</b>	<0°C
<b>Viscosity (at 20°C):</b>	6.000 ±1.750 mPa.s
<b>Solids:</b>	83±2 %
<b>Density (at 20°C):</b>	1.000±10 kg/m <sup>3</sup>
<b>Shelf life:</b>	9 months if stored cool in unopened original packing



### Article number and package

5532000      20 kg/metal tin  
                   480 kg/pallet

### Consumption

PUR Adhesive 3200 is applied in beads. Punch holes approximately Ø 6 mm spaced 50 mm in the can and spread the adhesive. The coverage shall be approximately 0,3 kg/m<sup>2</sup>. Splice areas on the membrane shall be kept free from adhesive. Wait (5 – 10 minutes) until the adhesive starts to swell and whiten before you roll out the membrane. Use a broom to brush the membrane so it is pressed down into the adhesive and lays smooth on the roof.

### Open time

Do not spread the adhesive over larger roof areas than you can cover in approximately 20 minutes.

### Setting time

Depending on temperature and humidity: 1 - 5 hours.

In case of dry substrates and low humidity, substrates or covering material should be moistened.

Minimum processing temperature is + 5 °C.

In case of temperatures between + 5 and + 15 °C it is recommended to pre-warm the adhesive to maximum + 50 °C before use.

### Suitable substrates

Concrete, light weight concrete, wood, mineralized bituminized roofing material, etc.

Substrates should be solid, clean and free from ponding water.

PUR Adhesive 3200 should not be used to adhere directly to polystyrene or mineral wool insulation without suitable facing.

### Warning

PUR Adhesive 3200 is highly flammable.

PUR Adhesive 3200 is only suitable for Superseal fleece backed membranes.

# Product Specification

## Cleaning Wash 9700

Cleaning Wash 9700 is a technical petrol used for cleaning weathered rubber membranes before installation and repair.

### Technical data

<b>Base:</b>	Naphtha (petroleum), hydrogen processed light 100%
<b>Colour:</b>	Colourless liquid
<b>Flash point:</b>	< 0°C
<b>Density (at 20°C):</b>	690-720 kg/m <sup>3</sup>
<b>Shelf life:</b>	6 months in unopened package*



### Article number and package

5597055	5 litre/plastic can
5597051	1 litre/plastic bottle

### Consumption/coverage

4-5 m<sup>2</sup>/litre

### Warning

Cleaning Wash 9700 is highly flammable. Keep away from open fire.

# Product Specification

## Sealant 5590

Neutral, elastic one-component joint sealant based on silicones. Sealant 5590 has excellent adhesion to rubber and most substrates. The sealant is used for repairs or sealing against substrates.

### Technical data

<b>Base:</b>	Silicon
<b>Colour:</b>	Black
<b>Flash point:</b>	Not applicable
<b>Density (at 20 °C):</b>	1.25 g/m <sup>3</sup>
<b>Shelf life:</b>	12 months in unopened packaging in a cool and dry storage place at temperatures between +5 °C and +25 °C



### Article number and package

5595590      310 ml/cartridge  
                   15 cartridge/carton

### Consumption

8-12 m/cartridge

### Direction for use

Method: Caulking gun.

Application temperature: +1°C to +30°C

Clean: With Cleaning Wash 9700 immediately after use.

Resplicing: Before resplicing with Thermobond strip or Contact Adhesive 5000 all mastic should be grinded away.

### Suitable substrates

Type: All usual building surfaces.

State of Surface: Clean, dry, free of dust and grease.

Preparation: Apply Primer 9800 for applications on porous surfaces – no primer required for non-porous surfaces.

We recommend a preliminary compatibility test.

# Product Specification

## Leister Handgun

Used for details splicing.

### Technical data

Voltage (V)	Power cons. (W)	Article number
230	1600	5599902



### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Direction for use

Set the heat to a temperature that is adapted for your welding speed. The Thermobond should melt but there shouldn't be any white smoke. After heating the Thermobond it should be pressed tight with silicone roller.

# Product Specification

## Brass or Silicone Pressure rolls

Used for details splicing of Thermobond accessories.

### Technical data

Product	Width roller (mm)	∅ roller (mm)	Article number
Brass-roller	6	28	5591046
Silicone-roller	28	32	5591047



### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Direction for use

Heat the Thermobond and press it tight with the roller.

# Product Specification

## Grinding Equipment

Grinding machine Flex for refreshing oxidized rubber surface before splicing. The machine is delivered with adaptation rings to fit the width of the grinding disc.

### Technical data (Grinding machine Flex)

<b>Voltage:</b>	220 Volt
<b>Power input:</b>	1200 Watt
<b>Power output:</b>	700 Watt
<b>Max. tool Ø:</b>	115 mm
<b>Tool width:</b>	100 mm
<b>Tool fixture:</b>	19 mm
<b>Speed without load:</b>	1200-3700 rpm (recommended speed 2000 rpm)
<b>Weight:</b>	3.1 kg
<b>Article number:</b>	5592000



### Technical data (Grinding disc, nylon)

<b>Diameter:</b>	100 mm
<b>Width:</b>	50 mm
<b>Tool fixture:</b>	19 mm
<b>Article number:</b>	5592001

### Storage

Store cool and dry in the original packaging. There are no limitations in shelf life.

### Direction of use

Set the speed to approx. 2500 rpm. Grind the splice areas with some pressure put to the machine but without exaggerating. It is only the very surface of the membrane that should be refreshed.

# Product Specification

## Protection Tape

For the protection of splice areas from air born contamination and UV-radiation during longer abruption in the installation. Must be removed before Thermobond splicing.



### Technical data

Width (mm)	Length (m)	Package (pcs/carton)	Article number
75	33	12	5590010

### Storage

Store cool and dry in the original packaging. Maximum shelf life is 12 months.

# SUPERSEAL S / ST ROOFING SYSTEM

## Accompanying Document, EN 13956



**0402-CPD-470301**

### Product Description

Superseal S/ST is a waterproofing membrane produced in two ply's of synthetic EPDM rubber. The membrane is reinforced with a fleece backing from polyester with the weight 160 g / sq.m. The range of use is roof waterproofing mechanically attached or adhered to the substrate. The product comes in black colour and has a surface texture on the exposed side.

### Product Data

Characteristic	Test method	Unit	Value	Expr. of result
Visible defects	EN 1850-2		Pass	Pass/Fail
Length	EN 1848-2	m	20	MDV -0, +5 %
Width	EN 1848-2	m	1.34:1.74	MDV -0,5 +1%
Effective thickness	EN 1849-2	mm	2.1:2.25	MDV -5 +10%
Straightness	EN 1848-2	mm	≤ 50 mm	≤ MLV
Flatness	EN 1848-2	mm	≤ 10 mm	≤ MLV
Water tightness	EN 1928 (B)		Pass	Pass/Fail
Reaction to fire	EN 13501-1		E	Classification
External fire performance	EN 13501-5		BroofT1, BroofT2	Classification
Peel strength of joint	EN 12316-2	N/50 mm	150	≥ MLV
Shear strength of joint	EN 12317-2	N/50 mm	200*	≥ MLV
Tensile strength	EN 12311-2 (A)	N/50mm	400	≥ MLV
Elongation at break	EN 12311-2 (A)	%	300	≥ MLV
Dynamic penetration	EN 1269	mm	1000	≥ MLV
Static load	EN 12730	kg	25	≥ MLV
Tear resistance	EN 12310-2	N	150	≥ MLV
Dimensional stability	EN 1107-2	%	0.5	≤ MLV
Foldability at low temp.	EN 495-5	°C	- 40	≤ MLV
Water vapour properties	EN 1931	μ	110000	MDV ± 30%

\*Break in sheet

NPD = No Performance Determined

MDV= Manufacturer's Declared Value

MLV = Manufacturer's Limiting Value

Edition: 17-03-2010

# SUPERSEAL FR / FRT ROOFING SYSTEM

## Accompanying Document, EN 13956



**0402-CPD-470301**

### Product Description

Superseal FR / FRT is waterproofing membranes produced in two ply's of synthetic EPDM rubber. The membrane is reinforced with a fleece backing from polyester with the weight 160 g / sq.m. The range of use is roof waterproofing mechanically attached or adhered to the substrate. The product comes in black colour and has a surface texture on the exposed side.

### Product Data

Characteristic	Test method	Unit	Value	Expr. of result
Visible defects	EN 1850-2		Pass	Pass/Fail
Length	EN 1848-2	m	20	MDV -0, +5 %
Width	EN 1848-2	m	1.74	MDV -0,5 +1%
Effective thickness	EN 1849-2	mm	2.1	MDV -5 +10%
Straightness	EN 1848-2	mm	≤ 50 mm	≤ MLV
Flatness	EN 1848-2	mm	≤ 10 mm	≤ MLV
Water tightness	EN 1928 (B)		Pass	Pass/Fail
Reaction to fire	EN 13501-1		NPD	Classification
External fire performance	EN 13501-5		BroofT2	Classification
Peel strength of joint	EN 12316-2	N/50 mm	100	≥ MLV
Shear strength of joint	EN 12317-2	N/50 mm	150*	≥ MLV
Tensile strength	EN 12311-2 (A)	N/50mm	400	≥ MLV
Elongation at break	EN 12311-2 (A)	%	300	≥ MLV
Dynamic penetration	EN 12691	mm	1000	≥ MLV
Static load	EN 12730	kg	25	≥ MLV
Tear resistance	EN 12310-2	N	150	≥ MLV
Dimensional stability	EN 1107-2	%	0.5	≤ MLV
Foldability at low temp.	EN 495-5	°C	- 30	≤ MLV

\*Break in sheet

NPD = No Performance Determined

MDV= Manufacturer's Declared Value

MLV = Manufacturer's Limiting Value

Edition: 17-03-2010

# SUPERSEAL T, EPDM ROOFING SYSTEM

## Accompanying Document, EN 13956



**0402-CPD-470301**

### Product Description

Superseal T is a waterproofing membrane produced in two ply's of synthetic EPDM rubber. The membrane is reinforced with a fleece backing from polyester with the weight 160 g / sq.m. The range of use is roof waterproofing loosely laid under ballast, mechanically attached or adhered to the substrate. The product comes in black colour and has a surface texture on the exposed side.

### Product Data

Characteristic	Test method	Unit	Value	Expr. of result
Visible defects	EN 1850-2		Pass	Pass/Fail
Length	EN 1848-2	m	20	MDV -0, +5 %
Width	EN 1848-2	m	1.74	MDV -0,5 +1%
Effective thickness	EN 1849-2	mm	2.1	MDV -5 +10%
Straightness	EN 1848-2	mm	≤ 50 mm	≤ MLV
Flatness	EN 1848-2	mm	≤ 10 mm	≤ MLV
Water tightness	EN 1928 (B)		Pass	Pass/Fail
Reaction to fire	EN 13501-1		E	Classification
External fire performance	EN 13501-5		RoofT	Classification
Peel strength of joint	EN 12316-2	N/50 mm	150	≥ MLV
Shear strength of joint	EN 12317-2	N/50 mm	200*	≥ MLV
Tensile strength	EN 12311-2 (A)	N/50mm	400	≥ MLV
Elongation at break	EN 12311-2 (A)	%	300	≥ MLV
Dynamic penetration	EN 12691	mm	1000	≥ MLV
Static load	EN 12730	kg	25	≥ MLV
Tear resistance	EN 12310-2	N	150	≥ MLV
Dimensional stability	EN 1107-2	%	0.5	≤ MLV
Foldability at low temp.	EN 495-5	°C	- 40	≤ MLV
Water vapour properties	EN 1931	μ	98000	MDV ± 30%

\*Break in sheet

NPD = No Performance Determined

MDV= Manufacturer's Declared Value

MLV = Manufacturer's Limiting Value

Edition: 17-03-2010

# Installation Specification

The information in this manual is a guideline to providing sound waterproofing. The base for the guideline is many years of practical and design experience obtained by Trelleborg Waterproofing. Local legislation or design practice may differ slightly from these specifications and instructions, however the information enclosed should be considered as a general guideline towards the most effective product use and application in a given situation when installing our membranes.

Since the handling and installation is beyond our control, Trelleborg Waterproofing retain no responsibility for these areas.

## Preface

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	<b>Roof Design</b>
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# Product Information

Superseal is an elastomeric EPDM membrane for roof waterproofing that is reinforced with a polyester backing. It can be secured to the roof by mechanical attachment alternatively be adhered with PUR-adhesive or bonding bitumen.

There are three different formulation of the Superseal membrane -T, -ST and -FRT. The decisive factor when choosing product alternative is required external fire classification. Chosen thickness is also directly depending on the demands in the local market. All versions of Superseal is designed and installed with the same procedure.

Description	Thickness (mm)	Size (m)	External fire performance
<b>Superseal T</b>	2.1	1.74x20	FroofT*
<b>Superseal ST</b>	2.1	1.34x20	BroofT1, BroofT2
<b>Superseal ST</b>	2.1	1.74x20	BroofT1, BroofT2
<b>Superseal ST</b>	2.25	1.34x20	BroofT1, BroofT2
<b>Superseal ST</b>	2.25	1.74x20	BroofT1, BroofT2
<b>Superseal FRT</b>	2.1	1.74x20	BroofT2
<b>Superseal FRT</b>	2.25	1.74x20	BroofT2

\*Unclassified

Make sure to control that the build up and products chosen is compatible with the local legislations.

## Materials Handling and Storing

Check the material as verified by specifications, shipping document and product label. Missing or damaged goods should be reported to Trelleborg Waterproofing.

Store all materials according to the product specifications.

Packages shall not be opened until the material shall be applied. If the installation work is interrupted, unprotected rolls shall be covered or put back in their packaging.

Make sure that the substrate can carry the load when material is placed on the roof (point load).

Do not allow traffic or work by other contractors until installed roof areas are satisfactory protected. Keep the work site in good order and free from construction debris, loose nails, steels sheet off cuts etc.

Do not cover a larger roof area than it is possible to finalize splicing upon during the working period.

If Superseal is exposed to the sun for a longer period the surface oxidizes. This is not changing the properties of membrane but the quality and strength of the Thermobond splice is strongly affected. Therefore we recommend careful planning so that all splicing is done as soon as possible after Superseal lay out. Another alternative is to cover the seam areas or to fold the membrane to protect seam areas. If the Superseal have oxidized the splice areas must be grinded with a grinding machine and nylon grinding disc followed by cleaning. The time it takes for oxidization to start is depending on the strength of the sun. Therefore it is of particular importance to do seam test before starting regular seaming.

# Works planning

The basic behind efficient and safe roof installation is preparation and careful planning of the work.

The roofing work as well as quality assurance becomes easier and more secure if there is a way to split the roof in smaller areas that can be finished in detail during each working period.

If the work is interrupted exposed rolls must be covered or put back in their original packaging.

If Superseal is exposed to the sun for a longer period the surface oxidizes. This is not changing the properties of membrane but the quality and strength of the Thermobond splice is strongly affected. Therefore we recommend careful planning so that all splicing is done as soon as possible after Superseal lay-out. Another alternative is to cover the seam areas or to fold the membrane to protect seam areas. If the Superseal have oxidized the splice areas must be grinded with a grinding machine and nylon grinding disc followed by cleaning before seaming. The time it takes for oxidization to start is depending on the strength of the sun. Therefore it is of particular importance to do seam test before starting regular seaming.

# Roof Design

## Build Up

### Substrate

Superseal can be used on all common substrates like: concrete, timber or corrugated metal deck. Concrete or timber decks can be used for cold roofs without insulation but on metal deck, insulation is required.

The roofing substrate shall have adequate strength and rigidity to carry actual loads from wind and snow etc.

Superseal is not influenced by ponding water but we still recommend a slope of at least 1:100 (0.5°).

The substrate shall be relatively even - equivalent to wood floated concrete. It shall be clean and free from water in any form as well as contaminations like oil or grease. Screws or nails must be properly entered into substrate without risking coming out.

The smoothness of the substrate is important under splice areas. Difference in level more than 5 mm must be levelled before splicing.



### Insulation

Superseal can be installed upon any type of insulation without risk of migration. The chosen insulation must be suitable for low slope roofing and adapted to the requirements of the roof design.

Insulation should have compression strength at 10% deformation of minimum 60 kPa (60 kN/m<sup>2</sup>) to assure a proper installation.

Install insulation suitable for the roof in accordance with the guidelines of the supplier.

Polystyrene insulation can be melted and damaged by the heat from hot air machinery. For this reason we recommend that the insulation is covered by a heat protecting layer like an extra layer of Superseal, a mineral wool board or bitumen felt around details. Automatic welders do normally not melt the insulation.

Make sure to control that chosen insulation is suitable for adhesives when making securement with adhesive or bonding bitumen. It is not possible to adhere to "naked" polystyrene or mineral wool. These insulations requires facing or must be covered with a bitumen felt or equivalent before adhering the Superseal.

Keep Contact Adhesive 5000, Cleaning Wash 9700 and PUR Adhesive 3200 away from insulation that cannot resist solvents.



### Vapour Barrier

When installing a new warm roof a suitable vapour barrier must be applied under the insulation and it should be installed to be air tight over the entire surface.

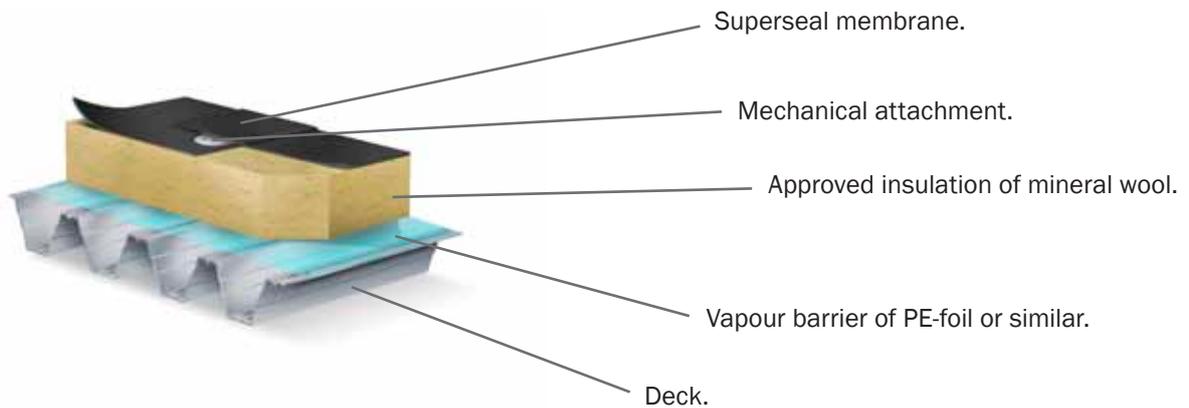
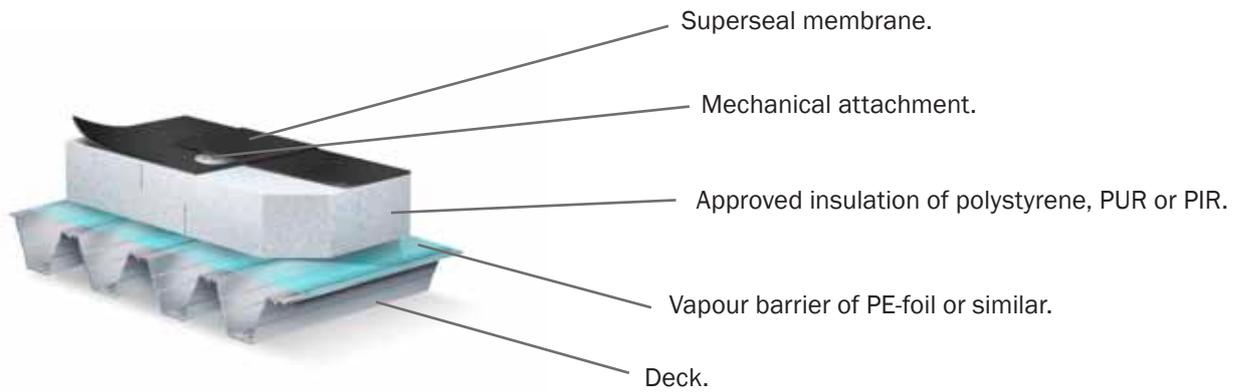
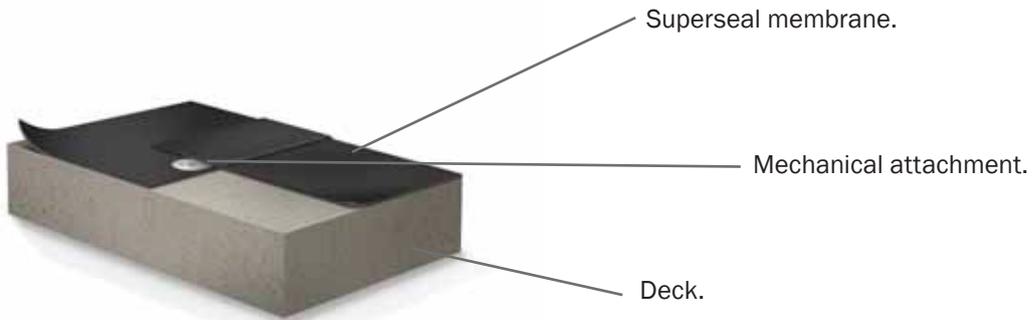
At roof terminations, and connections to walls, the vapour barrier shall be brought up over the thermal insulation. At penetrations, the vapour barrier shall be connected air tight with construction tape.



# Roof Design

## Build Up - Superseal Mechanically Attached

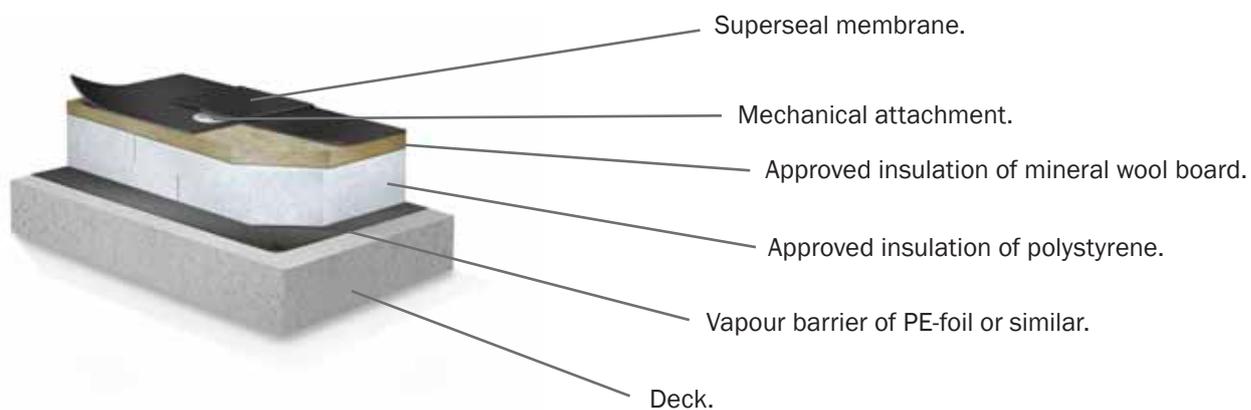
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# Roof Design

## Build Up - Superseal Mechanically Attached

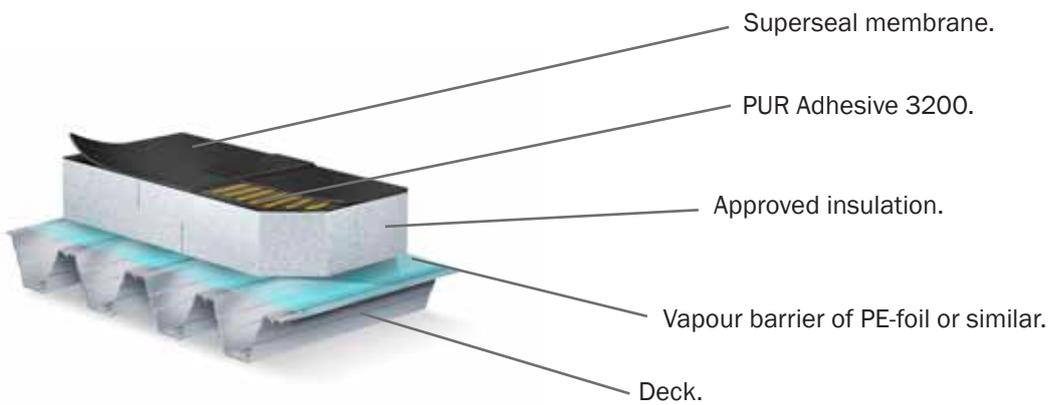
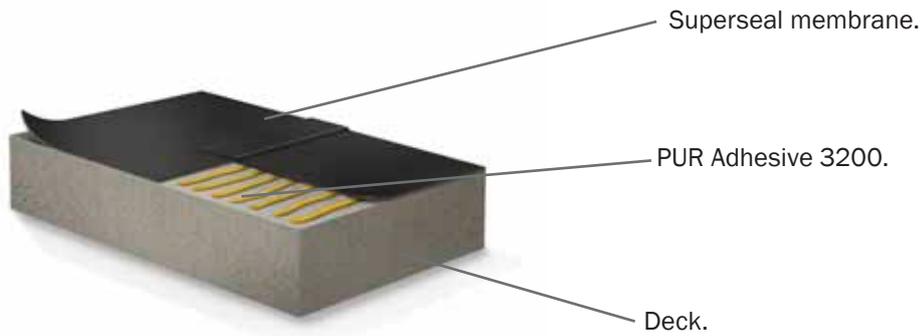
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# Roof Design

## Build Up - Superseal Cold Adhered

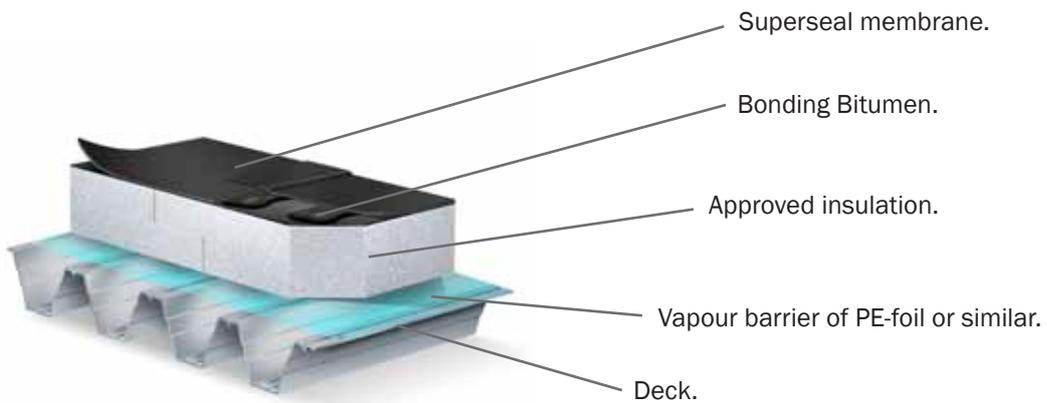
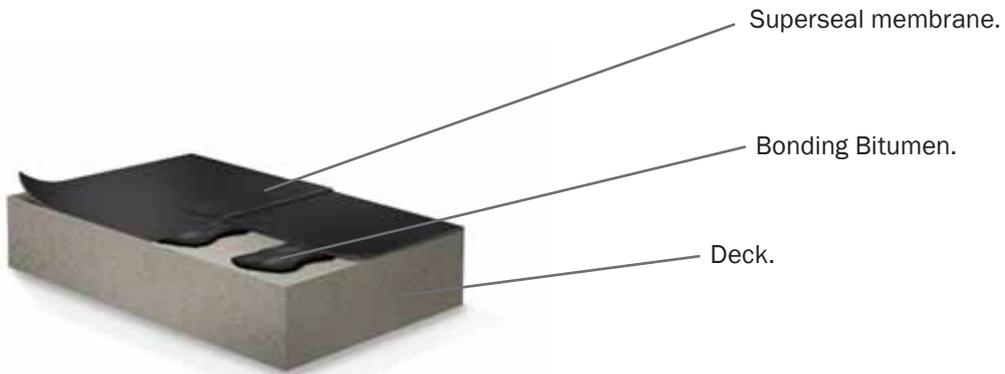
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# Roof Design

## Build Up - Superseal Bitumen Bonded

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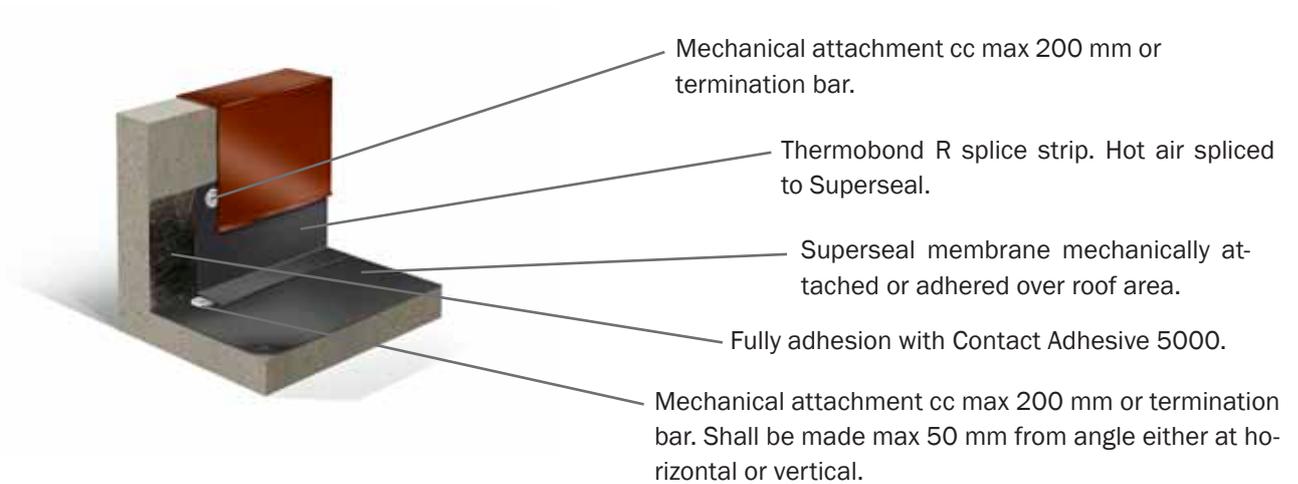
# Roof Design

## Details - Upstands

All places where the substrate makes a change in angle greater than 15° should be considered as an upstand and treated accordingly by breaking and mechanical anchoring the Superseal membrane. This is done in addition to the membrane securement in the field area and should be done at perimeters and walls but also for penetrations in the field measuring 500 mm, side or diameter. The distance between the mechanical attachments should not exceed 200 mm cc.

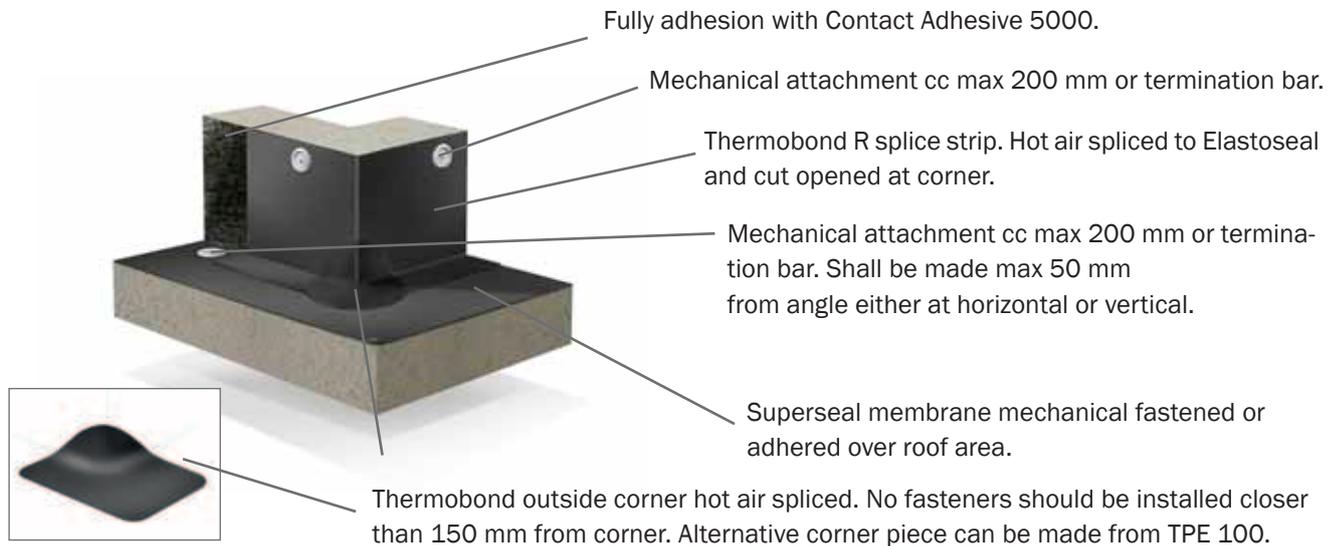
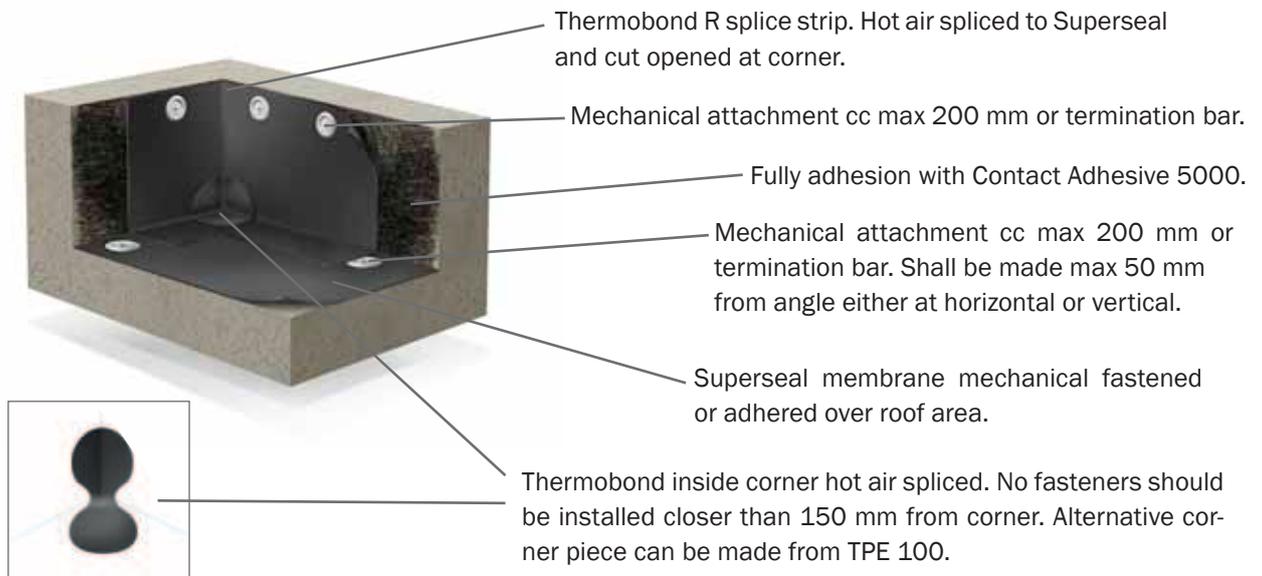
### Upstand

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# Roof Design

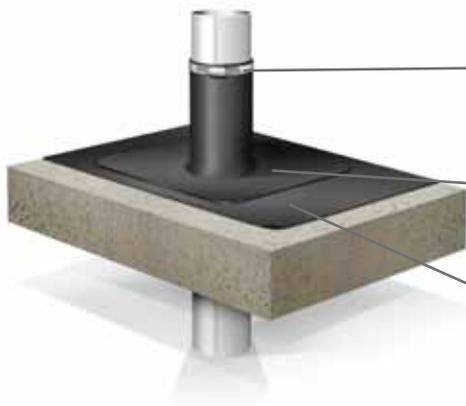
## Details - Corners



# Roof Design

## Details - Pipe Penetrations

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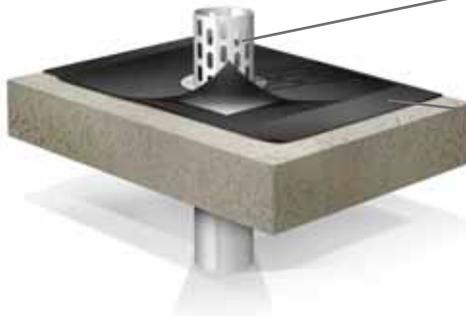


Stainless pipe clamp. Pipe sealed off with Sealant 5590 if top isn't covered by cap as counterflashing.

Thermobond Pipe Boot. Hot air spliced to Superseal. Can also be built on site using Thermobond Splice Strip (un-reinforced).

Superseal membrane mechanical fastened or adhered over roof area.

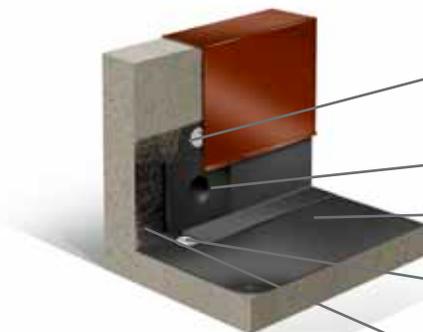
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PC Stainless drain. Mechanical fastened to substrate and hot air spliced to Superseal.

Superseal membrane mechanical fastened or adhered over roof area.

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Mechanical attachment cc max 200 mm or termination bar.

PE Outlet. Hot air spliced to Superseal.

Superseal membrane mechanical fastened or adhered over roof area.

Mechanical attachment cc max 200 mm or termination bar. Shall be made max 50 mm from angle either at horizontal or vertical.

Fully adhesion with Contact Adhesive 5000.

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# Roof Design

## Details - Expansion Joint

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Superseal membrane mechanical fastened or adhered over roof area.

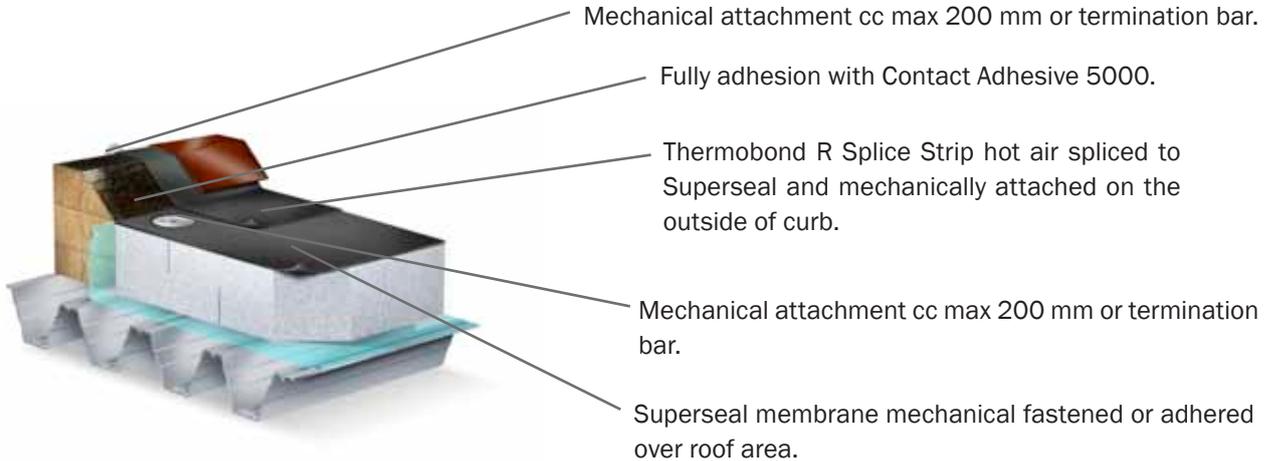
Metal sheet mechanically fixed to substrate to one side only. If there is a risk for sharp edges the metal sheet must be covered by a protection layer.

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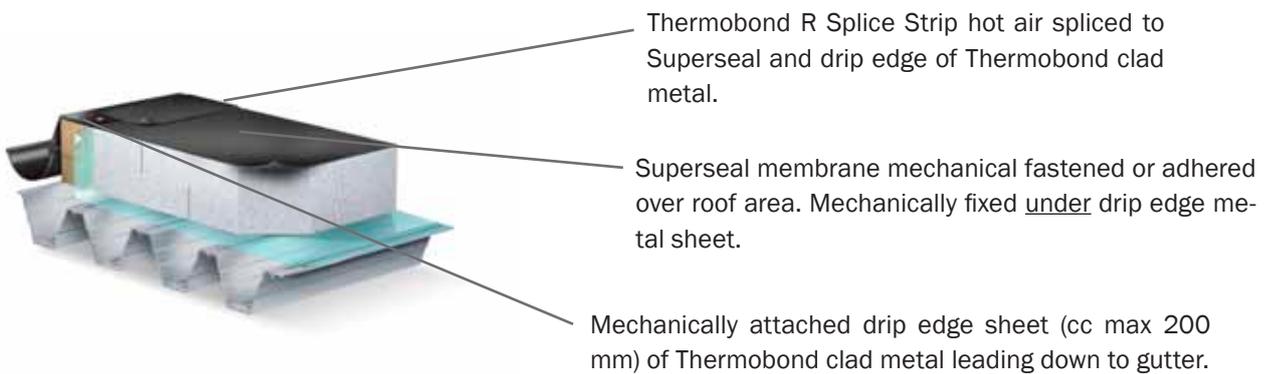
# Roof Design

## Details - Edge Details

### Termination at Curb



### Termination at Drip Edge



When prolonging the drip edge sheet of Thermobond clad metal the sections should be placed with a gap of 5 mm where the gap is bridged with duct tape and sealed off by welding a cover strip of Thermobond R splice strip.

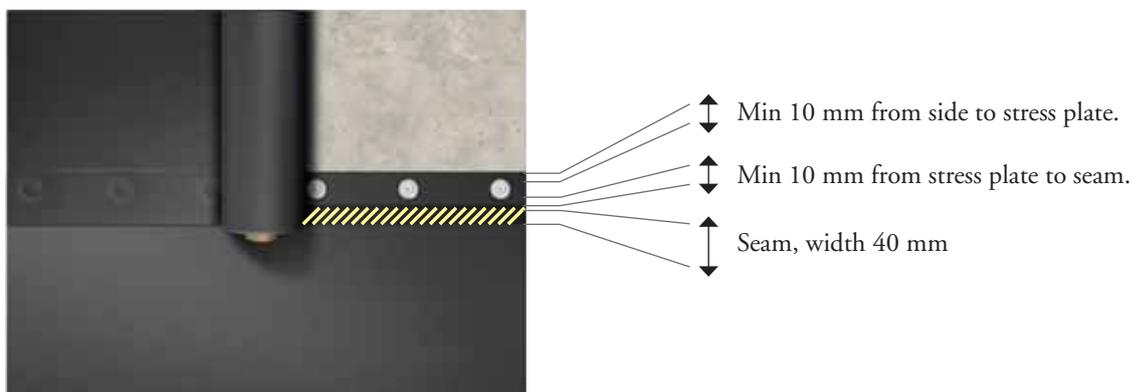
# Membrane Installation

## Mechanically attached Superseal

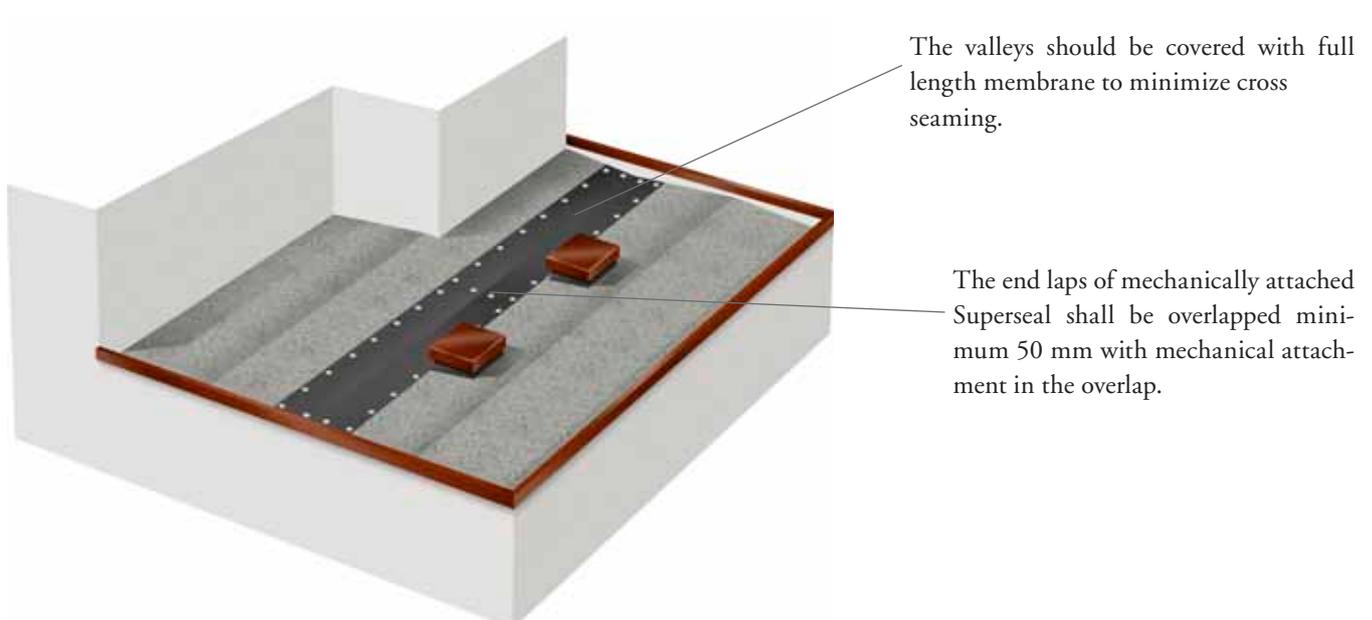
Make sure that proper fixation plan for the Superseal membrane exist and that this is based on an unique wind uplift calculation for the project. If the needed rows for fixation are less distanced than the adhered width, additional row of fixation can be entered in the middle of the membrane and be covered with Thermobond R splice strip.

The installation of Superseal shall preferably start at the lowest parts of the roof either in a valley or the lowest side. From this point the lay-out of the membrane is done cross the slope direction with a membrane overlap of approx 120 mm. Exception to this must be done if it is a corrugated metal deck that runs in the direction of the slope. If so the membrane is installed along the slope to enable attachment.

The Superseal rolls shall be positioned so that they can be rolled out into their final position without adjustments.

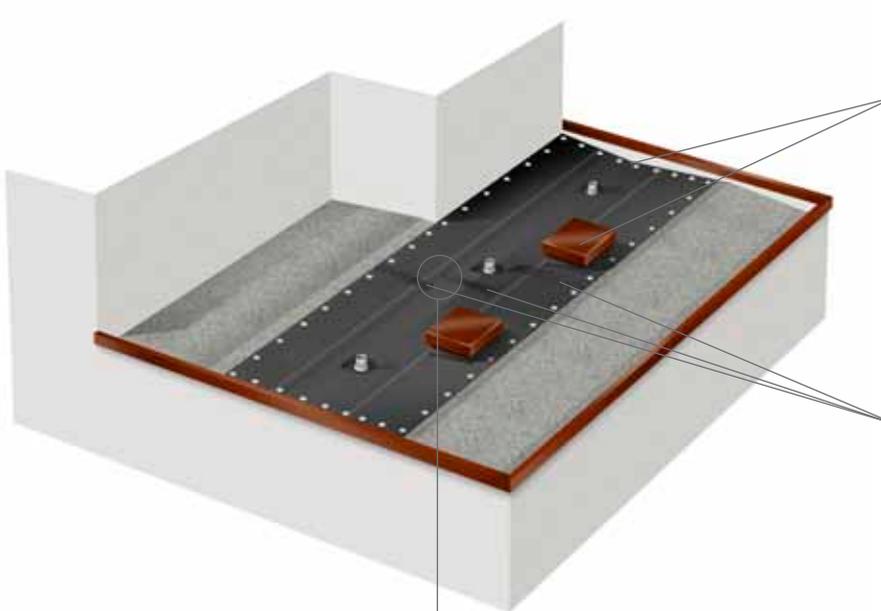


Measurements for positioning the Superseal for mechanical attachment. There are two parallel lines printed on the membrane for guidance.



# Membrane installation

## Mechanically attached Superseal



Mechanically attachment with screws and stress plates should be installed at all perimeters, upstands and around penetrating details in the roof field measuring 500 mm or more (side or diameter). The distance between these stress plates should not exceed 200 mm.

Cross-seaming of mechanical fastened Superseal is done with a cover strip of Thermobond R splice strip in the width 150 mm.



Hot melt sealant shall be applied at T-joints for the cross seaming.

Slope direction →

Make sure that the mechanical attachments are properly entered into the substrate and that the stress plate is close and tight to the Superseal. The stress plate should however not be too tight installed giving wrinkles in the Superseal membrane or entered into soft insulation. When working on soft insulation telescopic tubes shall be used.

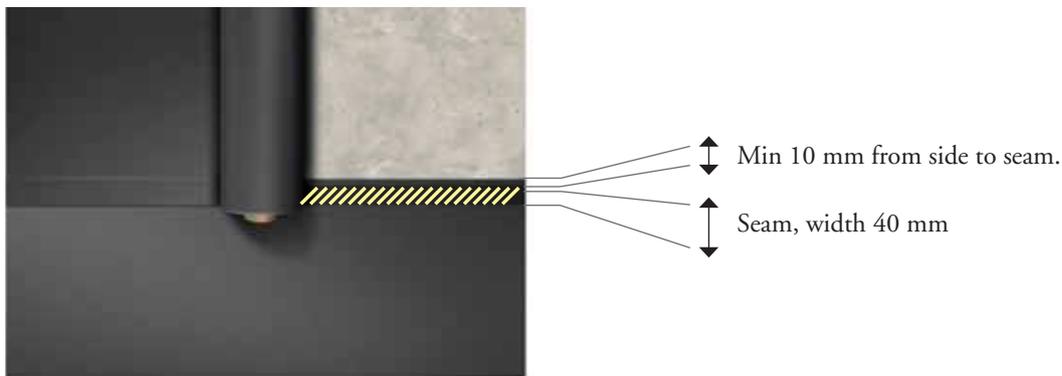
We recommend that all cuts and overlaps for splicing should be properly marked with a caulk line before execution. Straight line for cuts and splice is crucial for easy installation and good appearance.

# Membrane Installation

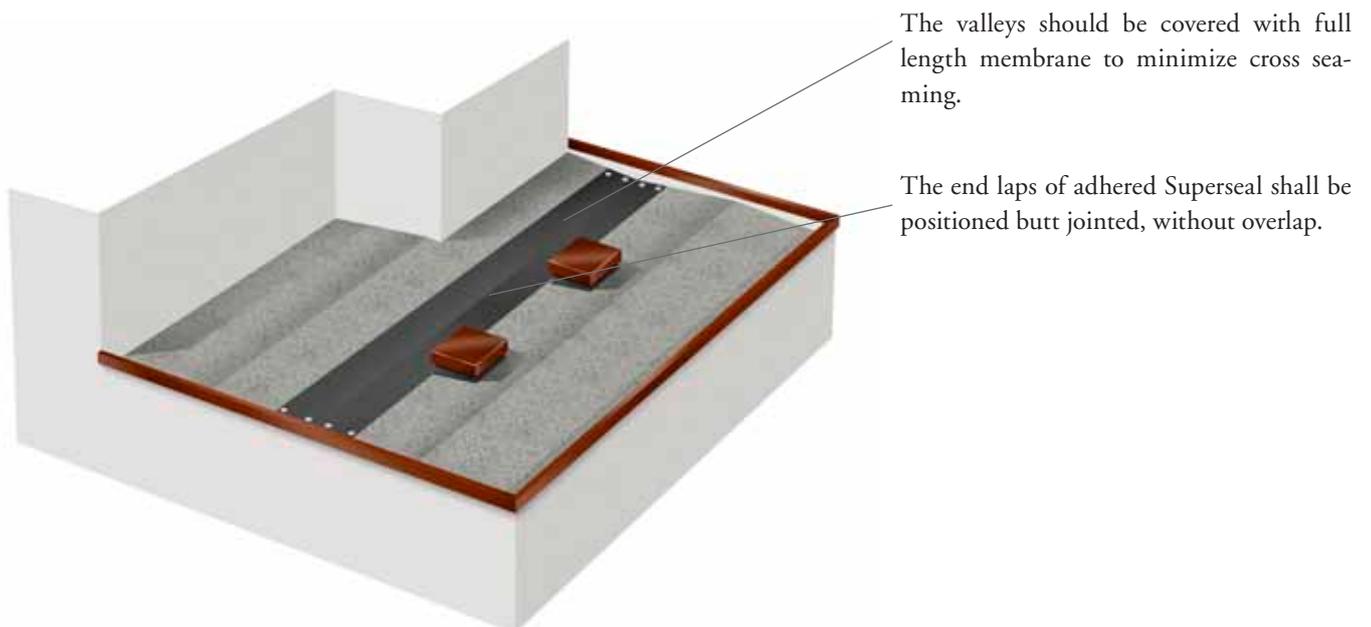
## Adhered Superseal

The installation of adhered Superseal shall always start at the lowest parts of the roof either in a valley or at the lowest side. From this position the lay-out of the membrane is done cross the slope direction with a membrane overlap of minimum 50 mm.

The Superseal rolls shall be positioned so that they can be rolled out into their final position without adjustments.

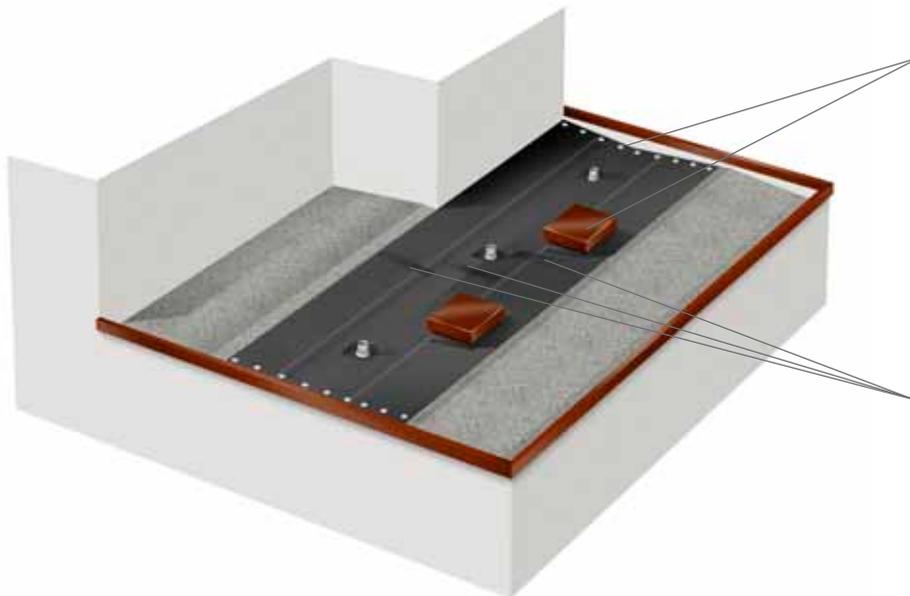


Measurements for positioning the Superseal for adhered application. There are two parallel lines printed on the membrane for guidance.



# Membrane installation

## Adhered Superseal



Mechanically attachment with screws and stress plates should be installed at all perimeters, upstands and around penetrating details in the roof field measuring 500 mm or more (side or diameter). The distance between these stress plates should not exceed 200 mm.

Cross-seaming of adhered Superseal is done with a cover strip of Thermobond R splice strip in the width 150 mm.

At roof slopes over 10° (>1:6) the membrane must be fixed mechanically at the upper side, with approved fasteners spaced 200 mm, to avoid sliding.

Make sure that the mechanical attachments is properly entered into the substrate and that the stress plate is close and tight to the Superseal. The stress plate should however not be to tight installed giving wrinkles in the Superseal membrane or entered into soft insulation. When working on soft insulation telescopic tubes should be used.

We recommend that all cuts and overlaps for splicing should be properly marked with a caulk line before execution. Straight line for cuts and splice is crucial for easy installation and good appearance.

### Adhering with PUR-Adhesive

PUR-Adhesive 3200 is applied in beads by punching holes with a diameter of 6 mm spaced 50 mm in the can and using the can to spread the adhesive. The coverage shall be approx. 0.3 kg/m<sup>2</sup>. Splice areas on the membrane shall be kept free from adhesive. Do not spread adhesive over larger roof areas than you can cover in approx. 20 minutes.

Wait (5-10 minutes) until the adhesive starts to swell and whiten before you roll out the membrane. Use a broom to brush the membrane so it is pressed down into the adhesive and lays smooth on the roof. The adhesive cures in 1-5 hours depending on temperature and humidity.

### Adhering with Bonding Bitumen

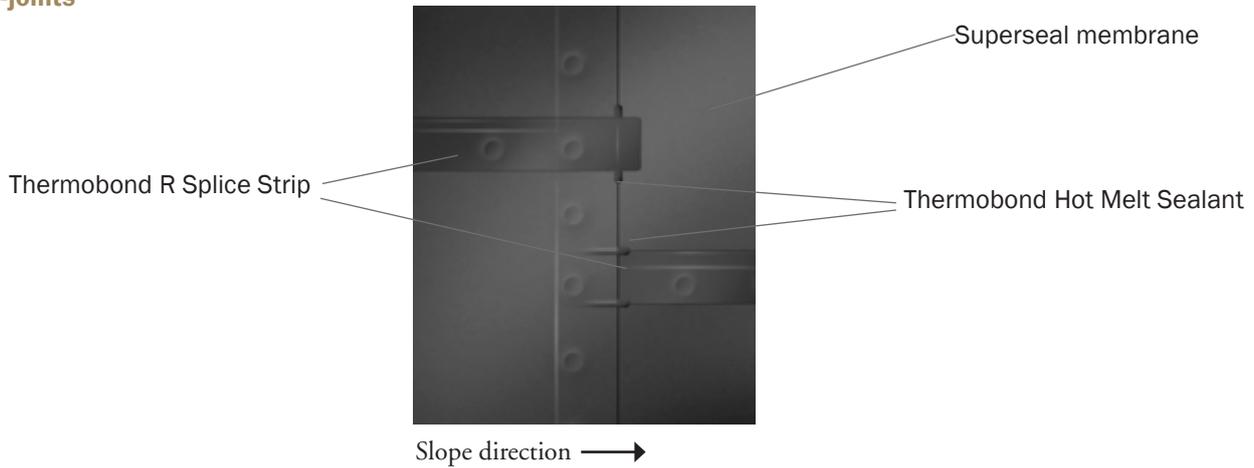
The SBS-modified bonding bitumen shall be heated in a bitumen kettle to approx. +180 °C. The bitumen to be tapped into spreader and poured out in 10 cm strings spaced 10 cm or as S-shaped beads so that approx. 50% of the roof surface is covered by bitumen to a coverage of approx 0.5-0.7 kg per m<sup>2</sup> roof area. The splice areas of the Superseal shall be kept free from bitumen. Spread the bitumen evenly over the roof. Bitumen puddles or too high a temperature will cause discoloration of the Superseal.

Note! Bitumen cannot be used to make waterproof seals between Superseal and details on the roof.

# Membrane Installation

## Details

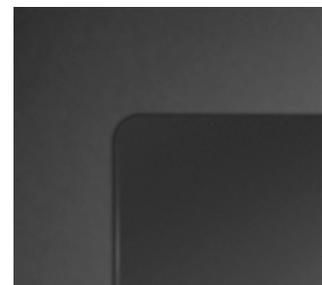
### T-joints



All T-joints should be levelled in height by applying the Thermobond hot melt sealant before the upper layer is installed. The hot melt sealant is applied with hand held hot air blower and silicone roller and the sealant shall stretch minimum 10 mm outside the upper layer. Directly after the upper Superseal membrane or Thermobond R strip is spliced it shall be pressed to the hot melt sealant using a pressure roller.

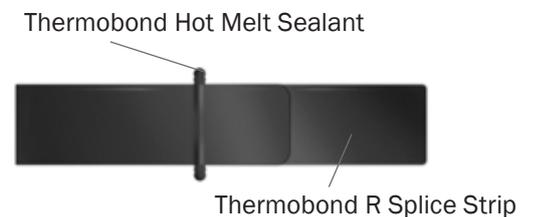
### Visible corners

Visible corners in the top layer shall be rounded to a radius of approx 30 mm.



### Prolongation of cover strip

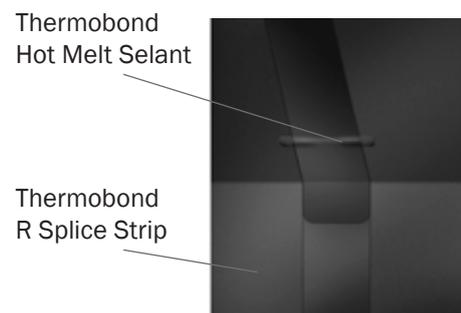
When Thermobond R splice strip needs to be prolonged this is done by overlapping the strip minimum 50 mm and welding the end lap. Visible corners to be rounded off at upper layer.



### Cover strip passing over angles

All places where the Thermobond R splice strip are used as a cover strip (not as flashing!) passes over an angle  $\geq 15^\circ$  it shall be broken with the underlying part passing the break line with min 50 mm. The upper Thermobond R splice strip should overlap min 100 mm and be seamed in place. Visible corners to be rounded off.

Note! The Superseal membrane must also be broken and fixated under these conditions.



# Splicing

For the onsite seaming during the installation the Thermobond hot air seaming technique is applied. Automatic welders like Leister Varimat and Variant or similar should be used on all places where it is possible to do so. Handheld Leister Triac in combination with silicone or brass pressure roll is used for detail work and at locations with narrow space or for really short splices.

## Recommended machinery

Machine	Application	Settings
<b>Leister Varimat</b>	Connections between Superseal membrane, Up-stands with Thermobond R Flashing.	Temperature: 620°C Speed: 1,5-3 m/min Pressure: +15 Kg
<b>Leister Variant</b>	Connections between Superseal membrane, Up-stands with Thermobond R Flashing.	Temperature: 10 Speed: 1,5-3 m/min Pressure: +15 Kg
<b>Leister Triac</b>	Detail work: corners, pipe boots, hot-melt sealant, repairs.	Temperature: 6-8 Speed and pressure: To be adopted Nozzle: 40 mm

## Environment

Thermobond heat splicing can be made in ambient temperature in the range -20 to+50°C.

Thermobond seaming should not be done during precipitation, in the presence of excessive moisture, in areas of ponding water or during excessive winds.

## Membrane

The splice areas of the membrane must be smooth clean and free from wrinkles.

It is of major importance that both areas that should be seamed together are heated before the contact areas are joined.

No stress should be build to a Thermobond seam.

Superseal should not be installed if the fleece backing is soaked with water as this won't give proper seaming conditions. After the fleece backing has dried out the problem will go away.

## Splice Properties

Recommended splice width is 40 mm with automatic hot air machinery and 50 mm when splicing with hand machine and silicone roller. Minimum seam width is 30 mm.

Note that the Thermobond seam doesn't reach full strength until it has cooled down.

Temperature-Speed settings are correct when the Thermobond is melted into a pasty consistence without development of white smoke.

A test weld should always be done at start-up of each working shift. The sample should be examined and tested to assure good quality.

## Oxidization

If Superseal is exposed to the sun for a longer period the surface oxidizes. This is not changing the properties of membrane but the quality and strength of the Thermobond splice is strongly affected. Therefore we recommend careful planning so that all splicing is done as soon as possible after Superseal lay-out. Another alternative is to cover the seam areas or to fold the membrane to protect seam areas. If the Elastoseal have oxidized the splice areas must be grinded with a grinding machine and nylon grinding disc followed by cleaning. The time it takes for oxidization to start is depending on the strength of the sun. Therefore it is of particular importance to do seam test before starting regular seaming.

# Quality Assurance and Control

Quality control and assurance are essential elements in the installation of Superseal Roofing System.

As the quality of the waterproofing is highly dependent upon the workmanship of the installer only contractors that are trained and certified by Trelleborg Waterproofing are allowed to do installations.

## Documentation

Each installation should be carefully documented including data on installed membrane.

## Visual Control

Visual controls of the work and the quality should be done throughout roof installations. Problems and faults should be detected and fixed as early as possible. Controlling aspect should be:

- ◇ That correct material are being used and installed with the right equipment and that proper storing at site is assured.
- ◇ That the material is installed according to the guidelines of Trelleborg Waterproofing, local regulations and in accordance with good workmanship practice.
- ◇ That the material isn't risking mechanical abuse.

## Splice Control

Test splices shall be carried out with every hot air machine at the beginning of each working period as well as longer interruptions.

The Thermobond shall be seamed with the intended machine settings to minimum length 200 mm and width 40 mm.

When the splice has cooled down to 35-40° C the splice is peeled by pulling the two sheets apart.

When the splice is peeled, it shall delaminate leaving Thermobond material on each membrane surface.

If the splice doesn't pass this test the equipment must be controlled, adjusted and a new test performed. Regular site splicing is not allowed until an approved test splice has been allowed.

## Splice Strength Testing

The splice strength is controlled by destructive testing of a seam from the roof area.

A sample of min. 200x200 mm is taken centrally cross the splice. The hole shall be repaired according to our guidelines.

The test samples are tested by peel according to EN 12316-2 and should reach peel strength of minimum 100N/50 mm, typical value in peel is 150-250N/50 mm.



## Splice Tightness Testing

The tightness of the seam shall be tested by running and applying some pressure with a blunt object like a screwdriver or similar along the seam. Extra attention should be addressed at corners, T-joints, penetrations and the roof perimeter.

An alternative tightness test is to use the air lance test method. This is executed by blowing compressed air perpendicular to the seam. If the seam has some deviation it will show and also the sound that the compressed air creates will change.

All deviation should be marked and repaired in suitable manner.



# Supervision & Maintenance

The Superseal membrane is maintenance free and has excellent durability without any sort of treatment.

We recommend that the roof is inspected by an authorized roofer on a regular base and also after extreme weather like storms or excessive precipitation. During the inspection the function of the roof is evaluated and deviations should be handled. Details in the roof are of higher importance than the surface and should be carefully examined: skylights, ventilation, curbs, connections to walls, drains, and pipe penetrations.

To maintain good functionality of the roof it should be cleaned on a regular basis. All objects that aren't belonging on the roof should be removed like contaminations, vegetations and leafs. It is of extra importance to keep the drainage free so that dewatering can function as intended.

Superseal should never be exposed to aromatic hydrocarbons like oil, diesel or fat. If this type of chemicals should leak to the roof it must be removed immediately or it will damage the membrane.

Regular walking on the membrane should be kept to a minimum. If there is regular traffic this should be considered in the design by adding walkways or pavers in that area.

If snow or ice needs to be removed from a roof shoveling must be done carefully leaving minimum 5 cm on the roof surface to make sure that the membrane isn't damaged by the work.

## Leakage

If a leakage into a building is detected there can be several reasons and a careful investigation must be done. Leakages does not necessary mean that there is a problem with the Superseal. Finding the problem includes considering:

- ◇ Mechanical damage of the membrane?
- ◇ When did the leakage first show?
- ◇ Weather conditions prior to leakage?
- ◇ Clogged drains or bad piping?
- ◇ Bad roof windows or ventilation shafts?
- ◇ Bad cladding in connection to the roof or the façade?
- ◇ Condensation from within due to wrong construction?
- ◇ Under what conditions does the leakage start/stop or does it constantly leak?
- ◇ Point of leakage in comparison to the slope of the roof (drained area)?

Trelleborg Waterproofing can assist in and have well developed techniques for finding leakages.

# Repairs

Start by locating the damage and try to find out the reason for it: installation failure, mechanical damage etc. When the reason is established it's easier preventing similar damages to occur.

Measure the size of the damage and cut Thermobond R splice strip to the size required. If the damage area is bigger it can be repaired by applying new Superseal membrane that is spliced to the existing membrane. The overlap between the existing membrane and the repair must be at least 50 mm.

The surface of the existing membrane must be grinded with grinding machine (2500 rpm) and nylon disc before splicing. After grinding the surface must be cleaned with water or cleaning wash 9700 and be left to dry. Splicing is done according to regular methods for Thermobond splicing.



# Refurbishment requirements

Before initiating a refurbishment of a roof an investigation should be performed. This should include finding the reason for the refurbishment and if some circumstances have led to shorten life span of the waterproofing than expected.

It is also importance to evaluate which components of the roof that can be reused and which that needs to be changed.

When connecting to an existing membrane other than Superseal or Elastoseal out on a surface a curb detail should be constructed. Both the Superseal and the other membrane should be terminated at the top of the curb and be covered by suitable coping.

## **EPDM**

No specific action needs to be taken. Only inspection and treatment of troubled areas needs to be done like, sharp edges from metal details, nails and screws properly entered into substrate etc. It is not possible to adhere a Superseal as refurbishment to an old EPDM membrane.

## **BITUMEN**

Old bitumen felt roofs must be swept clean, sealed and levelled. Stones and sharp objects shall be removed i.e. with a steel scraper. Wrinkles, blisters, waves and loose felt shall be cut off and repaired. All differences in height under Superseal seam areas should be levelled to be smooth.

## **PVC**

During renovation of PVC roofs we recommend that the old PVC should be removed from the roof. A minimum requirement is that the PVC is cut loose at perimeters, at details and in sections over the roof. It is not possible to adhere a Superseal as refurbishment to an old PVC membrane.

# Construction Drawings

## Superseal Mechanically Attached

### COPING DETAILS

<b>SUP-001</b>	Coping detail for a cold roof - mechanically attached
<b>SUP-002</b>	Coping detail for a warm roof - mechanically attached

### EDGE DETAILS

<b>SUP-101</b>	Drip edge detail for a cold roof – mechanically attached
<b>SUP-102</b>	Drip edge detail for a warm roof – mechanically attached
<b>SUP-105</b>	Curb detail for a cold roof – mechanically attached
<b>SUP-106</b>	Curb detail for a warm roof – mechanically attached
<b>SUP-109</b>	Edge detail with gutter for a cold roof – mechanically attached
<b>SUP-110</b>	Edge detail with gutter for a warm roof – mechanically attached

### PIPE DETAILS

<b>SUP-201</b>	Pipe detail for a cold roof - mechanically attached
<b>SUP-202</b>	Pipe detail for a warm roof - mechanically attached

### DRAIN DETAILS

<b>SUP-301</b>	Drain detail for a cold roof - mechanically attached
<b>SUP-302</b>	Drain detail for a warm roof - mechanically attached
<b>SUP-305</b>	Overflow drain detail for a cold roof - mechanically attached
<b>SUP-306</b>	Overflow drain detail for a warm roof - mechanically attached

### EXPANSION JOINT DETAILS

<b>SUP-401</b>	Expansion joint for a cold roof - mechanically attached
<b>SUP-402</b>	Expansion joint for a warm roof - mechanically attached

# Construction Drawings

## Superseal Mechanically Attached

### WALL FLASHING DETAILS

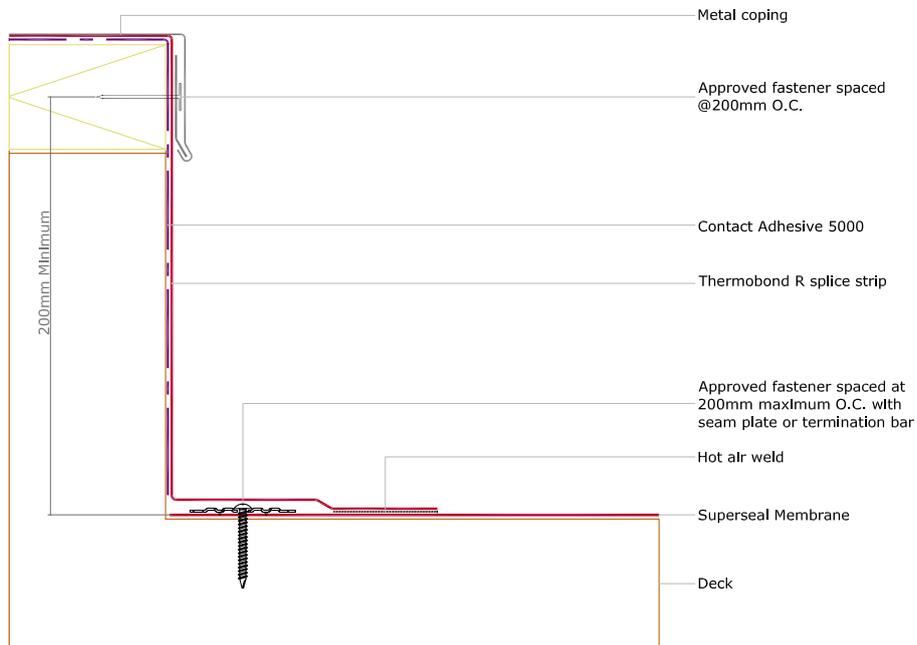
<b>SUP-501</b>	Reglet counterflashing for a cold roof - mechanically attached
<b>SUP-502</b>	Reglet counterflashing for a warm roof - mechanically attached
<b>SUP-505</b>	Surface mounted counterflashing for a cold roof - mechanically attached
<b>SUP-506</b>	Surface mounted counterflashing for a warm roof - mechanically attached
<b>SUP-509</b>	Clad wall panel system counterflashing for a cold roof - mechanically attached
<b>SUP-510</b>	Clad wall panel system counterflashing for a warm roof - mechanically attached

### TRANSITION DETAILS

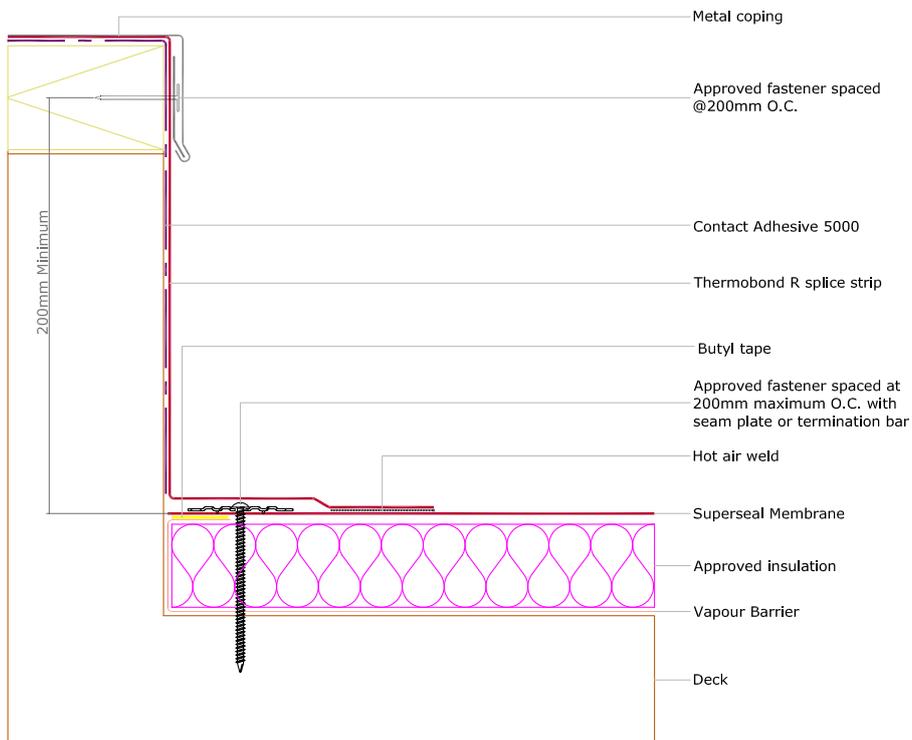
<b>SUP-601</b>	Multi-System Roof tie-in for a cold roof – mechanically attached
<b>SUP-602</b>	Multi-System Roof tie-in for a warm roof – mechanically attached
<b>SUP-605</b>	Valley detail for a cold roof – mechanically attached
<b>SUP-606</b>	Valley detail for a warm roof – mechanically attached
<b>SUP-609</b>	Ridge detail for a cold roof – mechanically attached
<b>SUP-610</b>	Ridge detail for a warm roof – mechanically attached
<b>SUP-613</b>	Multi-Level Roof tie-in for a cold roof – mechanically attached
<b>SUP-614</b>	Multi-Level Roof tie-in for a warm roof – mechanically attached

COPING DETAILS

**SUP-001 Coping detail for a cold roof - mechanically attached**

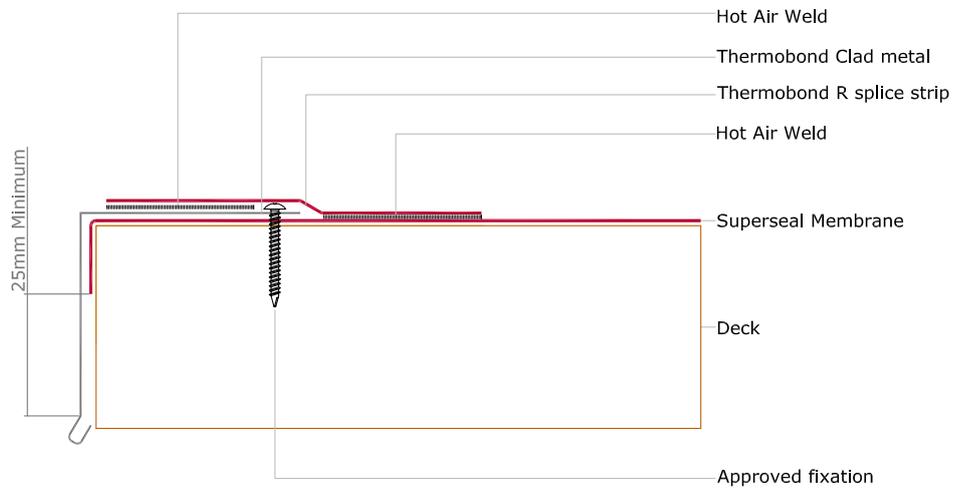


**SUP-002 Coping detail for a warm roof - mechanically attached**



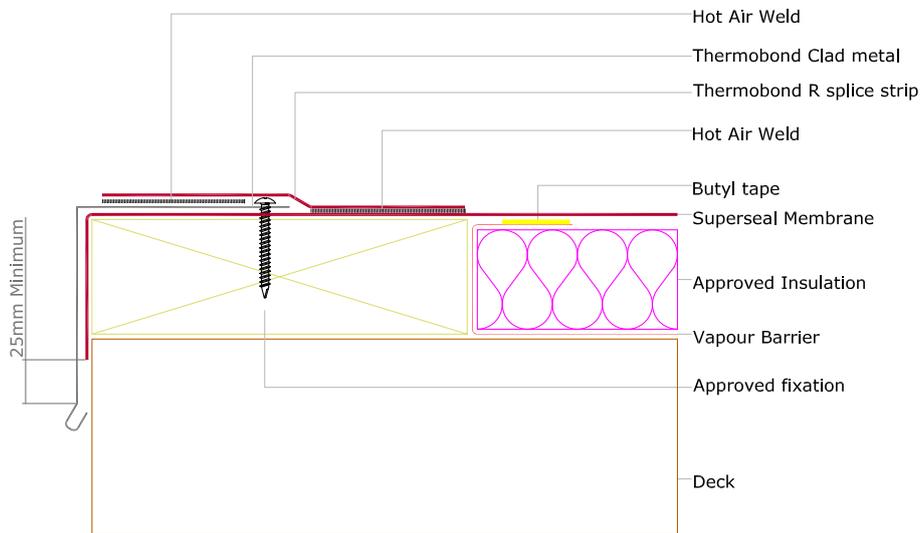
EDGE DETAILS

**SUP-101 Drip edge detail for a cold roof – mechanically attached**



This detail is only to be used where uncontrolled waterflow over the side of the building is acceptable.

**SUP-102 Drip edge detail for a warm roof – mechanically attached**



This detail is only to be used where uncontrolled waterflow over the side of the building is acceptable.

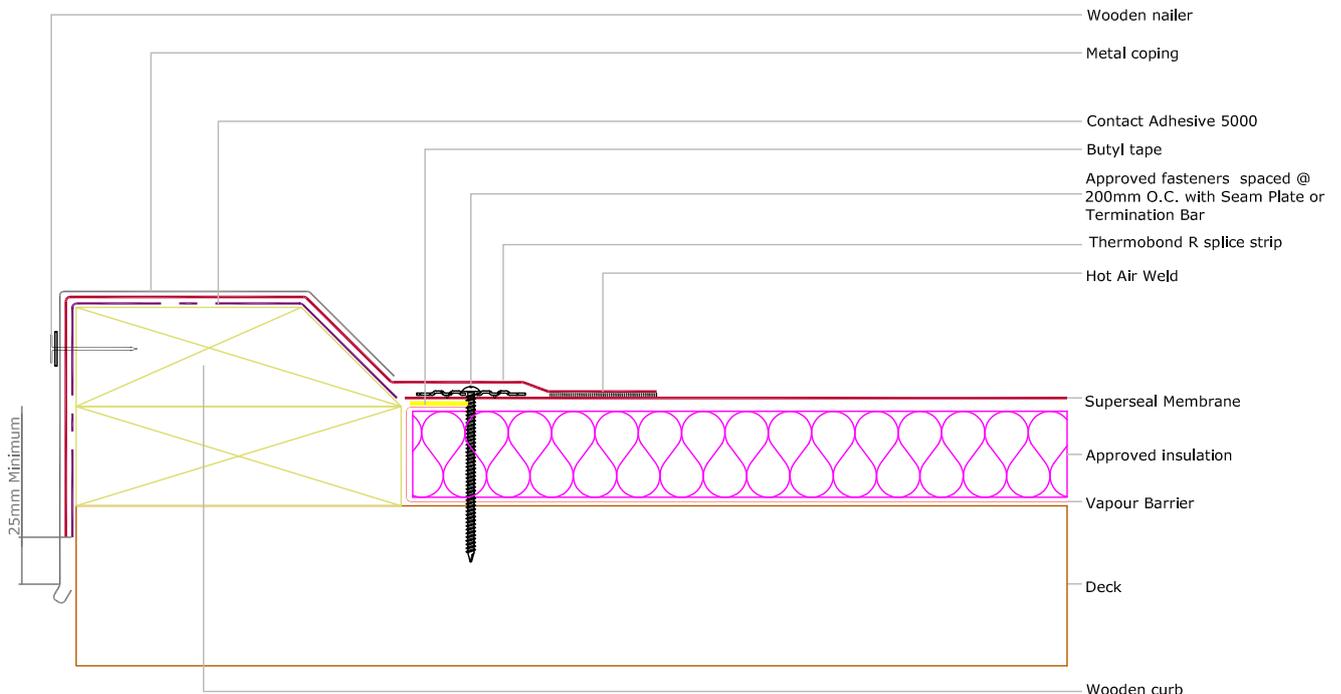
EDGE DETAILS

**SUP-105** Curb detail for a cold roof – mechanically attached



This detail can alternatively be made by fixating the Superseal Membrane under the curb itself.

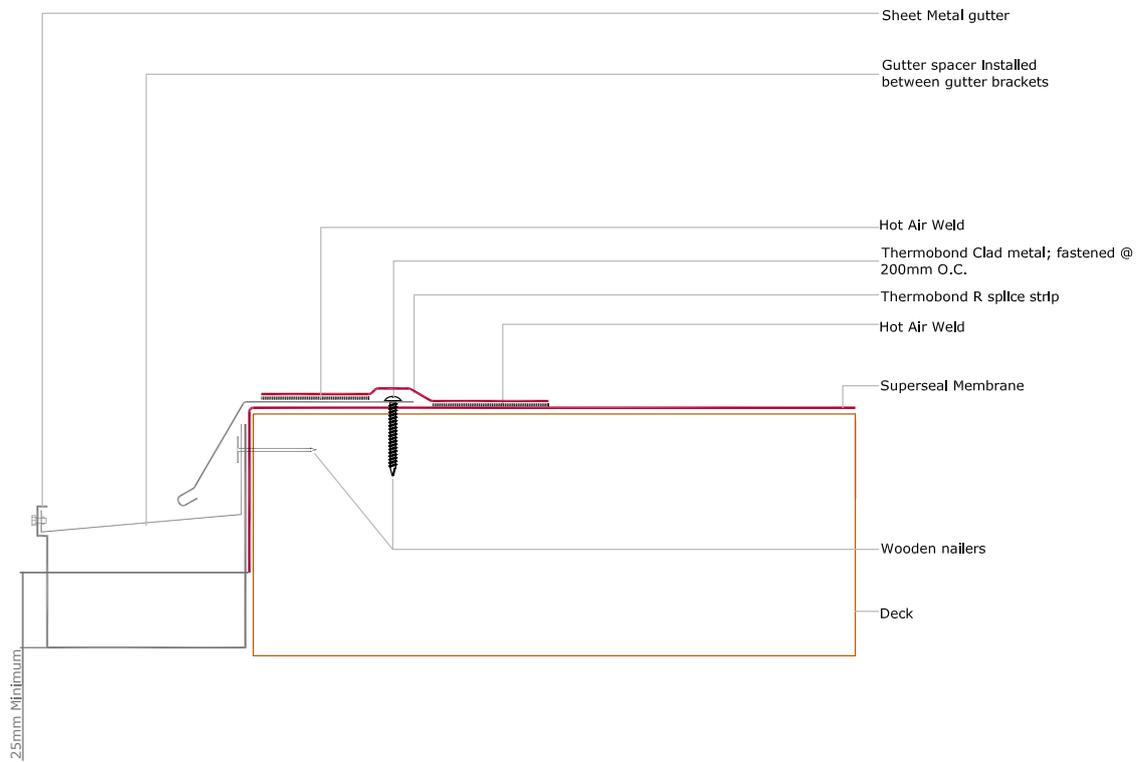
**SUP-106** Curb detail for a warm roof – mechanically attached



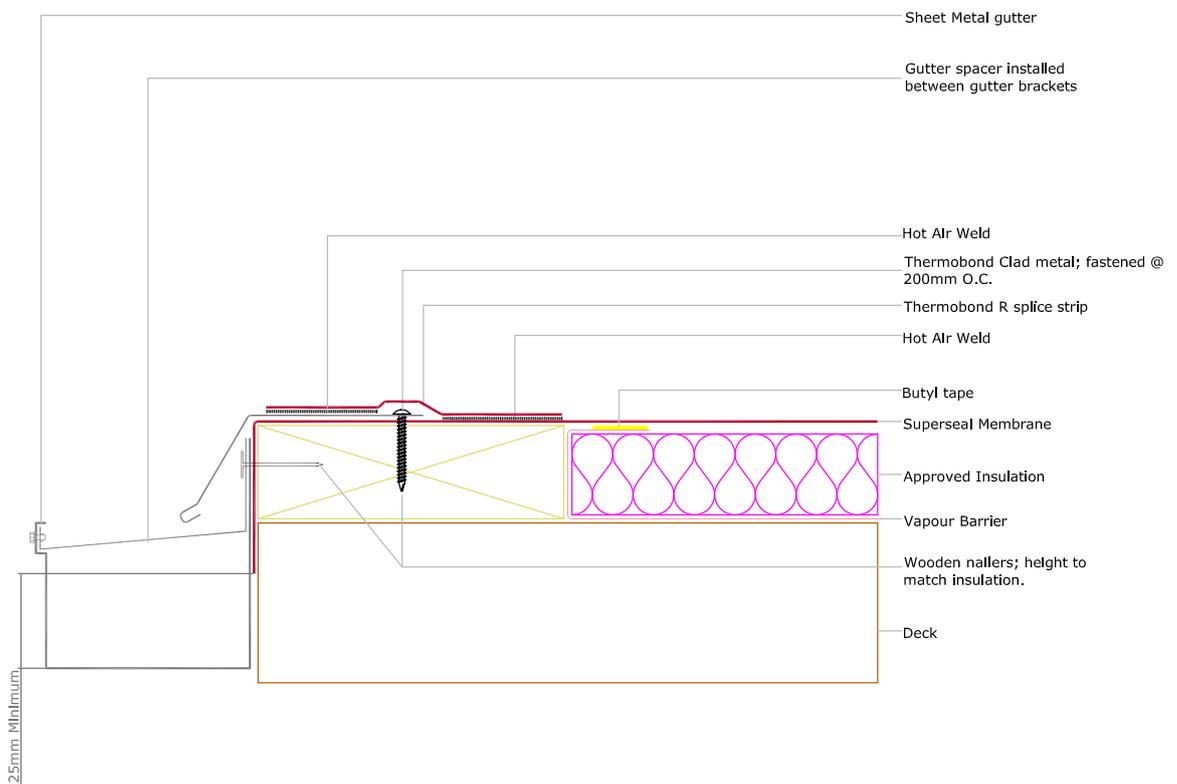
This detail can alternatively be made by fixating the Superseal Membrane under the curb itself.

EDGE DETAILS

**SUP-109** Edge detail with gutter for a cold roof – mechanically attached

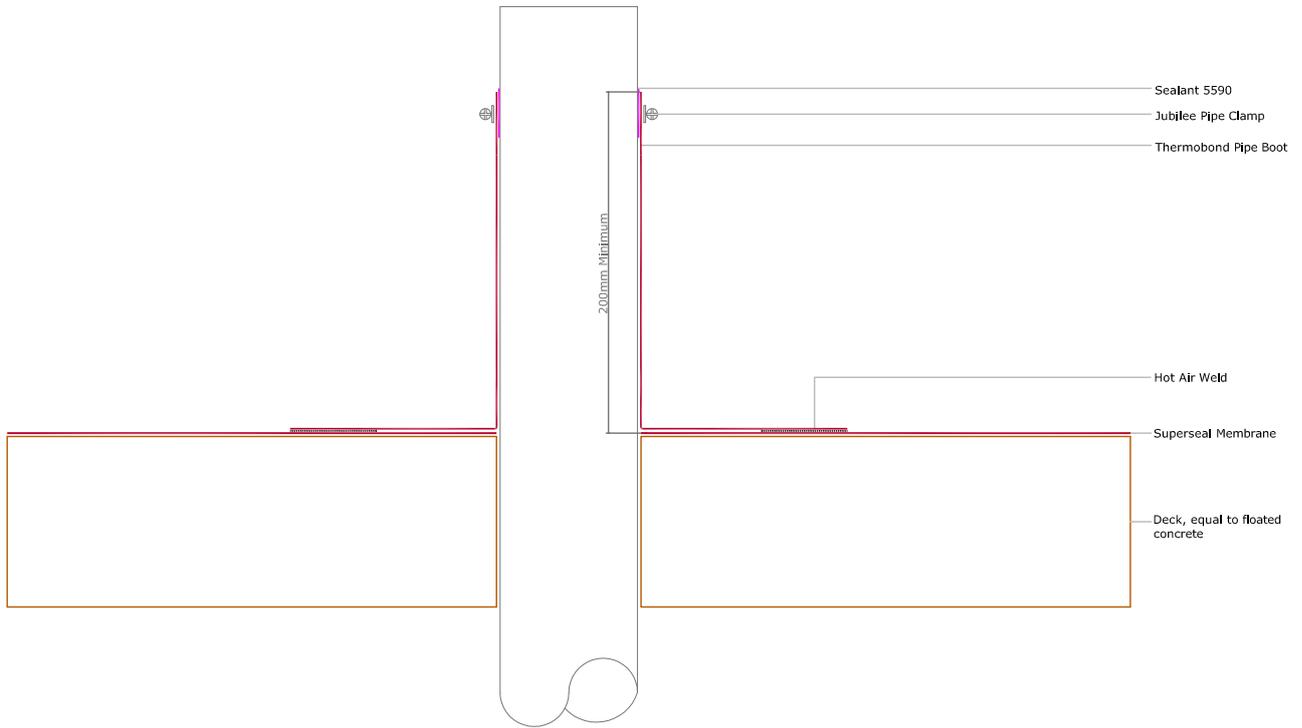


**SUP-110** Edge detail with gutter for a warm roof – mechanically attached

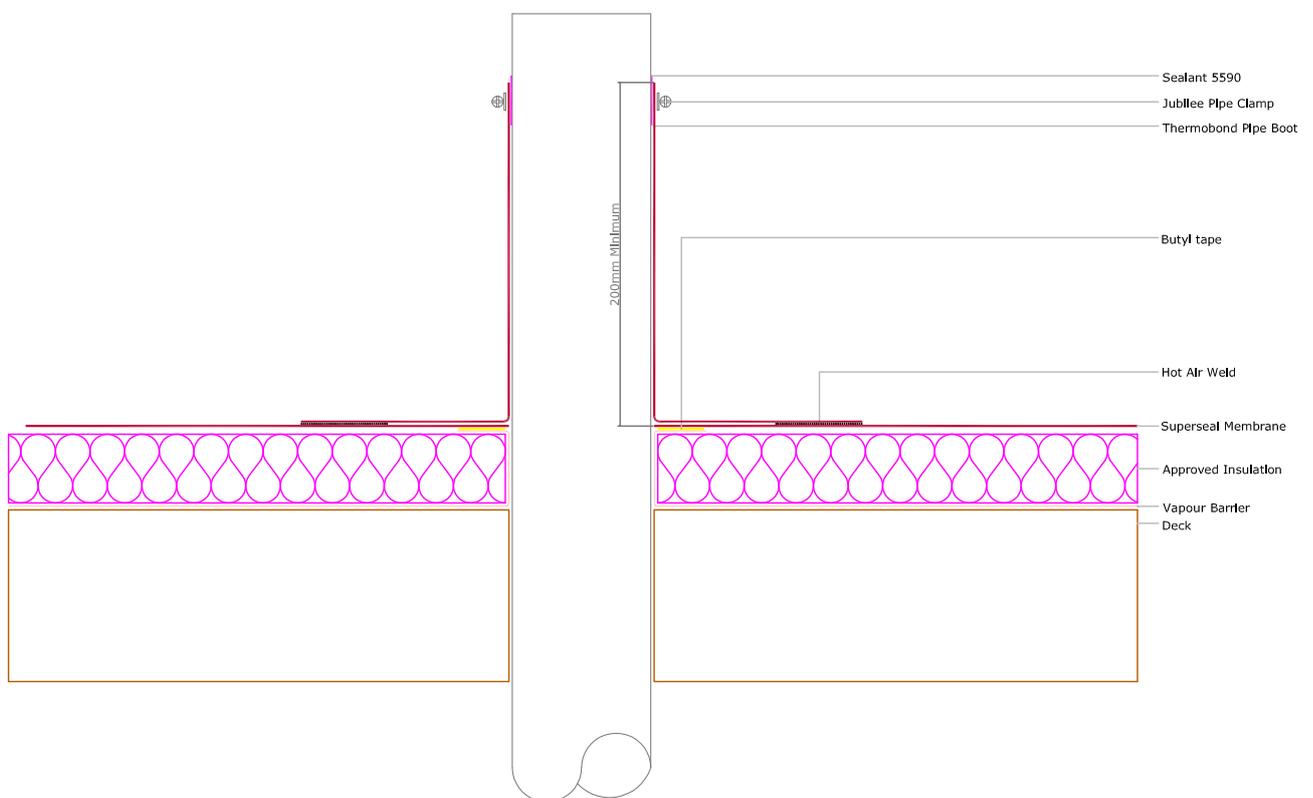


PIPE DETAILS

**SUP-201** Pipe detail for a cold roof - mechanically attached

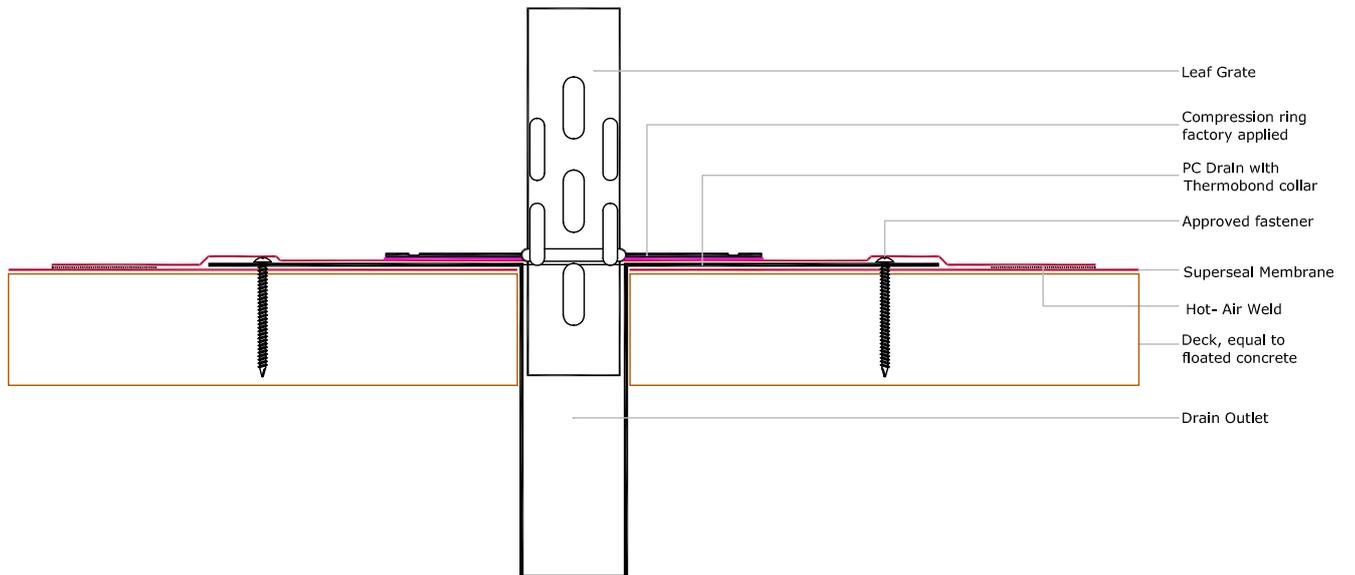


**SUP-202** Pipe detail for a warm roof - mechanically attached

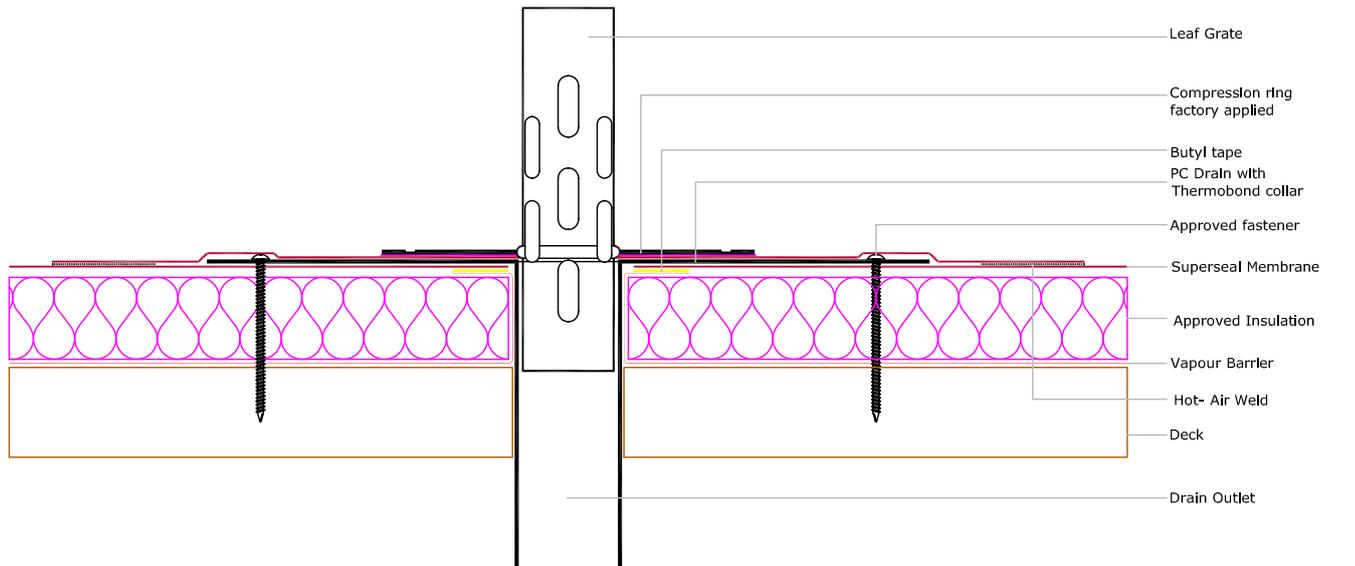


**DRAIN DETAILS**

**SUP-301 Drain detail for a cold roof - mechanically attached**

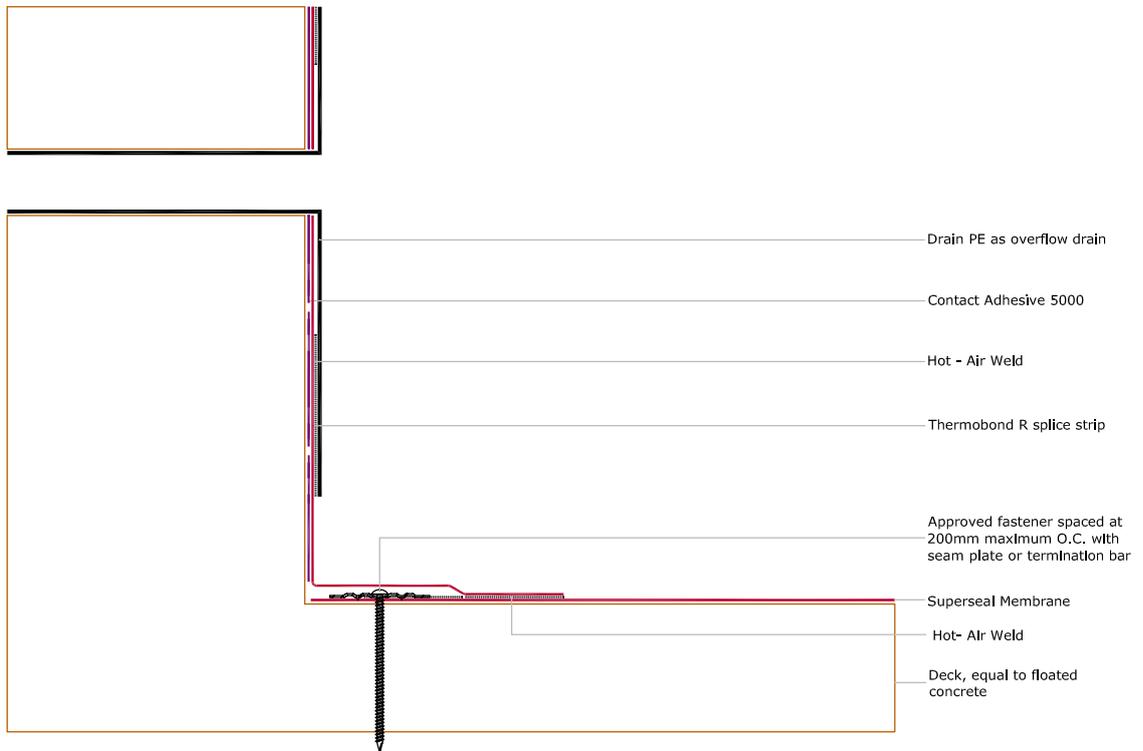


**SUP-302 Drain detail for a warm roof - mechanically attached**

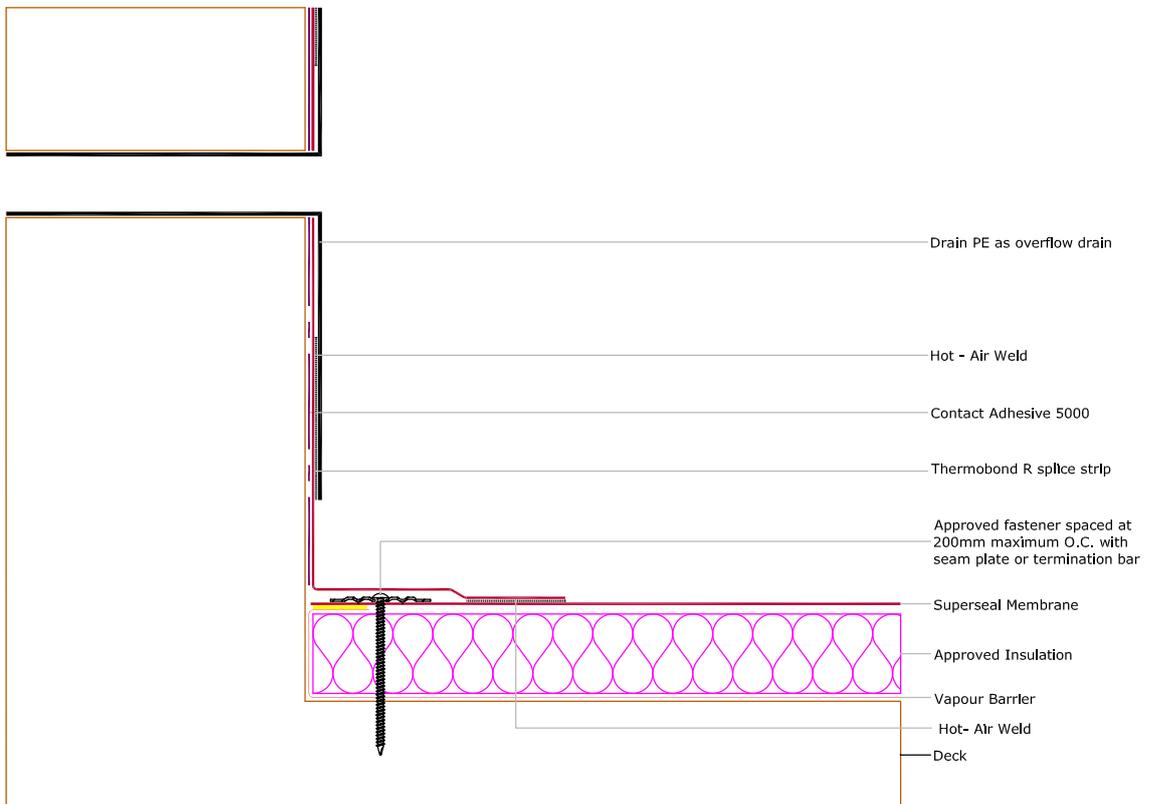


**DRAIN DETAILS**

**SUP-305 Overflow drain detail for a cold roof - mechanically attached**

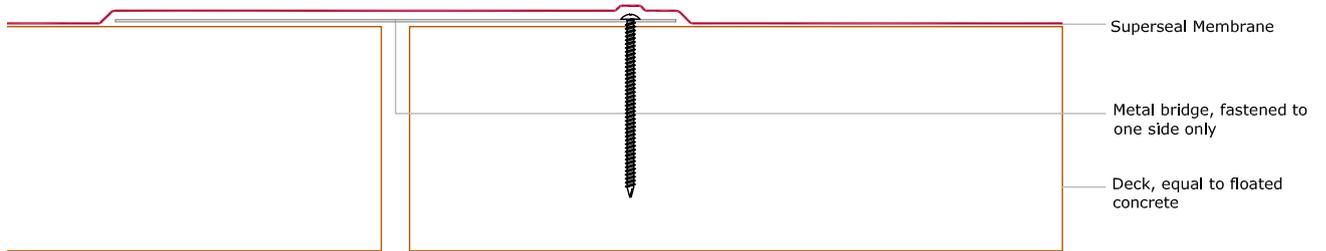


**SUP-306 Overflow drain detail for a warm roof - mechanically attached**

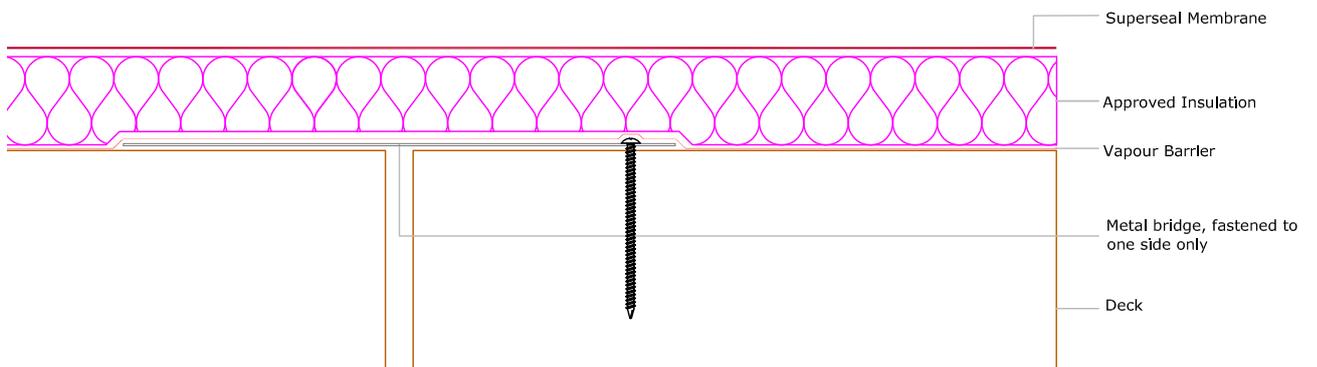


## EXPANSION JOINT DETAILS

### SUP-401 Expansion joint for a cold roof - mechanically attached

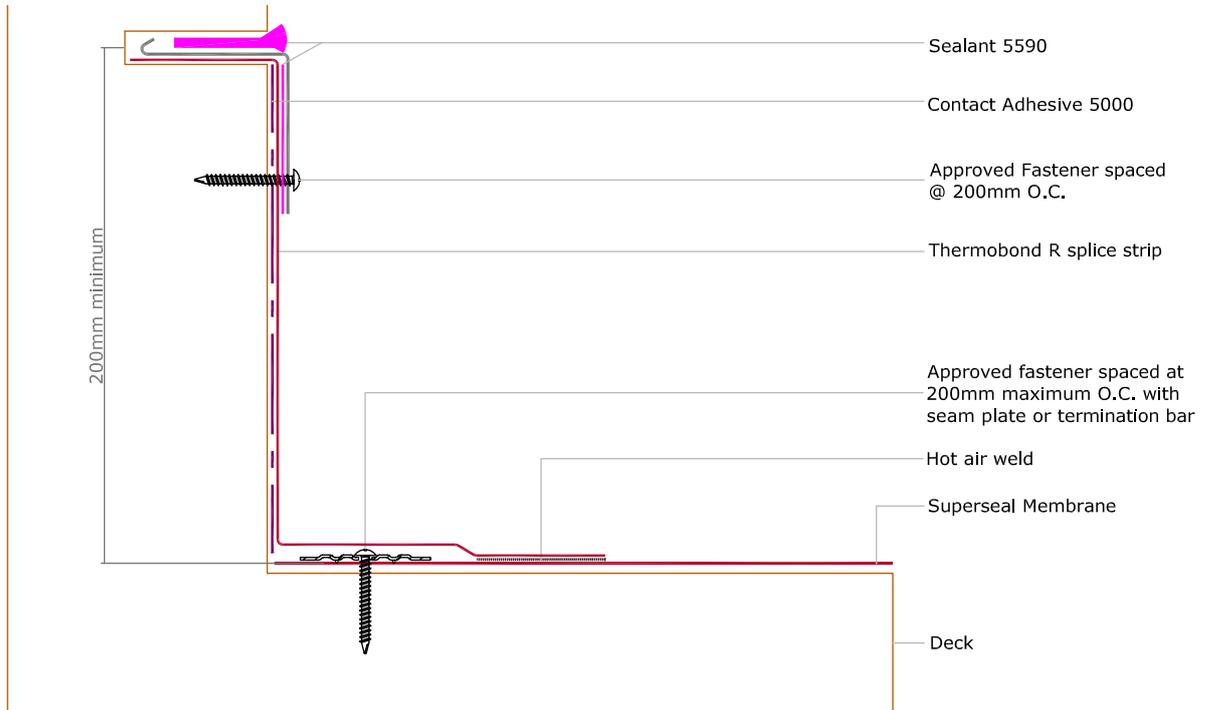


### SUP-402 Expansion joint for a warm roof - mechanically attached

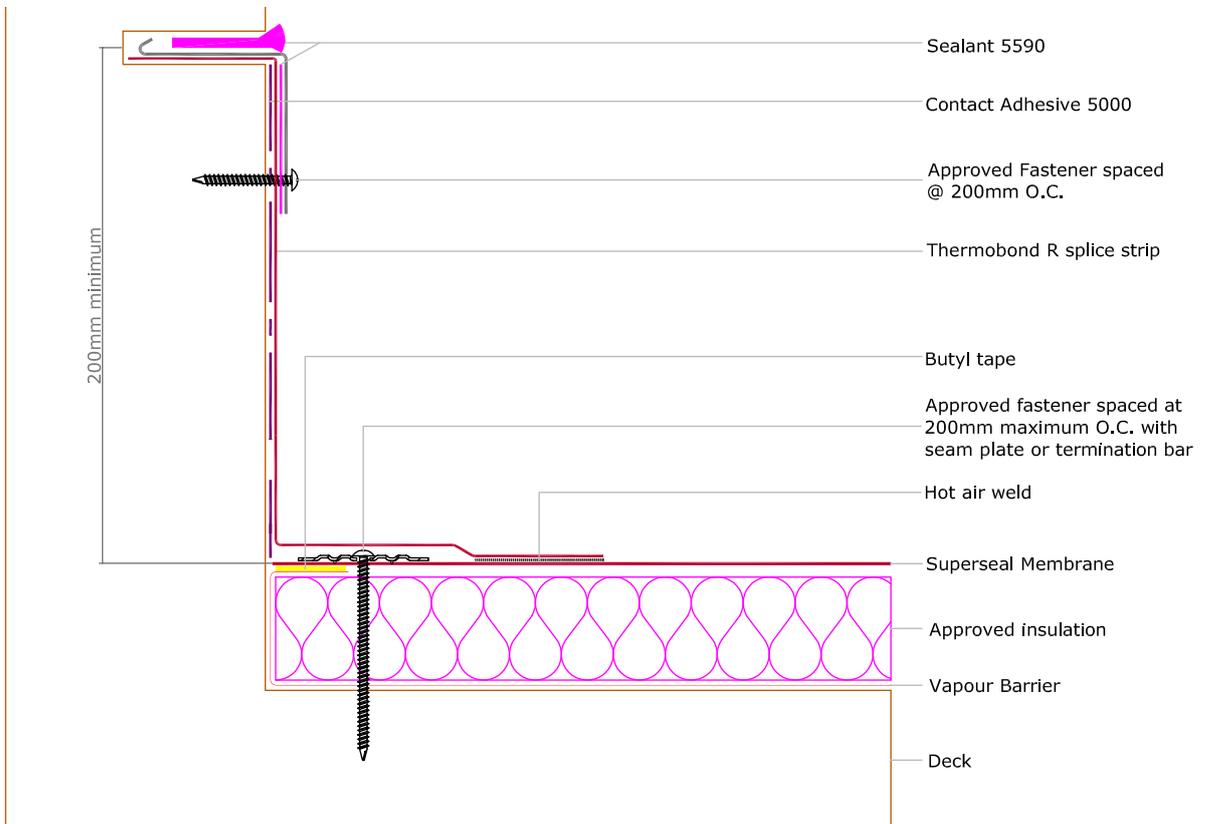


WALL FLASHING DETAILS

**SUP-501 Reglet counterflashing for a cold roof - mechanically attached**



**SUP-502 Reglet counterflashing for a warm roof - mechanically attached**

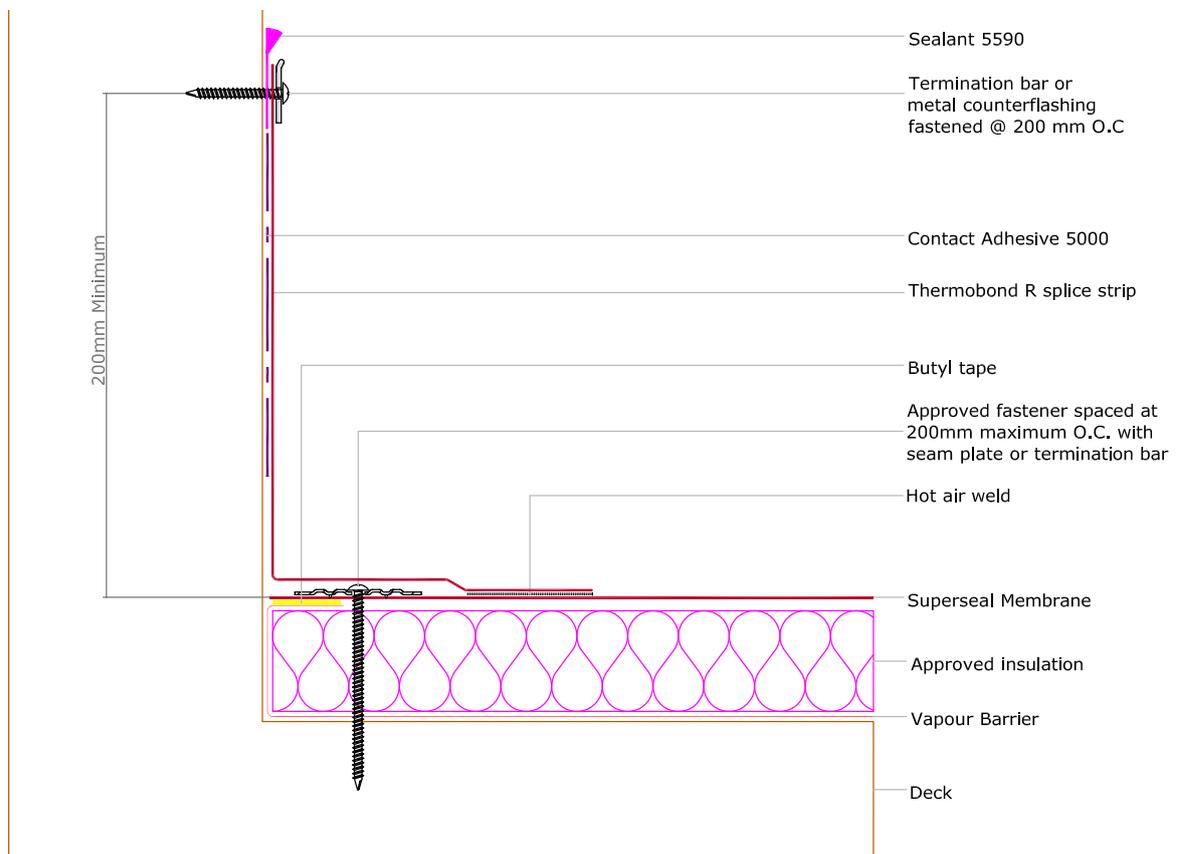


**WALL FLASHING DETAILS**

**SUP-505 Surface mounted counterflashing for a cold roof - mechanically attached**

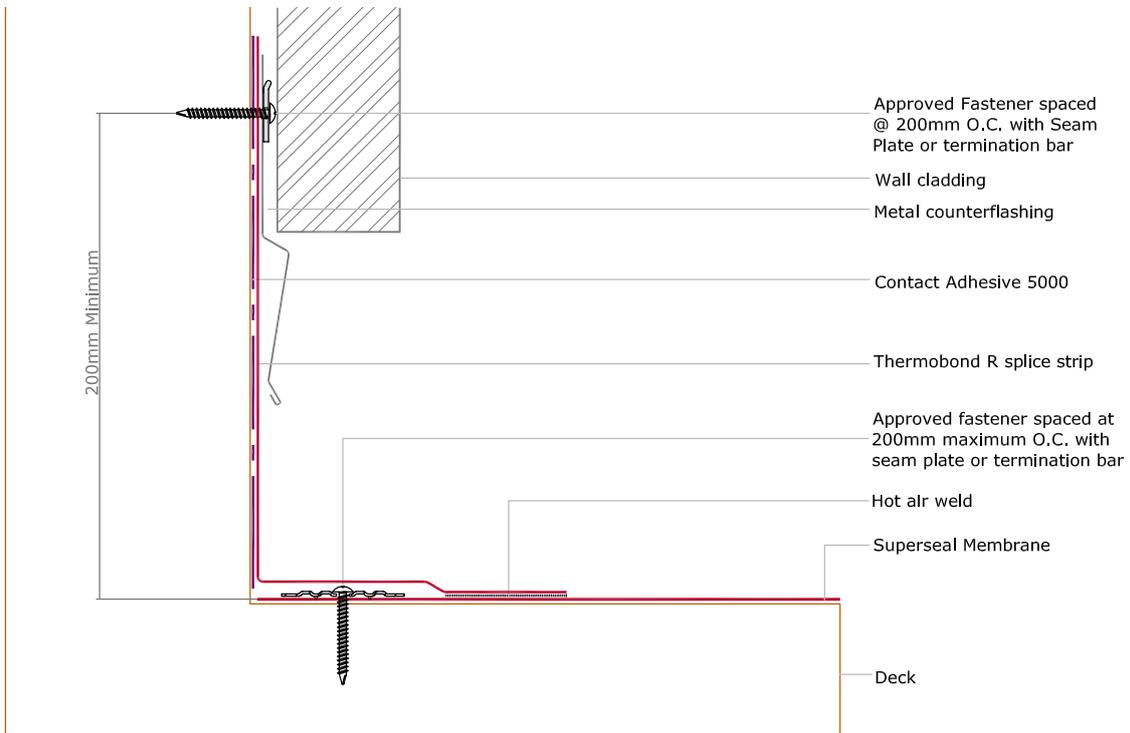


**SUP-506 Surface mounted counterflashing for a warm roof - mechanically attached**

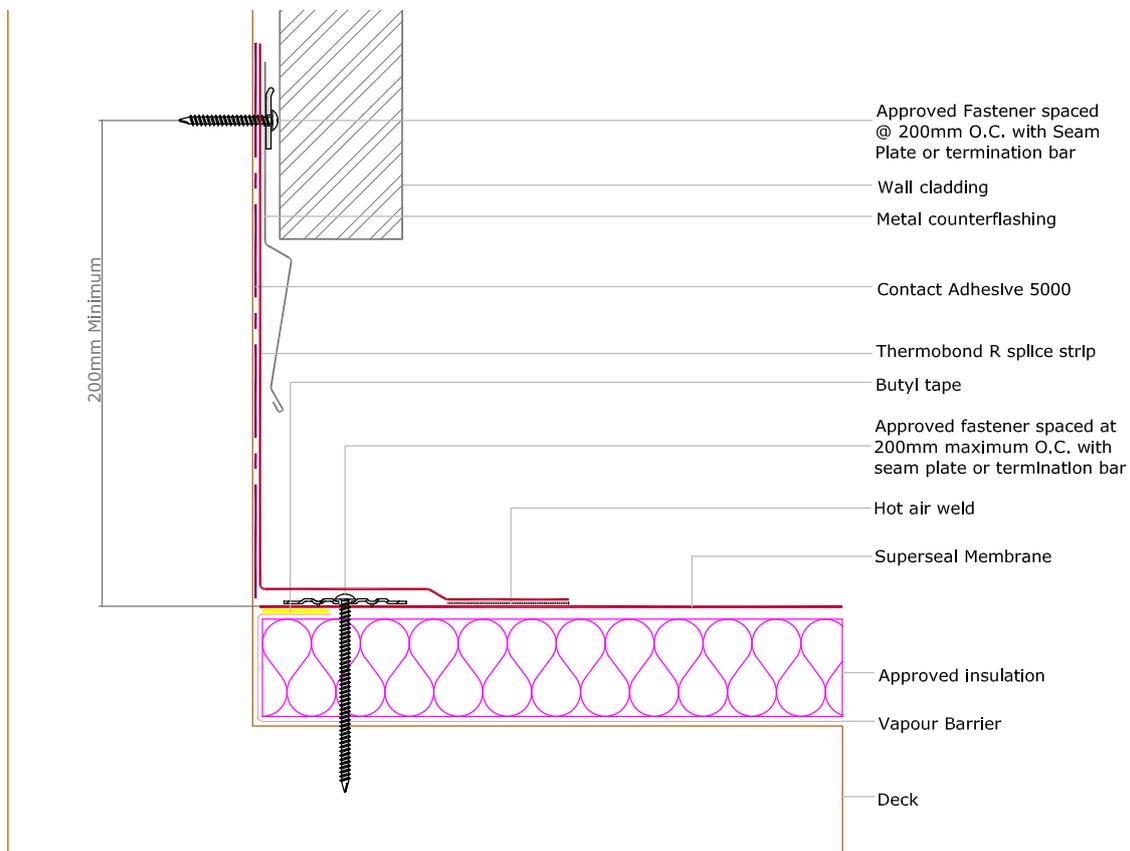


WALL FLASHING DETAILS

**SUP-509 Clad wall panel system counterflashing for a cold roof - mechanically attached**



**SUP-510 Clad wall panel system counterflashing for a warm roof - mechanically attached**

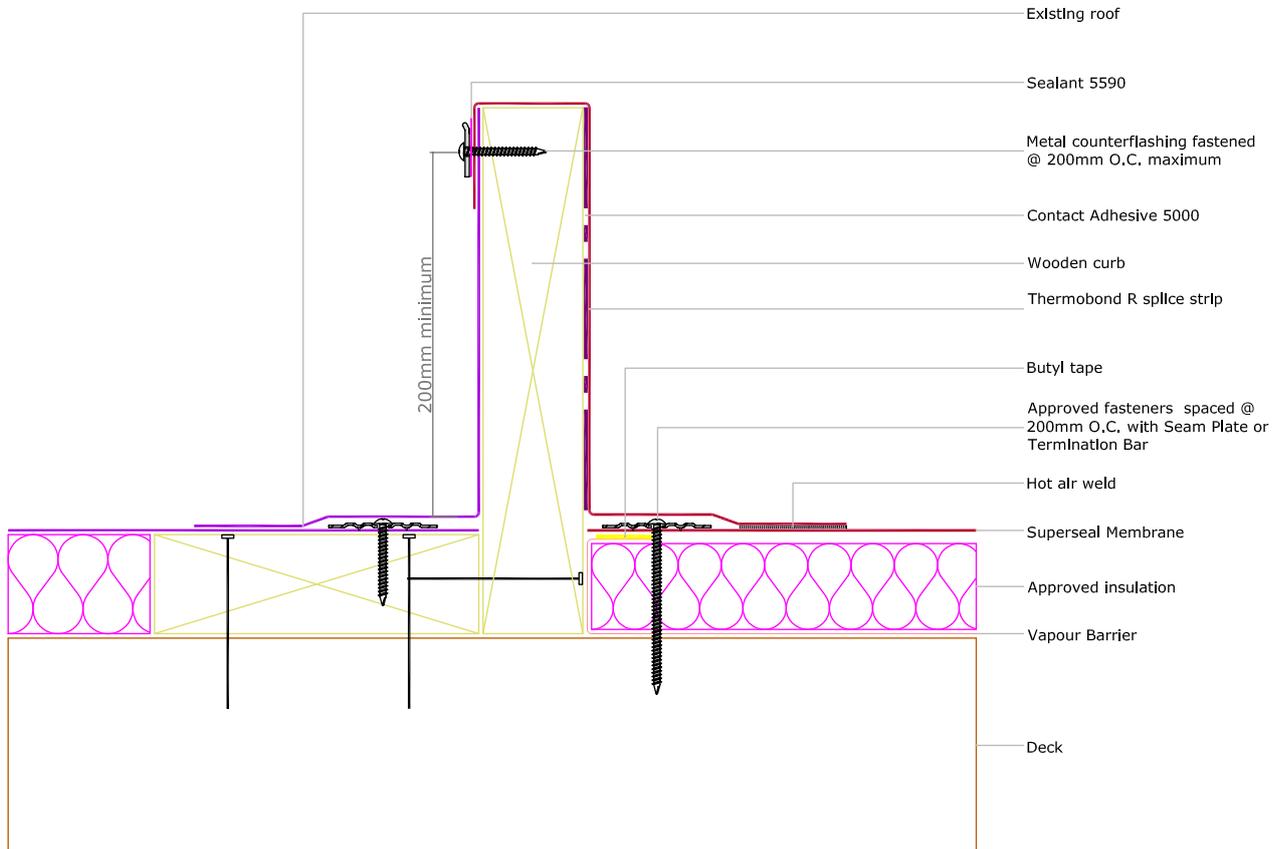


TRANSITION DETAILS

**SUP-601 Multi-System Roof tie-in for a cold roof – mechanically attached**

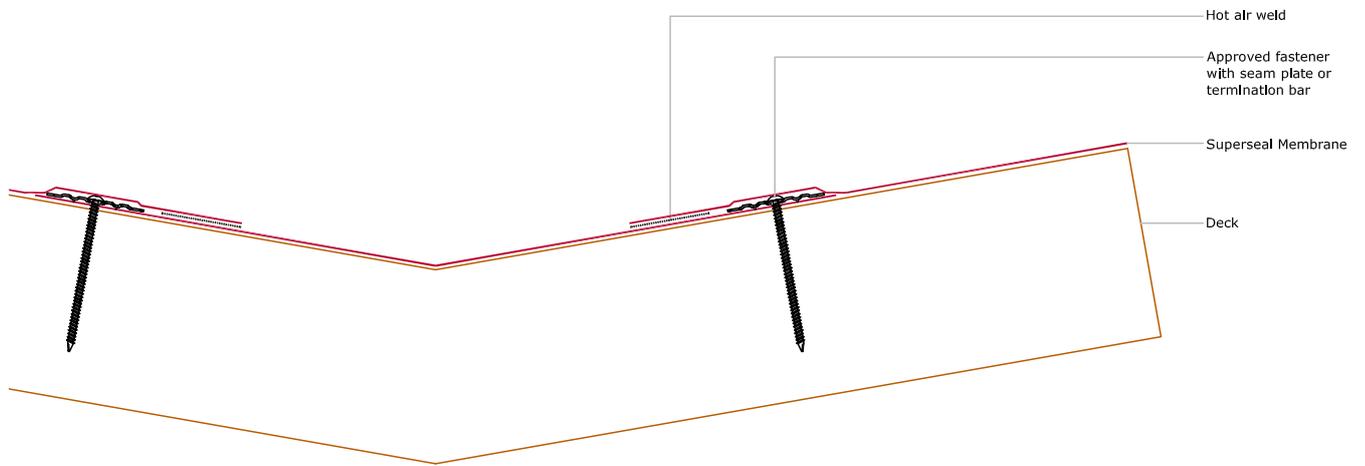


**SUP-602 Multi-System Roof tie-in for a warm roof – mechanically attached**

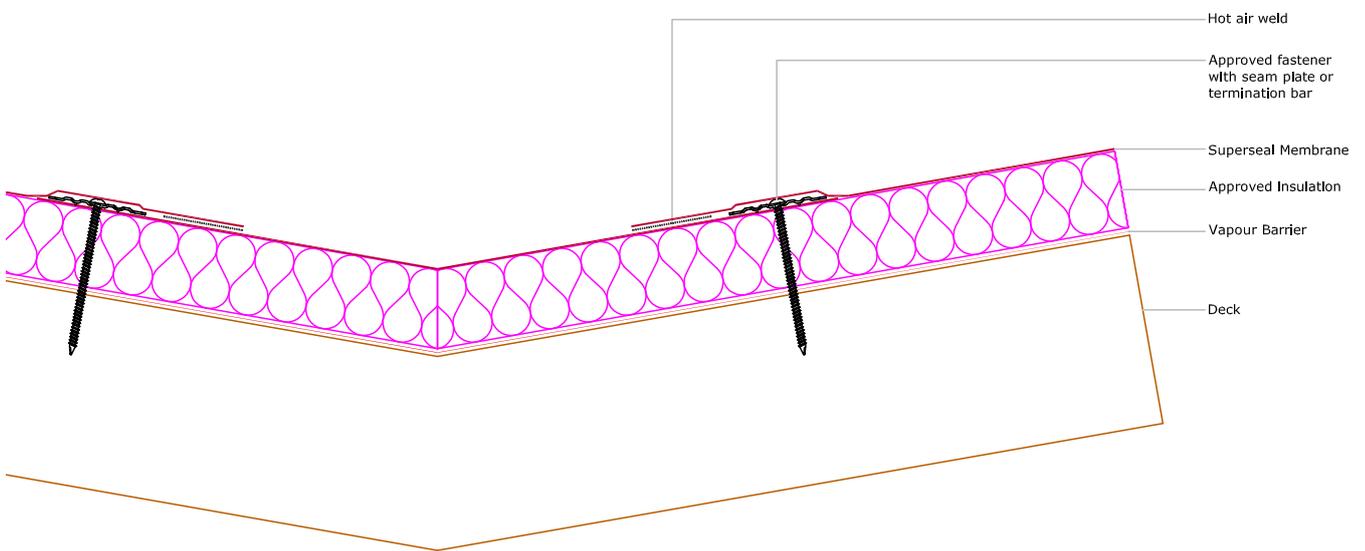


TRANSITION DETAILS

**SUP-605** Valley detail for a cold roof – mechanically attached

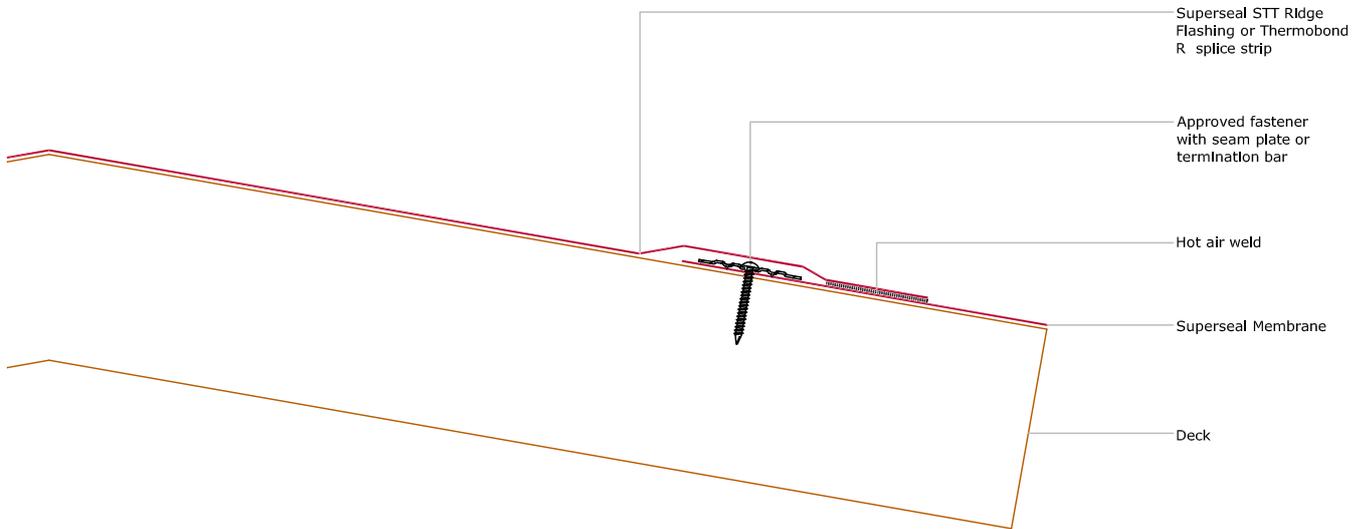


**SUP-606** Valley detail for a warm roof – mechanically attached

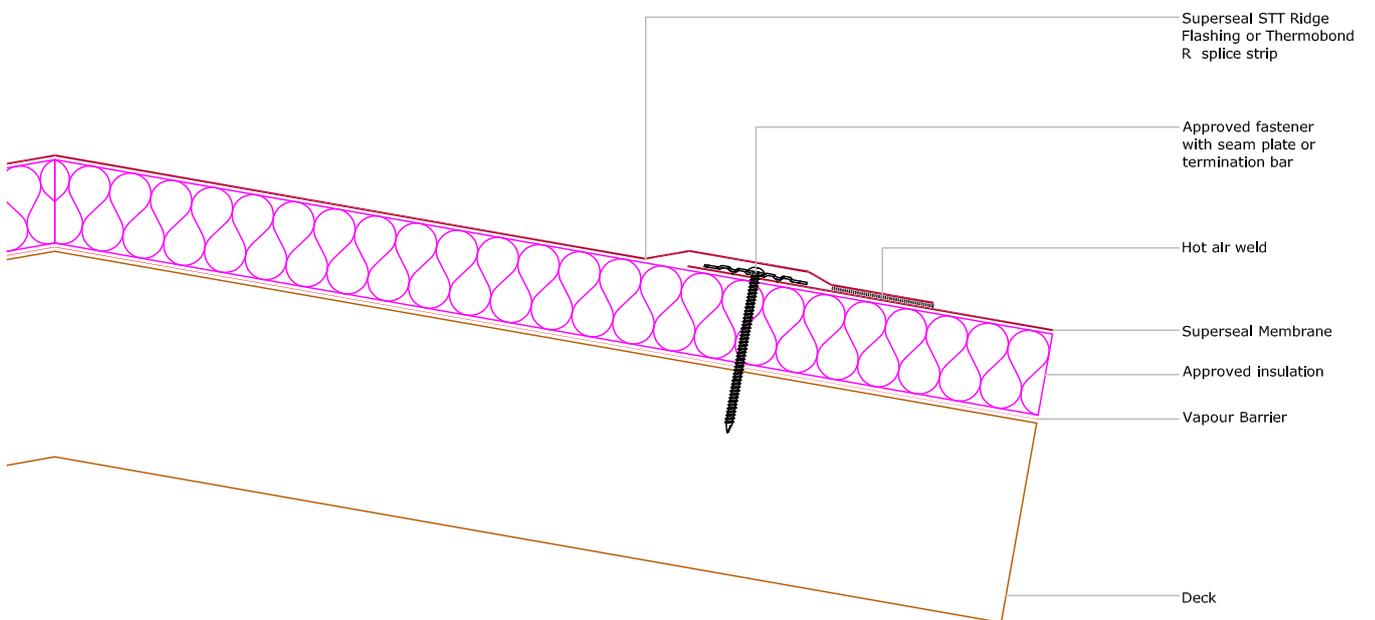


TRANSITION DETAILS

**SUP-609** Ridge detail for a cold roof – mechanically attached

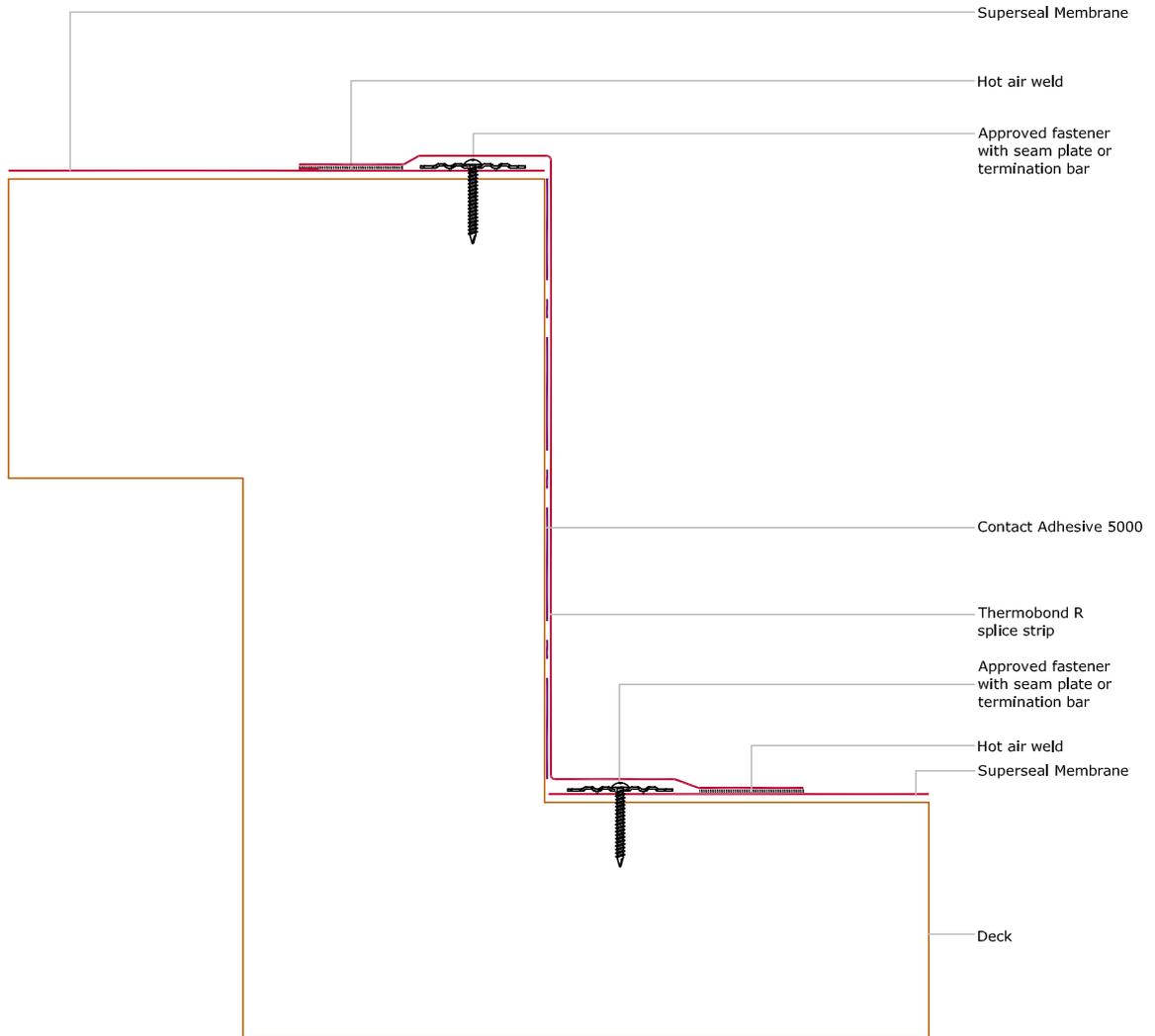


**SUP-610** Ridge detail for a warm roof – mechanically attached



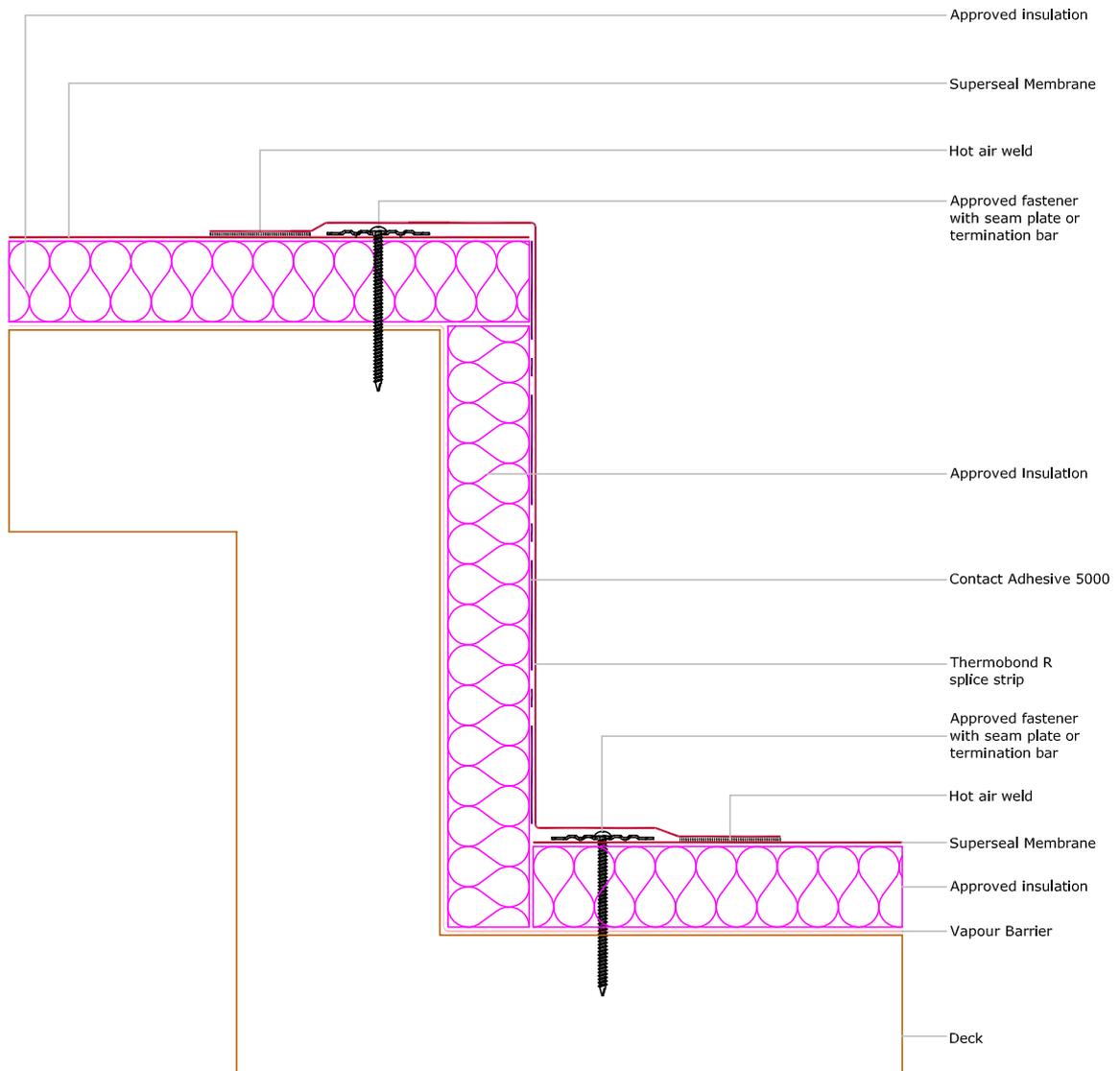
TRANSITION DETAILS

SUP-613 Multi-Level Roof tie-in for a cold roof – mechanically attached



TRANSITION DETAILS

SUP-614 Multi-Level Roof tie-in for a warm roof – mechanically attached



# Construction Drawings

## Superseal Adhered

### COPING DETAILS

<b>SUP-003</b>	Coping detail for a cold roof – adhered
<b>SUP-004</b>	Coping detail for a warm roof – adhered

### EDGE DETAILS

<b>SUP-103</b>	Drip edge detail for a cold roof – adhered
<b>SUP-104</b>	Drip edge detail for a warm roof – adhered
<b>SUP-107</b>	Snap on drip edge detail for a cold roof – adhered
<b>SUP-108</b>	Snap on drip edge detail for a warm roof – adhered
<b>SUP-111</b>	Edge detail with gutter for a cold roof – adhered
<b>SUP-112</b>	Edge detail with gutter for a warm roof – adhered

### PIPE DETAILS

<b>SUP-203</b>	Pipe detail for a cold roof – adhered
<b>SUP-204</b>	Pipe detail for a warm roof – adhered

### DRAIN DETAILS

<b>SUP-303</b>	Drain detail for a cold roof – adhered
<b>SUP-304</b>	Drain detail for a warm roof – adhered
<b>SUP-307</b>	Overflow drain detail for a cold roof – adhered
<b>SUP-308</b>	Overflow drain detail for a warm roof – adhered

### EXPANSION JOINT DETAILS

<b>SUP-403</b>	Expansion joint for a cold roof – adhered
<b>SUP-404</b>	Expansion joint for a warm roof – adhered

# Construction Drawings

## Superseal Adhered

### WALL FLASHING DETAILS

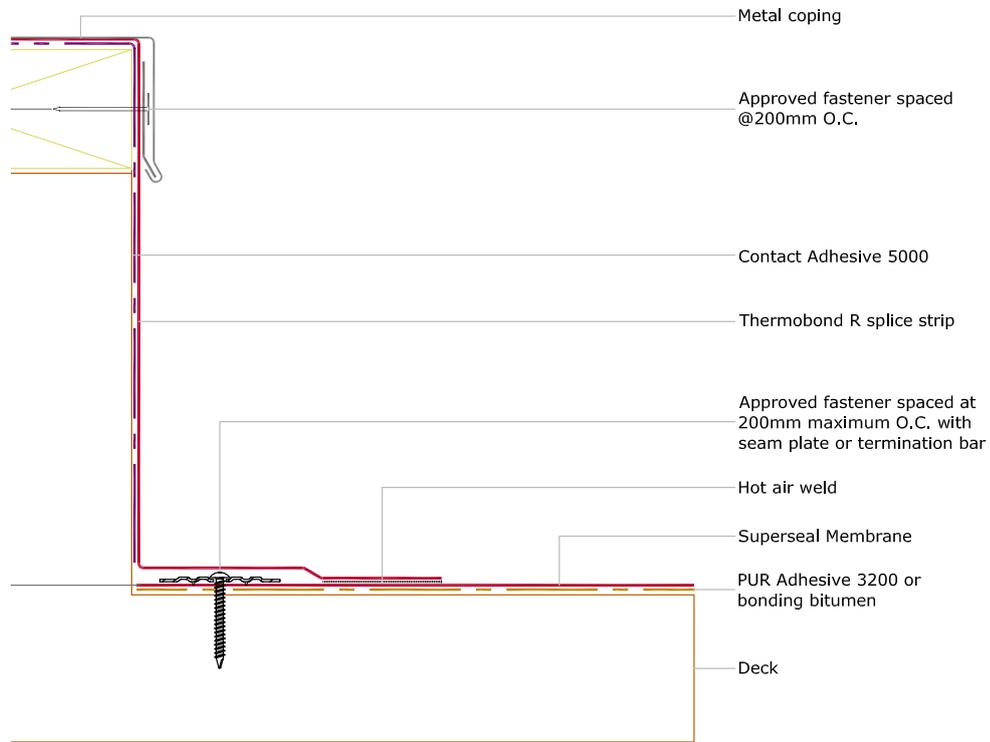
<b>SUP-503</b>	Reglet counterflashing for a cold roof – adhered
<b>SUP-504</b>	Reglet counterflashing for a warm roof – adhered
<b>SUP-507</b>	Surface mounted counterflashing for a cold roof – adhered
<b>SUP-508</b>	Surface mounted counterflashing for a warm roof – adhered
<b>SUP-511</b>	Clad wall panel system counterflashing for a cold roof – adhered
<b>SUP-512</b>	Clad wall panel system counterflashing for a warm roof – adhered

### TRANSITION DETAILS

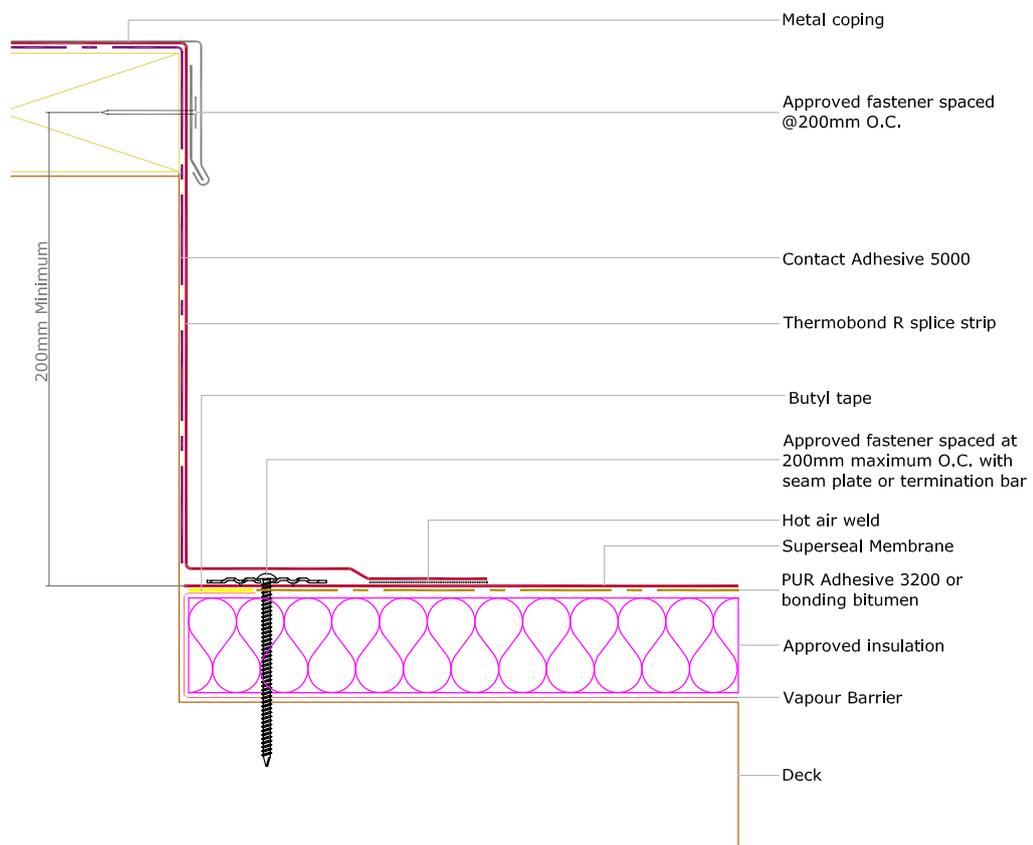
<b>SUP-603</b>	Multi-System Roof tie-in for a cold roof – adhered
<b>SUP-604</b>	Multi-System Roof tie-in for a warm roof – adhered
<b>SUP-607</b>	Valley detail for a cold roof – adhered
<b>SUP-608</b>	Valley detail for a warm roof – adhered
<b>SUP-611</b>	Ridge detail for a cold roof – adhered
<b>SUP-612</b>	Ridge detail for a warm roof – adhered
<b>SUP-615</b>	Multi-Level Roof tie-in for a cold roof – adhered
<b>SUP-616</b>	Multi-Level Roof tie-in for a warm roof – adhered

COPING DETAILS

**SUP-003** Coping detail for a cold roof - adhered

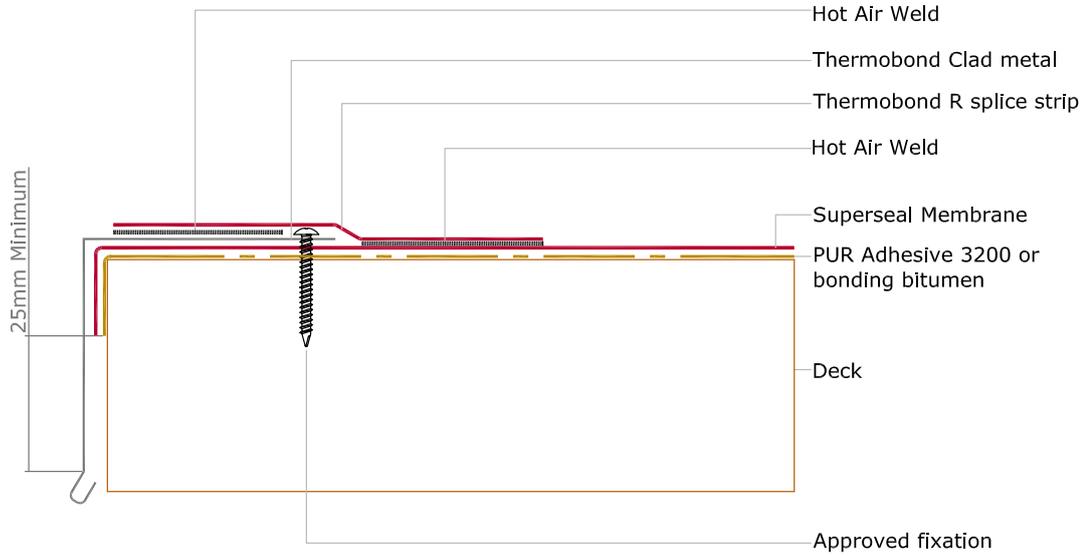


**SUP-004** Coping detail for a warm roof – adhered



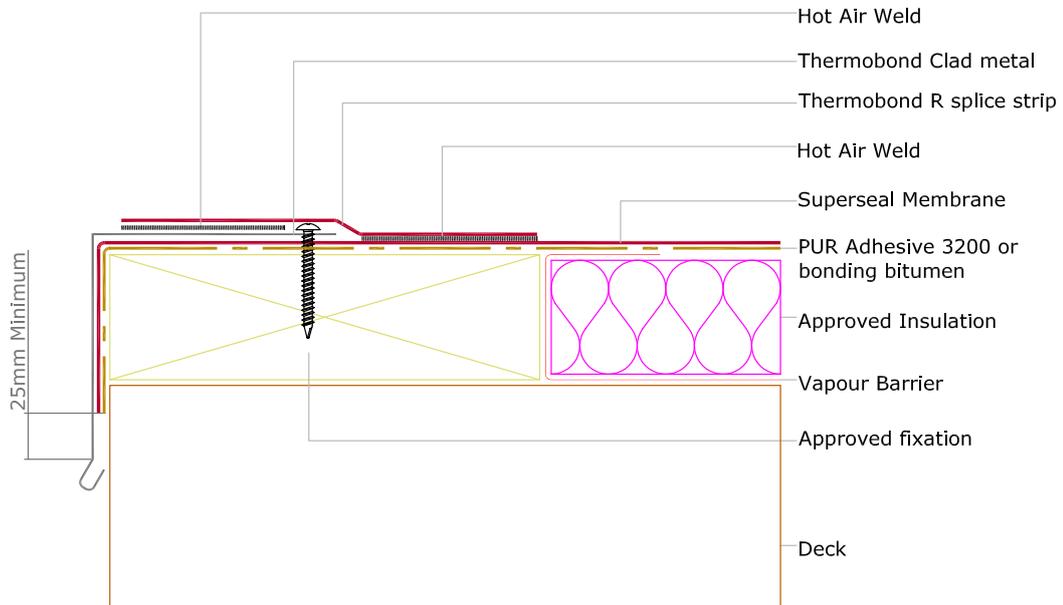
EDGE DETAILS

**SUP-103 Drip edge detail for a cold roof – adhered**



This detail is only to be used where uncontrolled waterflow over the side of the building is acceptable.

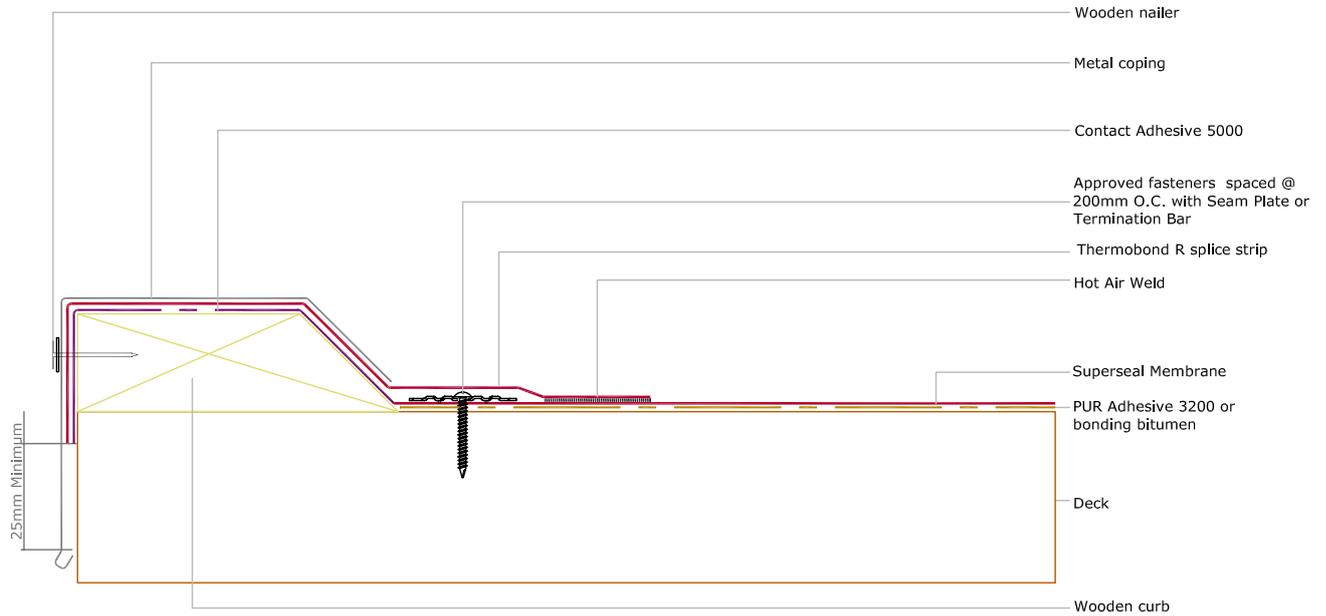
**SUP-104 Drip edge detail for a warm roof – adhered**



This detail is only to be used where uncontrolled waterflow over the side of the building is acceptable.

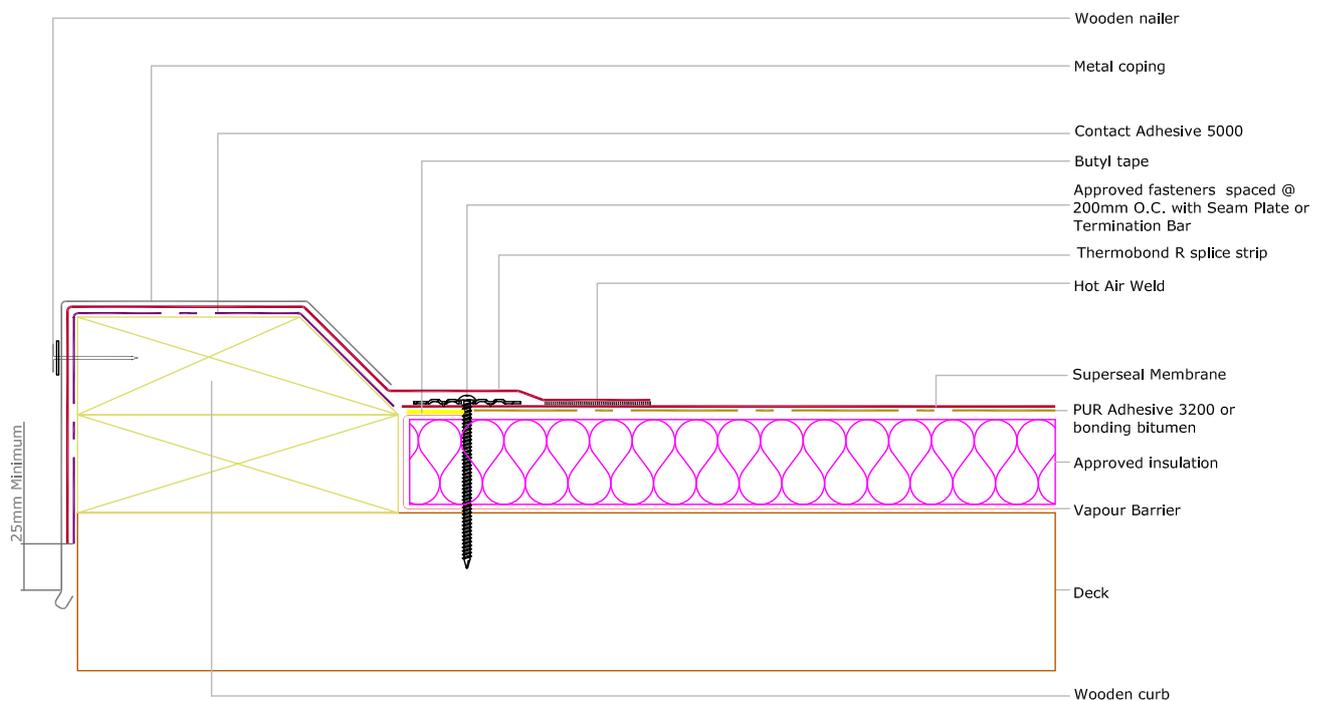
EDGE DETAILS

**SUP-107 Snap on drip edge detail for a cold roof – adhered**



This detail can alternatively be made by fixating the Superseal Membrane **under** the curb itself.

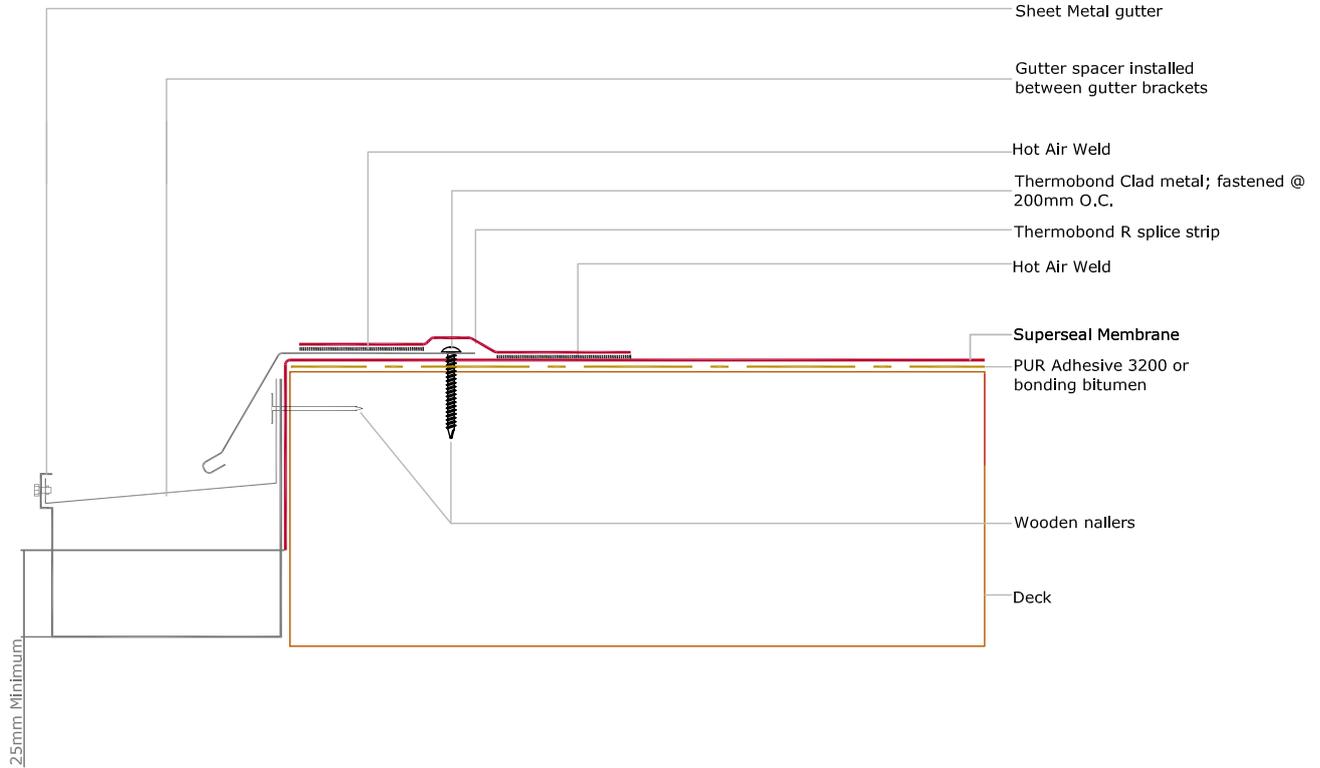
**SUP-108 Snap on drip edge detail for a warm roof – adhered**



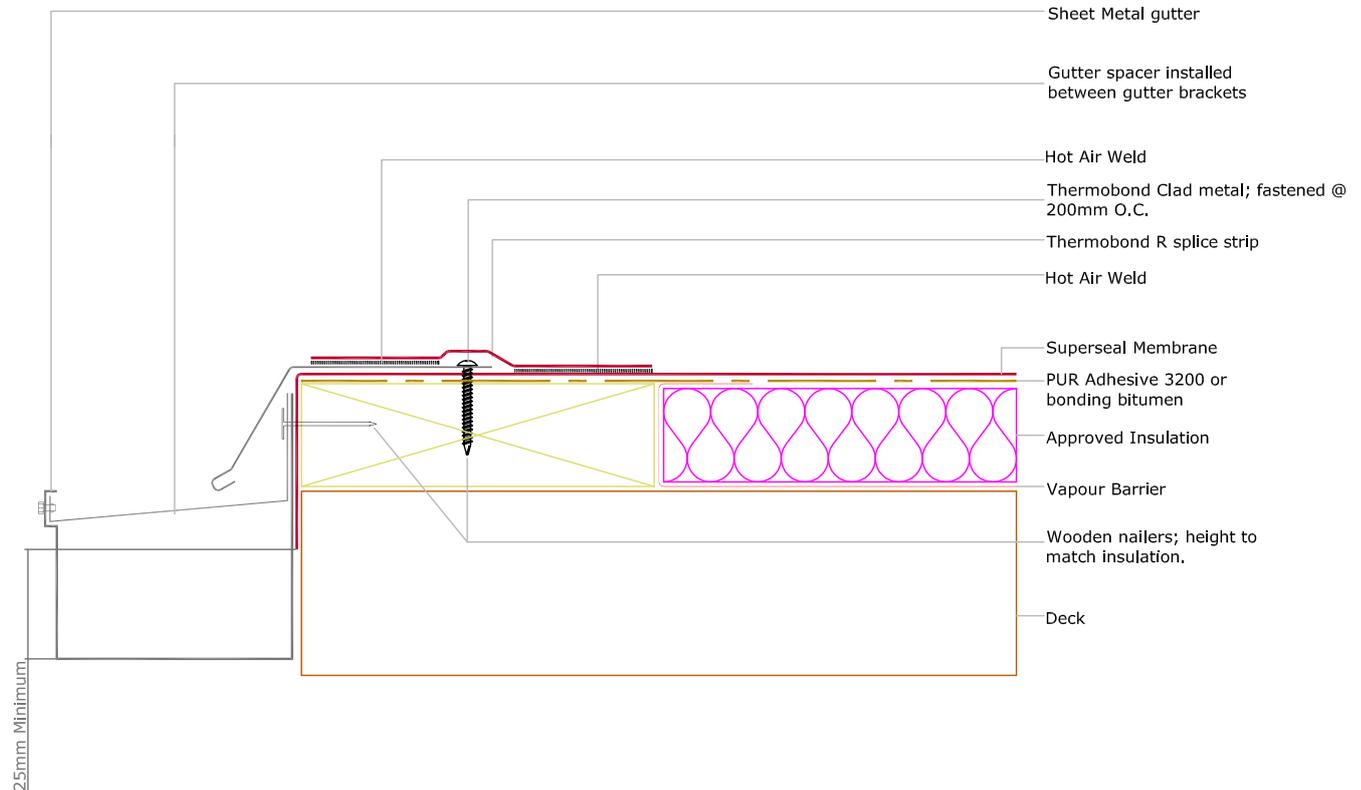
This detail can alternatively be made by fixating the Superseal Membrane **under** the curb itself.

EDGE DETAILS

**SUP-111** Edge detail with gutter for a cold roof – adhered

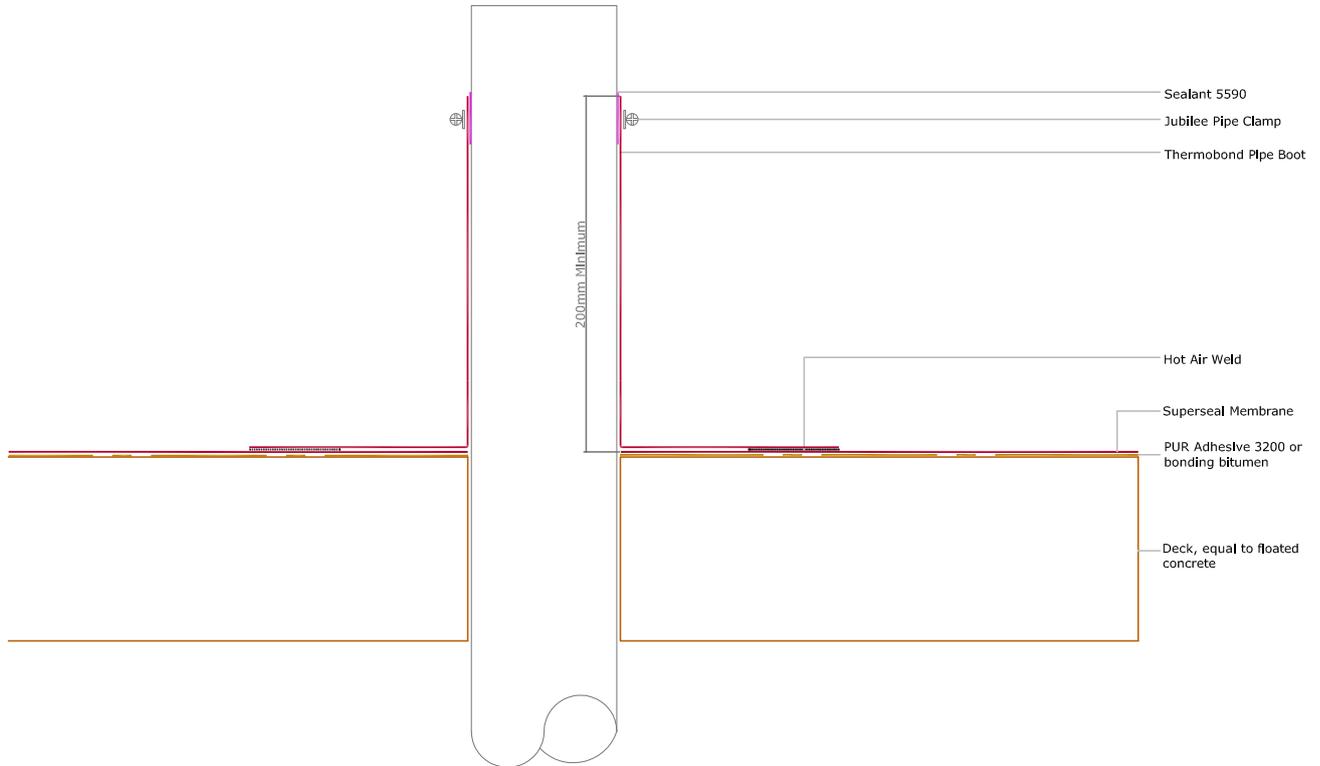


**SUP-112** Edge detail with gutter for a warm roof – adhered

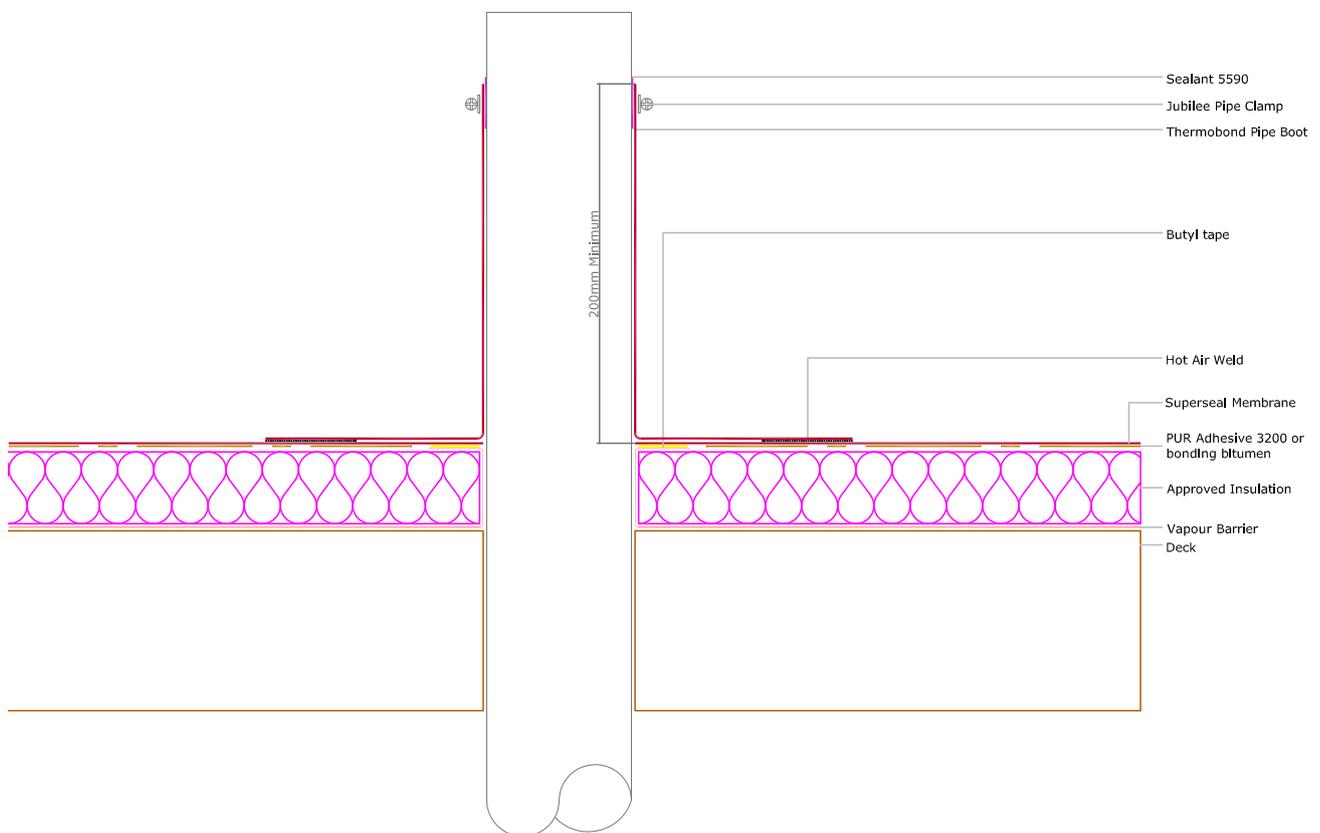


PIPE DETAILS

**SUP-203** Pipe detail for a cold roof – adhered

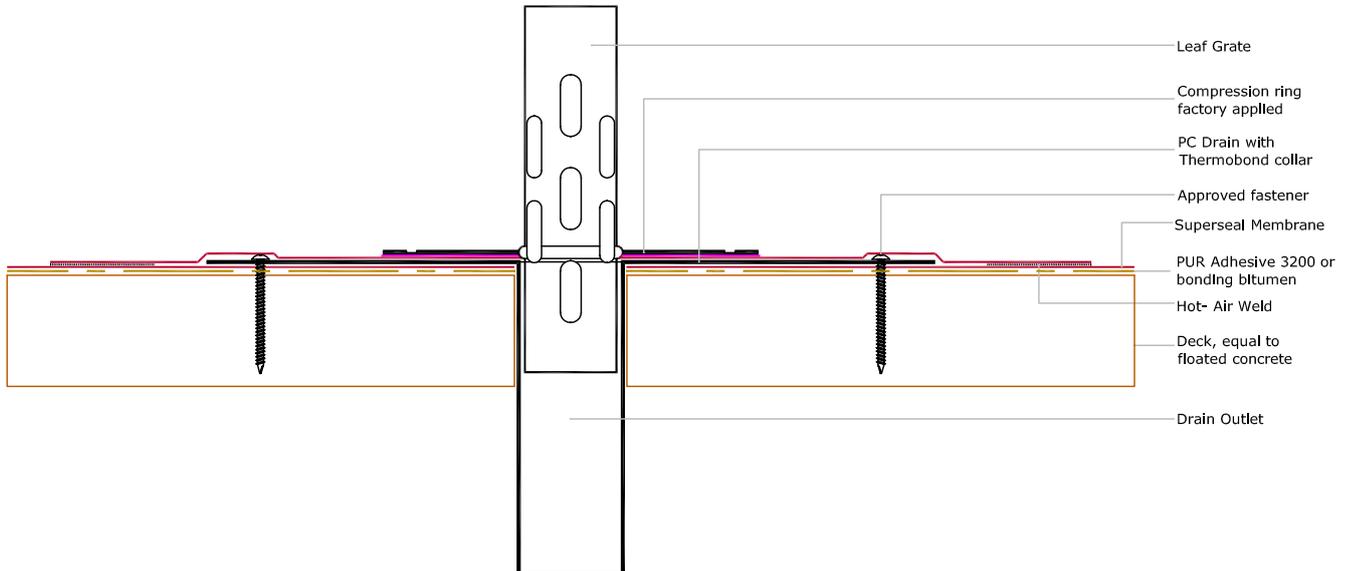


**SUP-204** Pipe detail for a warm roof – adhered

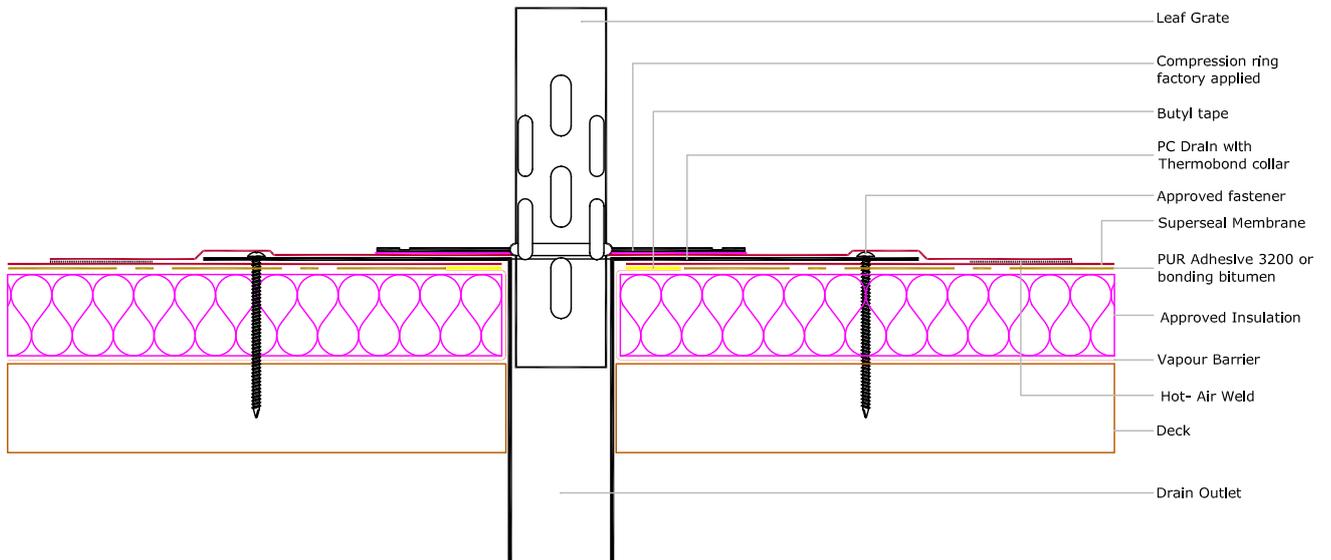


**DRAIN DETAILS**

**SUP-303 Drain detail for a cold roof – adhered**

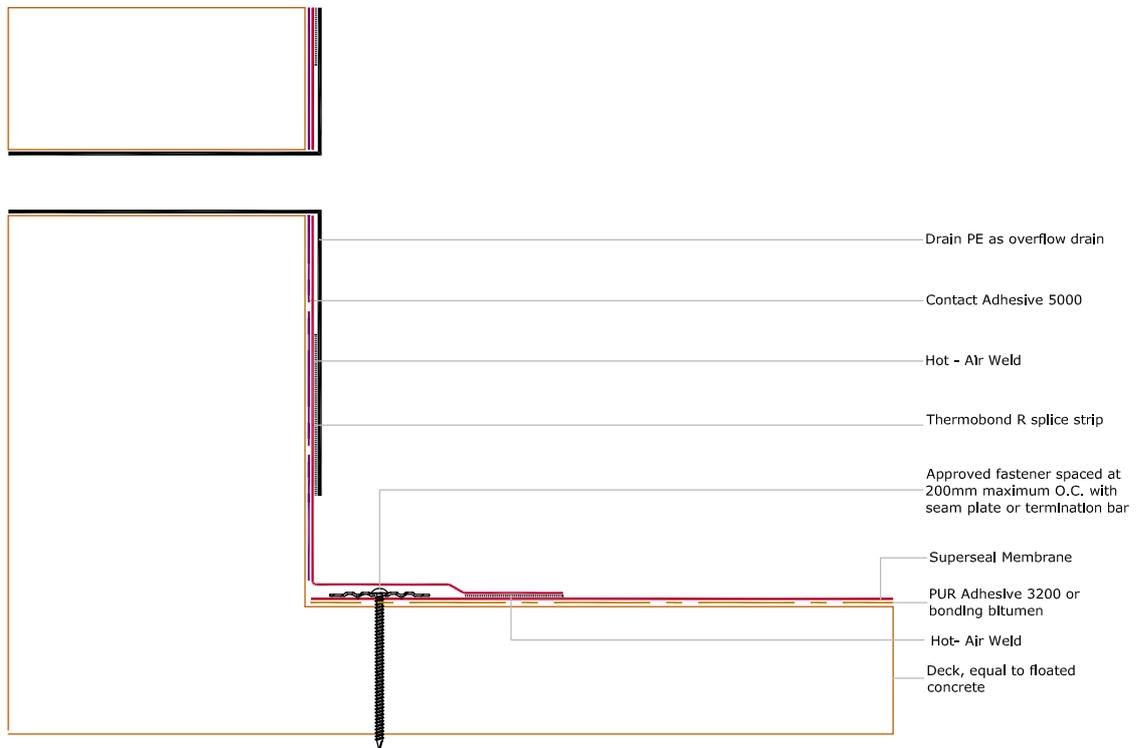


**SUP-304 Drain detail for a warm roof – adhered**

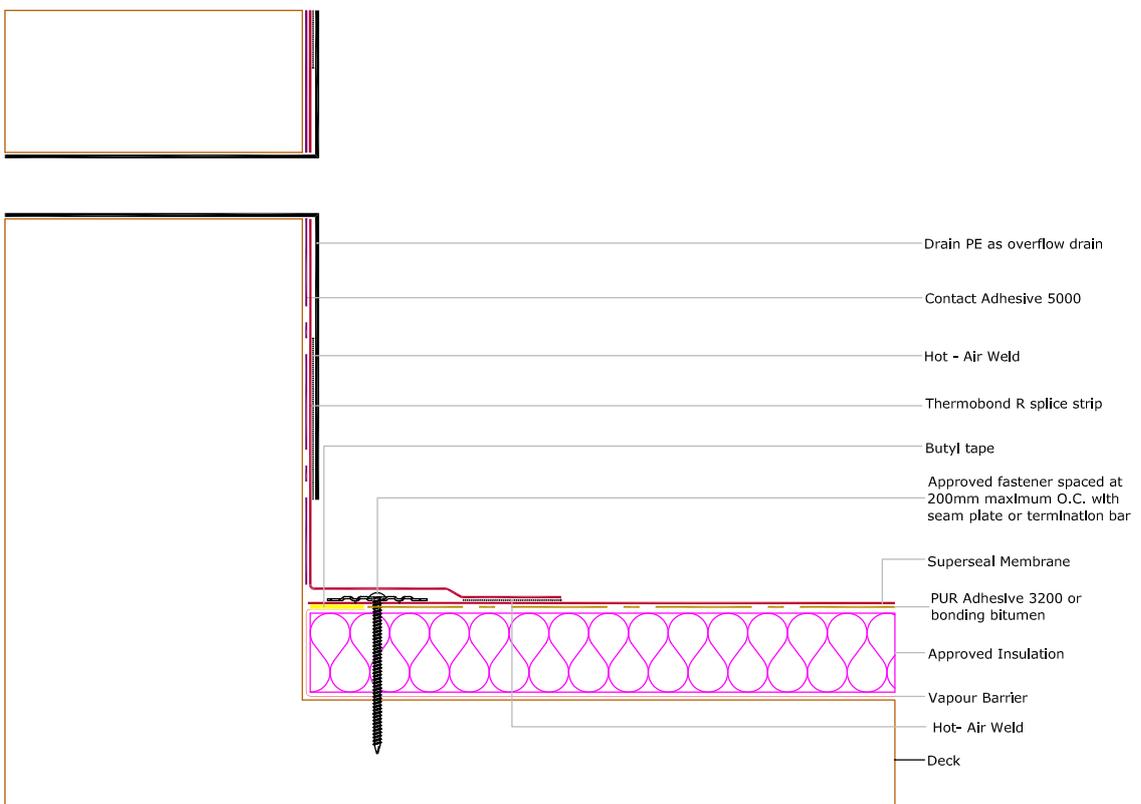


**DRAIN DETAILS**

**SUP-307 Overflow drain detail for a cold roof – adhered**

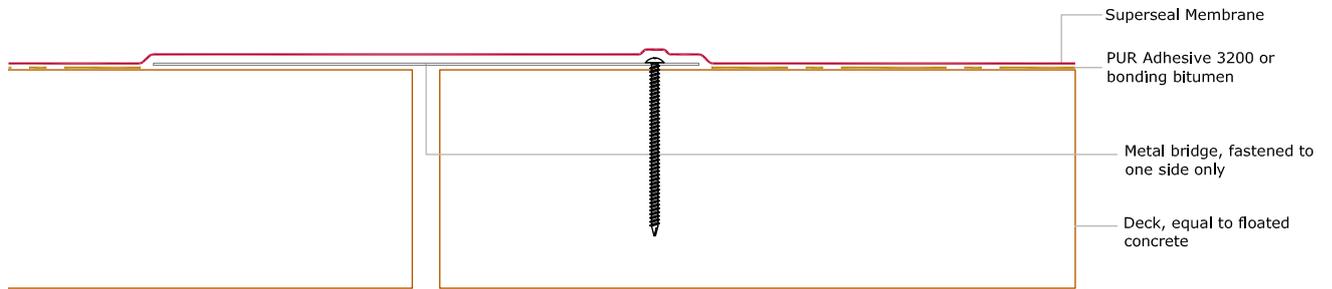


**SUP-308 Overflow drain detail for a warm roof – adhered**

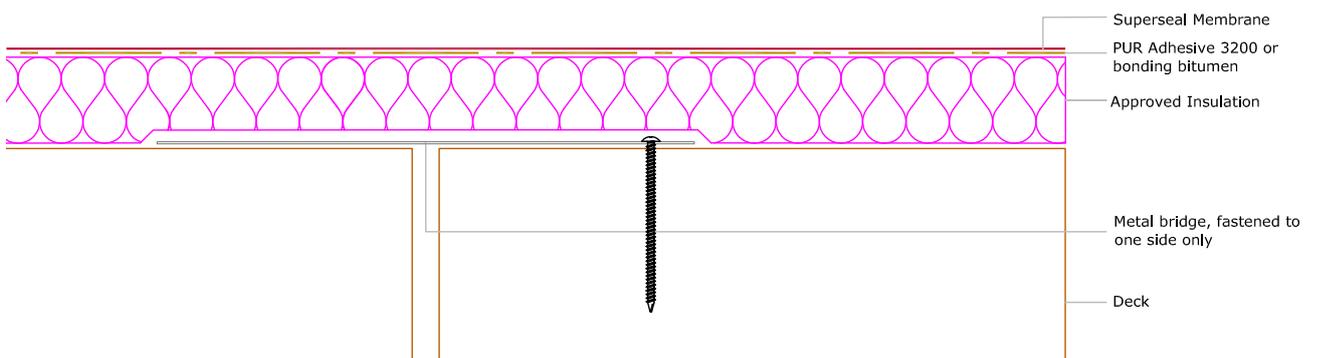


## EXPANSION JOINT DETAILS

**SUP-403** Expansion joint for a cold roof - adhered

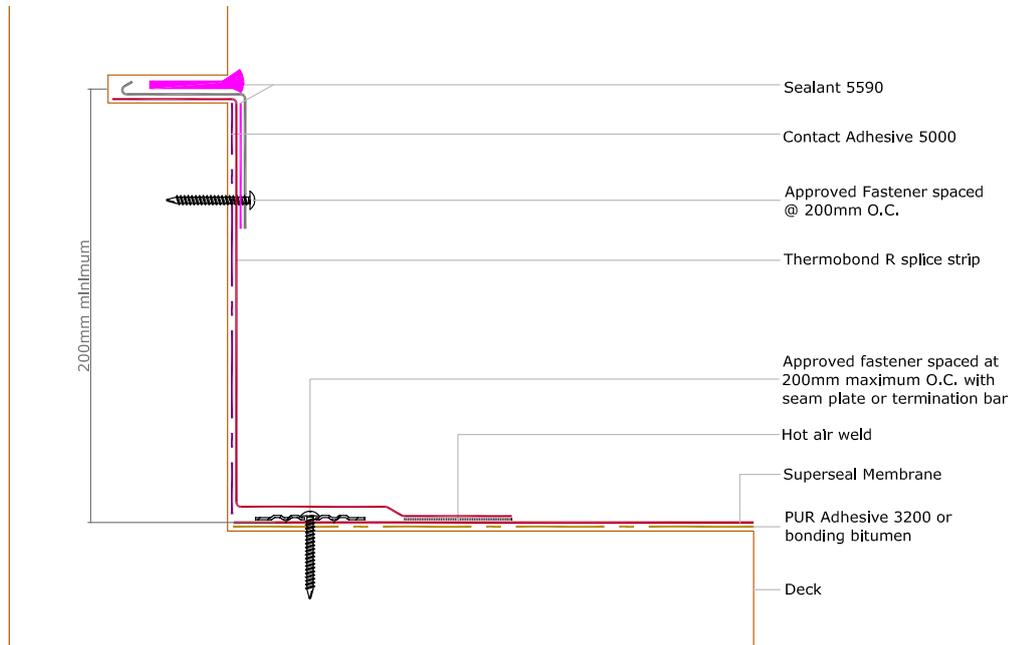


**SUP-404** Expansion joint for a warm roof – adhered

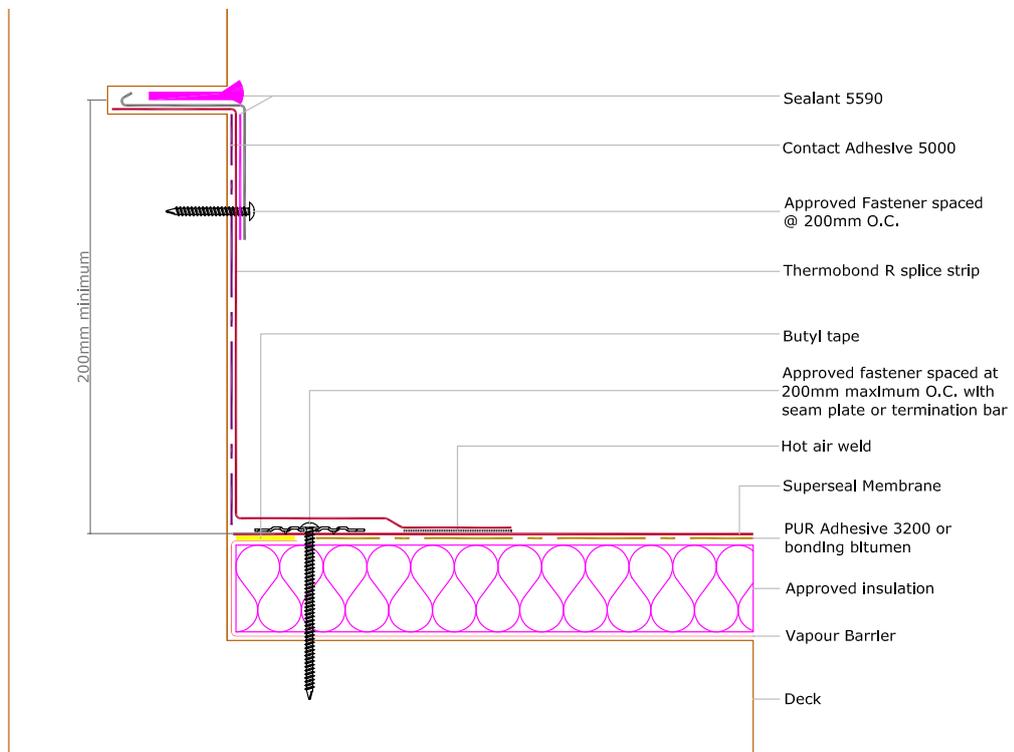


WALL FLASHING DETAILS

**SUP-503 Reglet counterflashing for a cold roof – adhered**

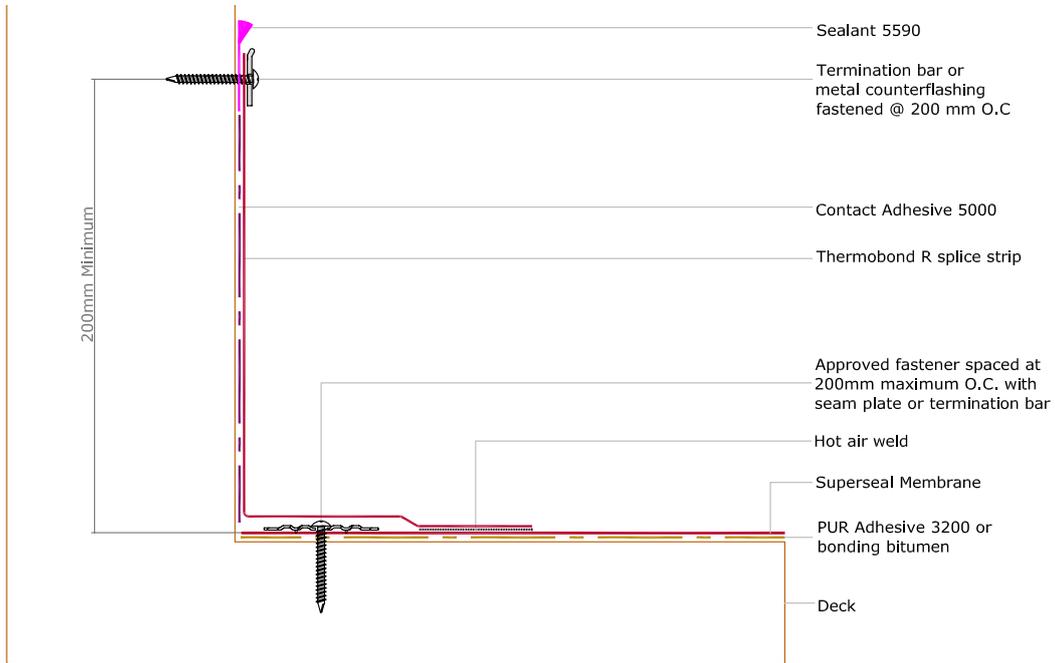


**SUP-504 Reglet counterflashing for a warm roof – adhered**

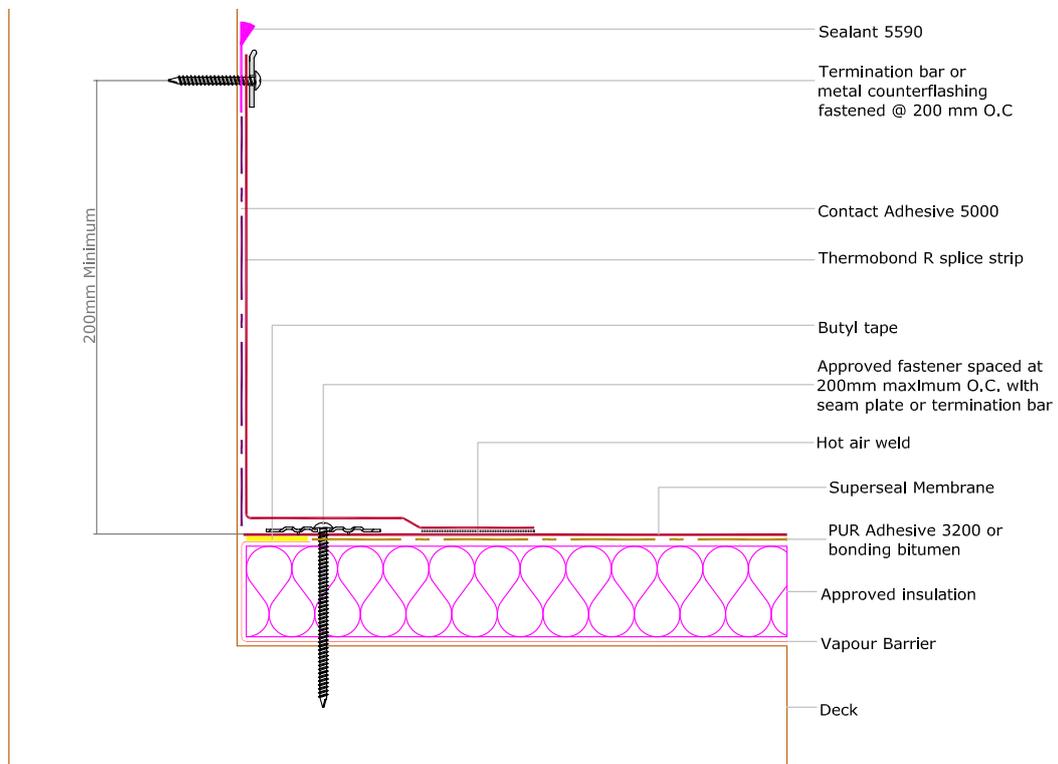


WALL FLASHING DETAILS

**SUP-507 Surface mounted counterflashing for a cold roof – adhered**

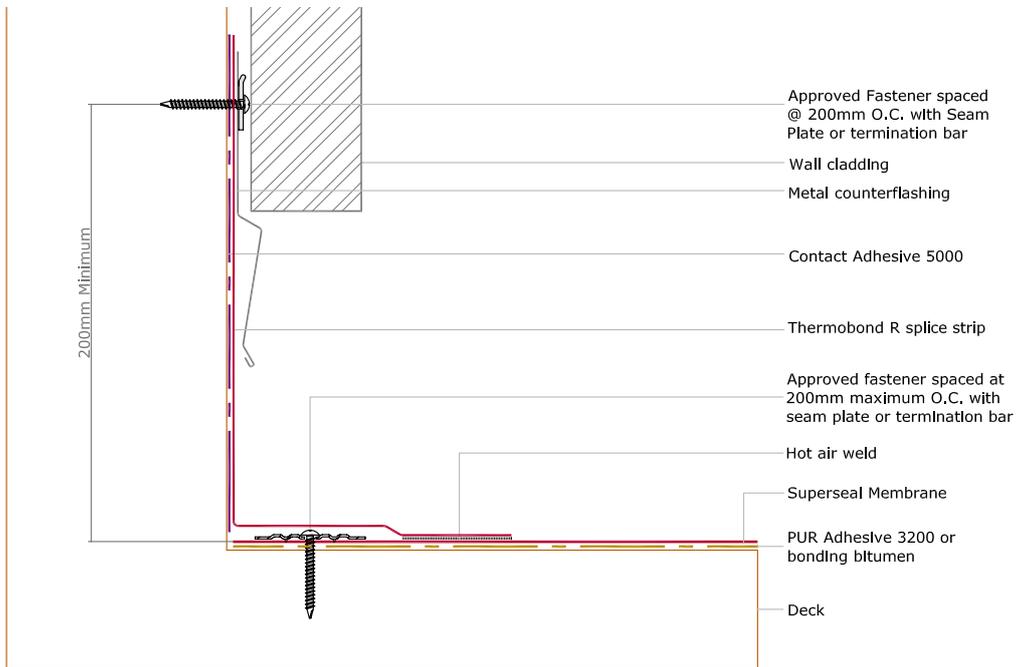


**SUP-508 Surface mounted counterflashing for a warm roof – adhered**

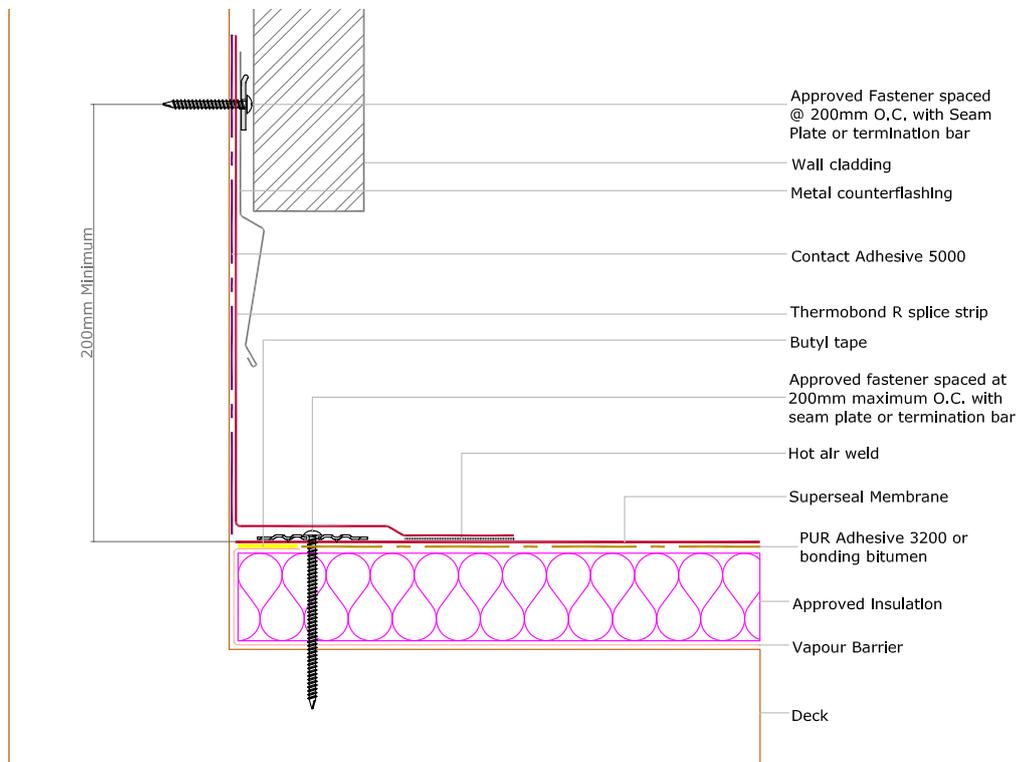


WALL FLASHING DETAILS

**SUP-511 Clad wall panel system counterflashing for a cold roof – adhered**



**SUP-512 Clad wall panel system counterflashing for a warm roof – adhered**

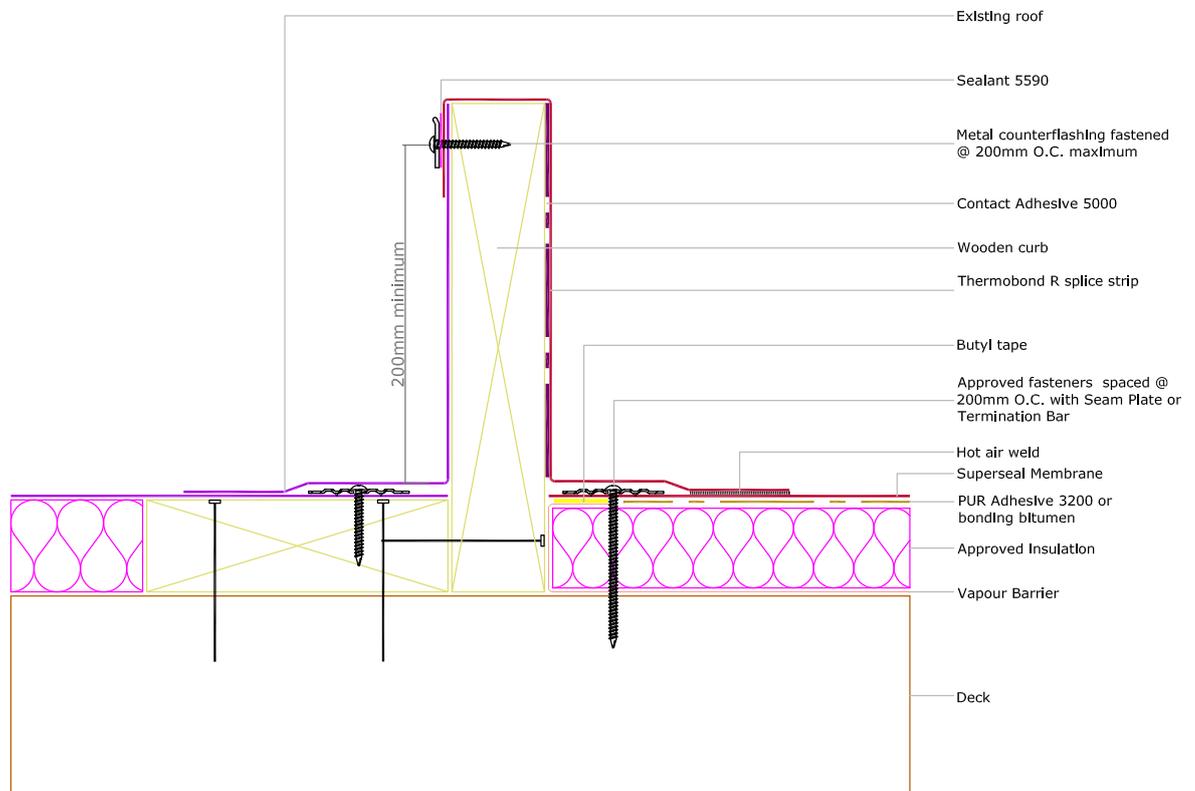


TRANSITION DETAILS

**SUP-603 Multi-System Roof tie-in for a cold roof – adhered**

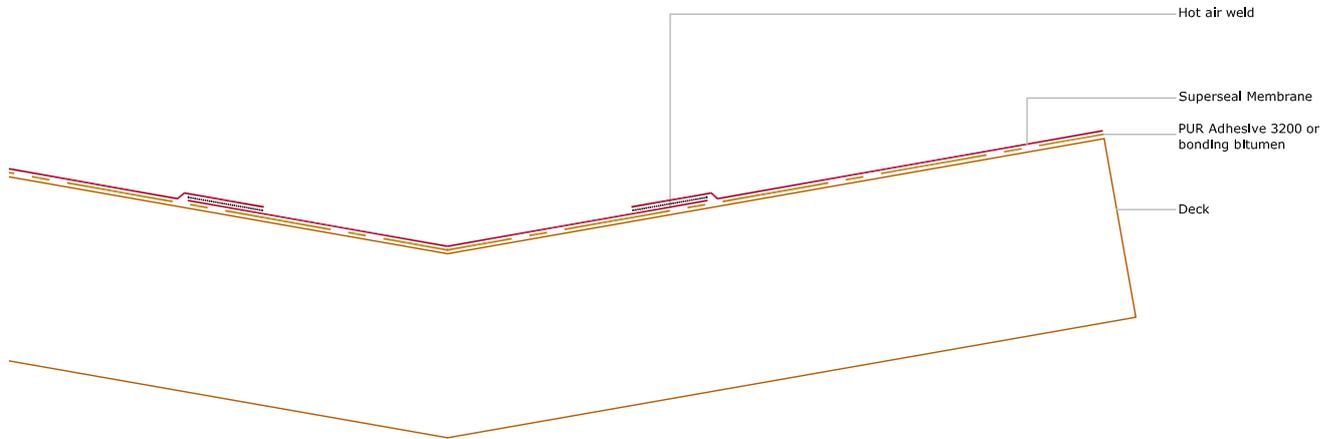


**SUP-604 Multi-System Roof tie-in for a warm roof – adhered**

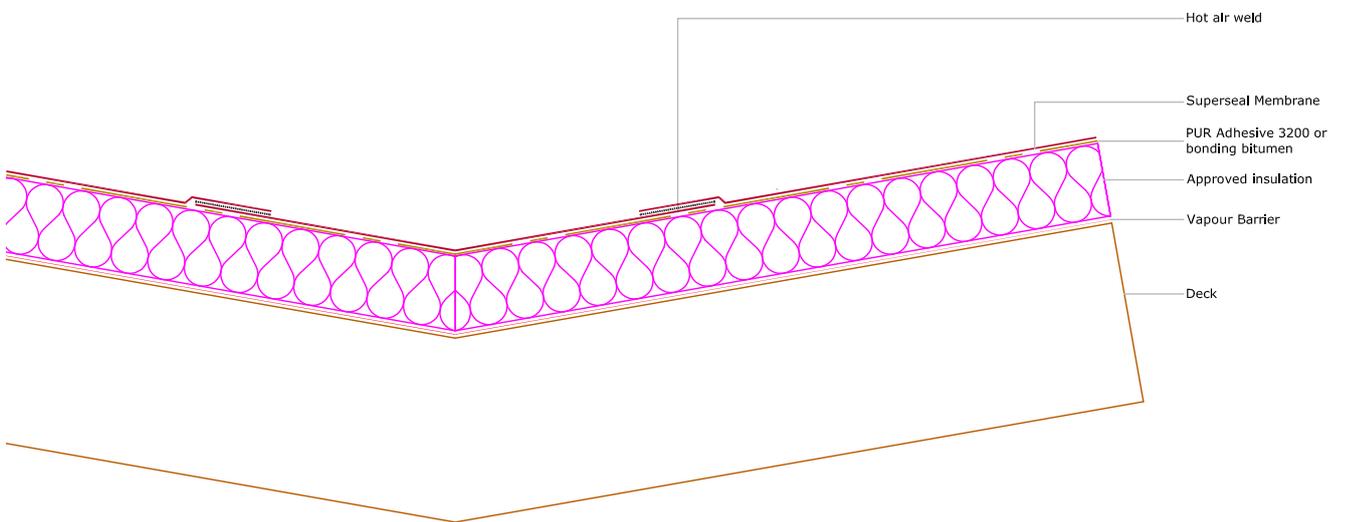


## TRANSITION DETAILS

**SUP-607** Valley detail for a cold roof – adhered

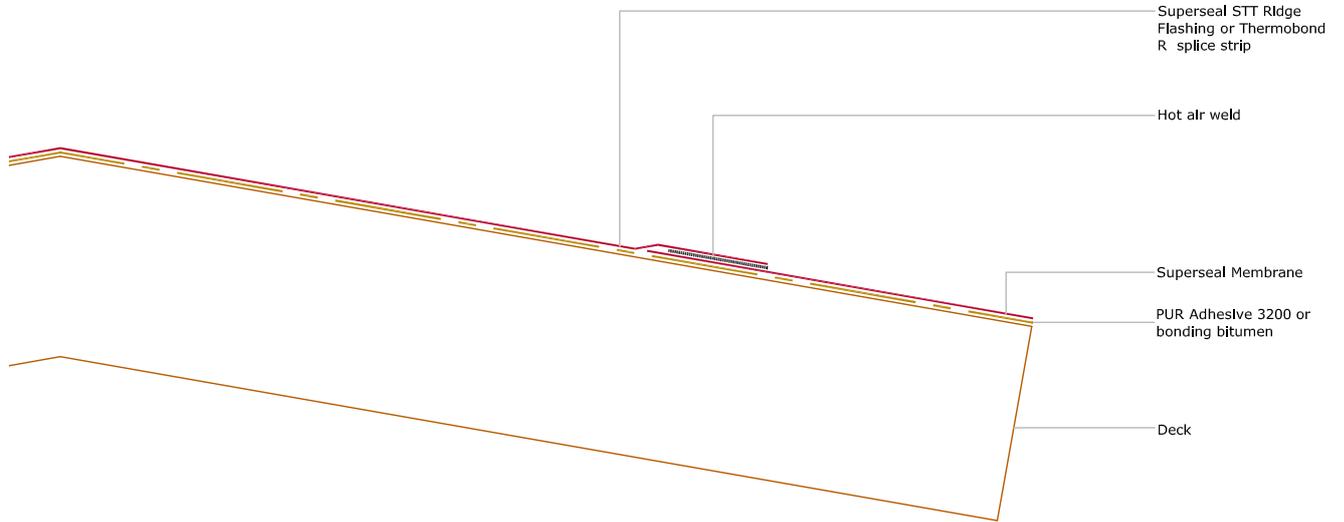


**SUP-608** Valley detail for a warm roof – adhered

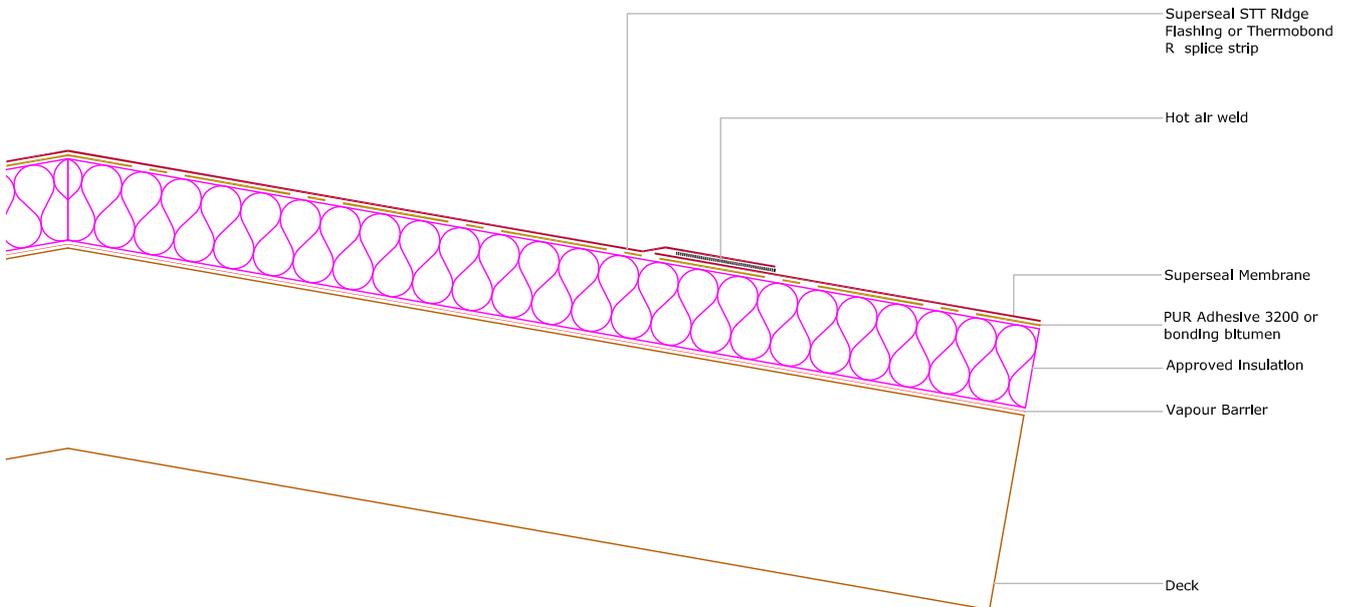


## TRANSITION DETAILS

**SUP-611** Ridge detail for a cold roof – adhered

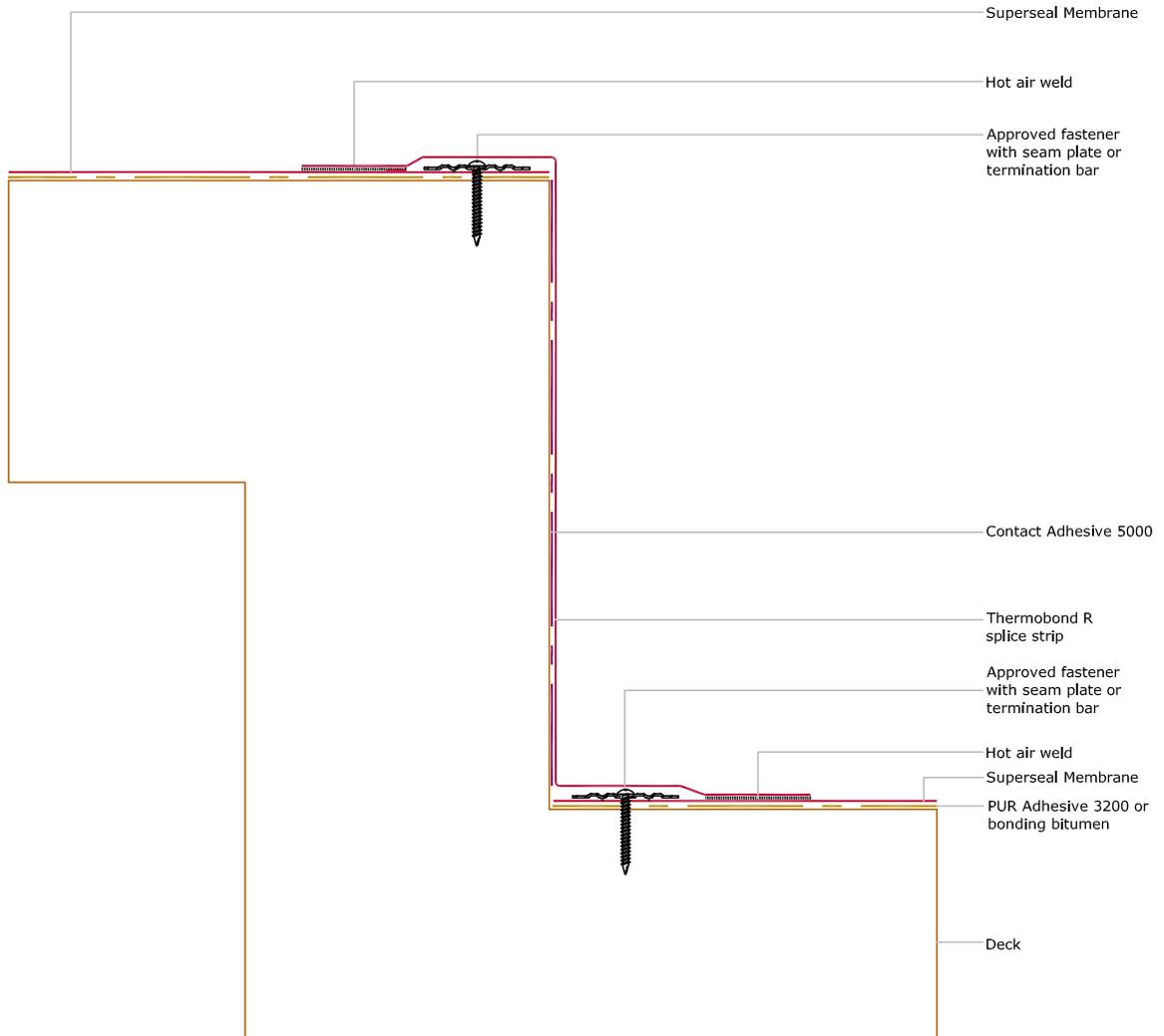


**SUP-612** Ridge detail for a warm roof – adhered



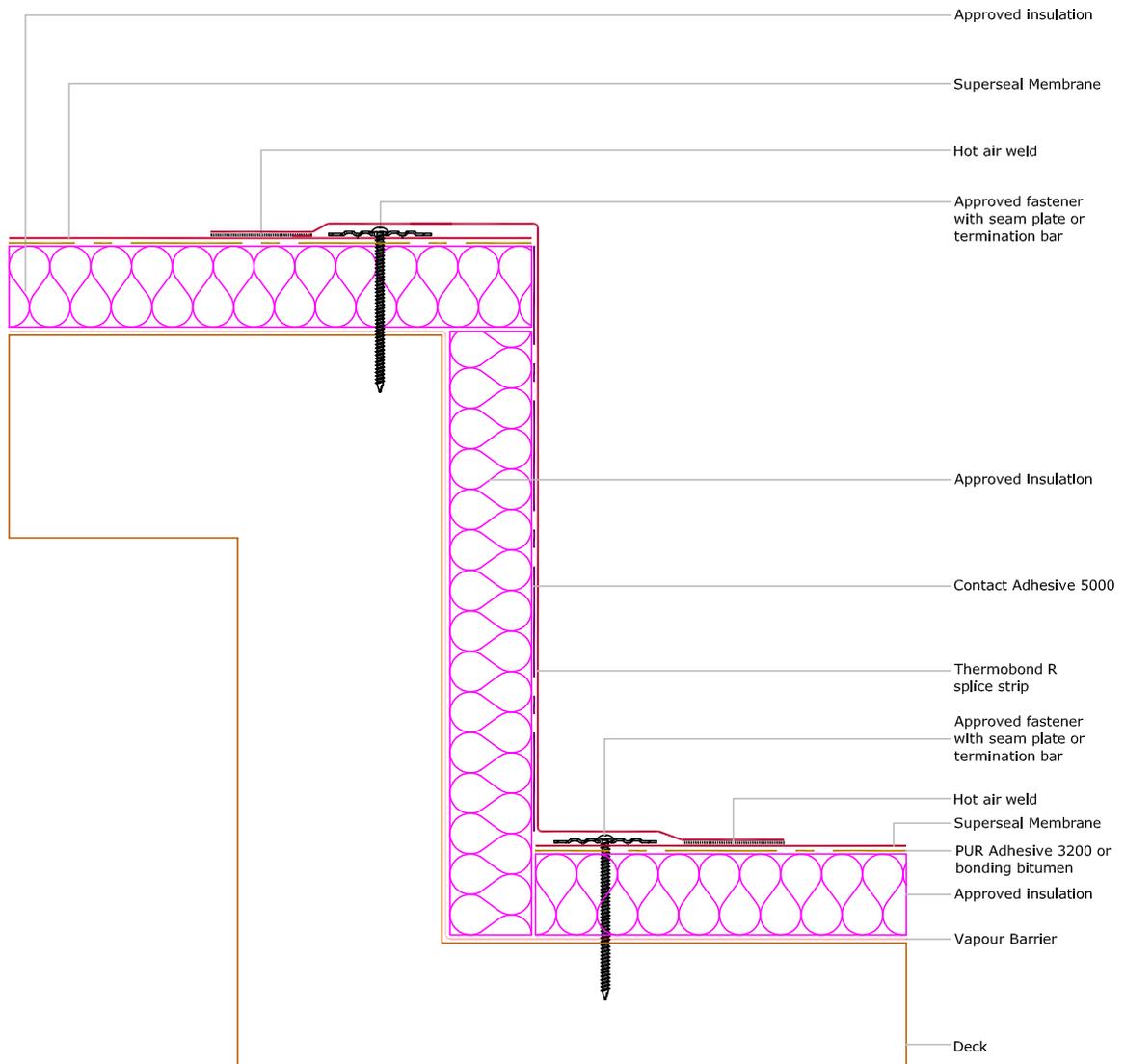
TRANSITION DETAILS

SUP-615 Multi-Level Roof tie-in for a cold roof – adhered



TRANSITION DETAILS

SUP-616 Multi-Level Roof tie-in for a warm roof – adhered



# Superseal Roofing Reference

## Volvo Lastvagnar AB, Tuve, Gothenburg, Sweden



**Volvo Lastvagnar in Gothenburg, the main truck assembly plant of Volvo, always choose quality, whatever they do. And they choose with care. When the 50 000 sqm roof of the truck plant had to be reroofed, they issued a specified inquiry to all major roof membrane suppliers in Sweden.**

Six tenders were given, split on four types of material. The tenders were carefully and systematically judged. The eleven most relevant properties for economy, lifetime and function of each roofing system were judged in accordance with a pre-prepared method of evaluation. One condition of acceptance of tenders was also that installation had to be made without using any open flames on the

roof, following the rules of the Swedish Fire Department of Volvo with support of a roofing consultant, Takrådgivning Rolf Kristiansson in Gothenburg.

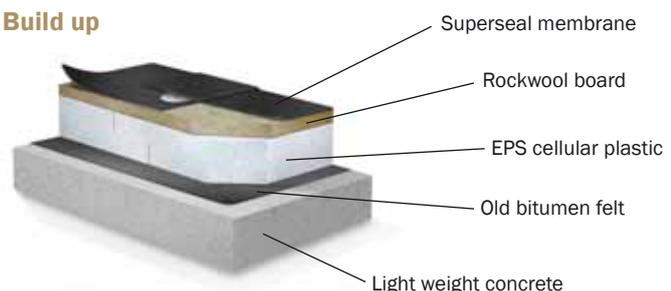
### The reasons for Volvo to give Superseal the top rating

Thanks to superior life time, flexibility, weight, fire resistance, environmental influence, system engineering and warranties, the clearly best buy was

Superseal EPDM, despite not having the lowest bid.

On top of the original lightweight concrete construction with two layers of oxidised bitumen a 55 mm EPS insulation and a 15 mm Rockwool board were installed. Superseal FR fleece backed EPDM was mechanically fixed. New stainless steel drains were fitted and 440 fire ventilators were raised and covered with prefabricated collars in EPDM.

### Build up



# Superseal Roofing Reference

## Volvo Bilia, Vinsta, Stockholm, Sweden



Volvo Bilia, Vinsta. 8 000 sqm felted roof renovated with Superseal EPDM.

**Volvo Bilia in Stockholm is one of the largest car dealerships in Sweden. When their 8 000 sqm large service center in Vinsta should be re-roofed the quality and environmental aspects were as important as the square meter price. Volvo do not buy on price only, they consider lifetime, total quality and environmental factors in order to obtain the best long term economical building administration.**

The roofing contractor Tak & Tåtskikt has over 30 years of experience from rubber membrane installations and could offer an engineered installation based on the Superseal EPDM membrane system.

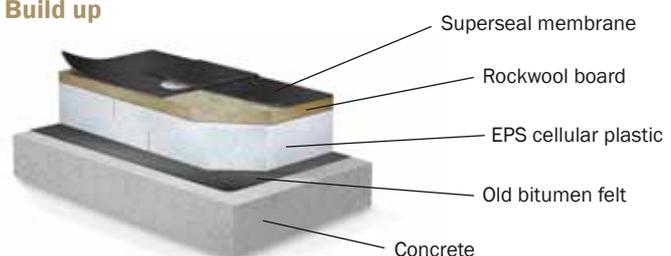
### Construction of the new Superseal roof

The old roof consisted of a concrete deck and two layer oxidised bitumen felt suffering from heavy blistering and cracking. The roof was renovated in two stages with a year between installations, 4 000 sqm's in 1997 and further 4 000 sqm's in 1998.

The felt roofing was cleaned and blisters cut down. An additional 100 mm EPS

insulation disrupted by Rockwool in sections for fire protection reasons, was installed. For further improvement of fire resistance a mineral wool nonwoven was placed on top of the EPS. Superseal EPDM roll width 1,30 m was positioned with a 50 mm overlap. The membrane was mechanically fixed to the deck with washers and concrete nails. Then splicing of the roof was made, using Thermobond splice strips and electrical hot air guns.

### Build up



# Superseal Roofing Reference

## FRAKTARNA Freight Terminal, Länna, Sweden



*New storage and freight handling terminal for the major haulage company FRAKTARNA.*

**During autumn 1997 the haulage and logistics company FRAKTARNA AB built a new distribution terminal in Länna, Huddinge, south of Stockholm. The general building contractor for the 10 000 sqm large storage was Fastec AB and the installer of the roof was Tak & Tätskikt AB.**

A steel deck with large distances between supporting beams results in exceptional movements and stresses in the roofing membrane during a year of Scandinavian climate, with temperatures ranging from +30 to -20°C.

FRAKTARNA chose Superseal EPDM membrane because rubber is elastic, will absorb any elongation at any temperature. With a Superseal roof they can expect decades of trouble-free, watertight roofing performance.

### State of the art roofing construction

The new storage of FRAKTARNA have a "dual" roof construction. The insulation is built up with one layer of expanded polystyrene and one layer of mineral wool. On the substrate of TRP metal a layer of Rockwool was placed, on top of this a vapour retarder of polyethylene film, then EPS insulation. On the EPS a 20 mm thick board of mineral wool is fixed.

The 1,30 m wide Superseal EPDM membrane was unrolled with a 50 mm overlap. The membrane is fixed to the metal deck with screws and telescope washers, allowing for vertical movements of the screws. To suit the size of the building, special length rolls of 28,5 m were used. The Superseal membrane was spliced using hot air machinery. With large open surfaces the installa-

tion work was fast and independent of weather conditions, despite work in the harsh late autumn weather in Sweden.



*Thermobond hot air splicing.*