

EURATHANE



Flat roof

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Flat roof

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1 GENERAL

EUROTHANE/POWERDECK roof insulation boards are ideal for insulating flat roofs with various supports: concrete, steel and wood.

These "rigid" boards are chosen as roofing insulation for the following reasons :

- high insulation capacity - lambda between 0.023 W/mK and 0.028 W/mK (depends on type of products)
- excellent dimensional stability;
- good compressive strength;
- high wind-load resistance;
- lightweight;
- easy to handle;
- compatible with different kinds of waterproofing membranes;
- different sizes available.
- the excellent reaction to fire (POWERDECK).

EUROTHANE/POWERDECK insulation boards are always coated on both sides with a facing material. The properties and characteristics of the facing are adapted to the particular application. The appropriate choice of the EUROTHANE /POWERDECK insulation board (coating) makes the use of separation layers redundant. Furthermore larger board dimensions can be applied.

EUROTHANE/POWERDECK boards are marked. The installation instructions (included in the packaging) give application advice for the insulation board.

When the insulation is bonded to the support, then only small boards 1200mm x 600mm are used. When the boards are mechanically fixed usually the larger sizes 1200mm x 1000mm or 1200mm x 2500mm are used.

2 Basic Principles of roof build-ups with Eurothane and Powerdeck

EUROTHANE/POWERDECK roof insulation boards are exclusively used in flat roof constructions of the "warm" type. The general guidelines which are applied are incorporated in the Technical Information 215 "THE FLAT ROOF" - edition of the WTCB/CSTB.

More specific rules are included in various EUROTHANE Technical Approvals ATG ..., produced by Butgb.

The right thickness of the EUROTHANE/POWERDECK insulation boards depends on required U-value (or K-value) and desired degree of thermal comfort. Furthermore a minimal insulation thickness is also needed to avoid surface condensation.

Therefore, in Belgium, the k-value is set at a maximum of 0,6 W/m²K for roofs of newly built houses and maximally 0,4 W/m²k for refurbished houses. However, with an eye to the energy saving a target value of k < 0,3 W/m²K is more than desirable.

Internal condensation, which is the conversion of water vapour into water somewhere in the roof construction, can also lead to problems in warm roof constructions. The risk for unacceptable condensation can be calculated by means of condensation calculations conducted by the GLASTA calculation program (calculation possible on request).

If it is proven by these calculations that an accumulation of condensation fluids arises in the roof construction or that an amount of condensation extends inaccessibly, a good vapour barrier between deck and insulation will offer a solution. This is applied on the warm side (in winter) of the thermal insulation in the construction.

Various factors define the necessity of a vapour barrier, namely:

- humidity and temperature inside the building
- roof structure
- nature of the insulation material

Summarised on the basis of the guidelines incorporated in the note 215 "The Flat Roof" and on years of practical experience, the following choices of vapour control barriers are possible in combination with Eurothane insulation boards:

Bearing construction or pitch layer	Internal climate class			
	I	II	III	IV
Concrete cast on the spot Concrete prefab-elements (1)	E3	E3	E3	E4
Dampproof boarding or boards deduced from wood	(2)	E2 (3)	E2	E4
Steeldeck (4)	-	E2 (3)	E2	E4

Explanation:

(1) In the internal climate class I, II, III no vapour control barrier is provided when renovating roofs with an airtight roof floor of dry concrete.

(2) A vapour barrier is not necessary if the joints between the boards are finished airtight with bitumen which can be used for the glueing of the insulation boards. In the last mentioned presupposition the boarding is covered with a layer P150/16. The joints between the boards and the contour joints are covered with strips of bituminised glass fleece.

(3) The vapour barrier may be left out if the boards are coated with a vapour control facing and provided with a rebate on the 4 sides.

(4) The air tightness of the joint between the metaldeck and the roof edge needs to be secured. Vapour barriers class E4 are placed on a continuous underground and cannot be perforated.

Overview of current materials for vapour control barriers and their overlaps :

Class (μ_{eq}) (*)	MATERIALS	NOTES
E1 (≥ 2 to 5 m)	<ul style="list-style-type: none"> - PE-foil (thickness = 0.2 mm) with overlaps of min. 100 mm. - Also usable : all materials of class II, III and IV. 	A bonding layer, even on a continuous underground, may not be considered as a full valuable vapour barrier.
E2 (≥ 5 to 25 m)	<ul style="list-style-type: none"> - PE-foils (thickness ≥ 0.2 mm) and aluminium laminates - Bitumen glass fibre : V50/16 - Also usable : all class III and IV materials 	Joints in overlap, when present, must be bonded or fixed with the torch-on method against the other building elements.
E3 (≥ 25 to 200 m)	<ul style="list-style-type: none"> - Reinforced bitumen V3, V4, P3 or P4 - Polymer bitumen APP or SBS (minimum thickness = 3 mm); glass fleece or reinforced PES - Also usable : all class IV materials 	Joints in overlap, when present, must be bonded or fixed with the torch-on method against the other building elements.
E4 (≥ 200 m)	<ul style="list-style-type: none"> - Reinforced bitumen with integrated aluminium foil (ALU 3) - Multi-layered bituminous vapour control barrier of polymer systems (≥ 8 mm) 	Joints in overlap, when present, must be bonded or fixed with the torch-on method against the other building elements. Vapour control barrier class E4 demands a realisation on a continuous carrier. Perforations (for instance by screwing mechanical fixations) are not allowed.

(*) (μ_{eq}) is the equivalent damp diffusion thickness and defines the vapour control characteristic of a vapour control layer
 [(μ_{eq}) = 1 m] corresponds to a layer of stationary air of 1-m thickness
 [(μ_{eq}) > 200 m] : "absolute" vapour barrier

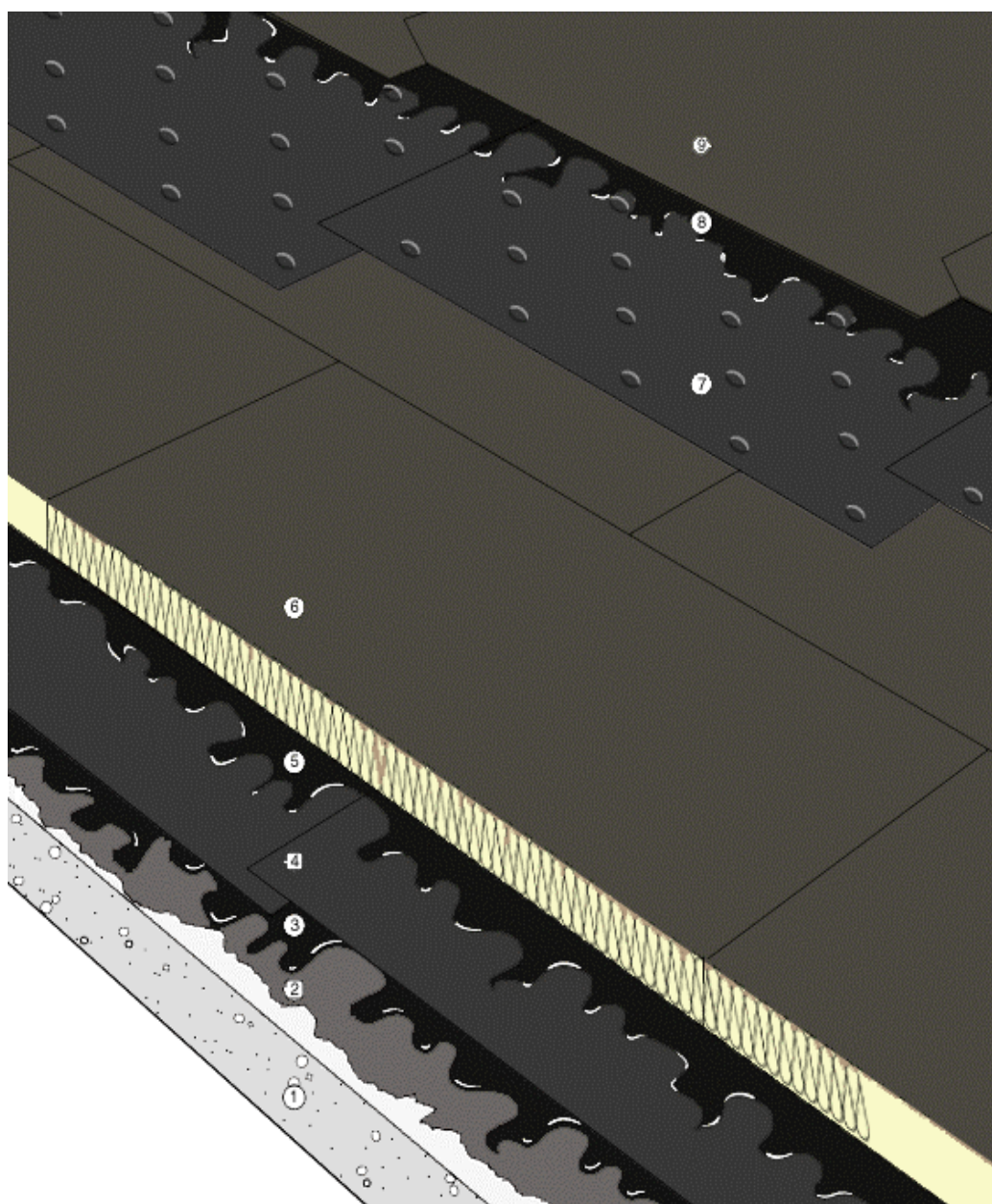
Overview table: systems versus products

The table below demonstrates which board is the preference of the manufacturer in function of the type of support floor and the way of installation.

	SUPPORT		
	Concrete	Steel	Wood
Method of installing the waterproofing system			
waterproofing system partially bonded with hot bitumen	Bi3	Powerdeck F	Powerdeck F
bituminous roofing system partially bonded with torch-on method	Bi3	Powerdeck B	Powerdeck B
bituminous roofing system fully bonded with cold glue	Bi3	Powerdeck F	Powerdeck F
synthetic roofing system fully bonded with cold glue	Bi3	Powerdeck F	Powerdeck F
self adhesive waterproofing system	Bi3	Powerdeck F	Powerdeck F
loosely-laid bituminous waterproofing system with ballast	Bi3	/	/
loosely-laid waterproofing system with ballast	Powerdeck	/	/
waterproofing system mechanically fixed	/	Powerdeck	Powerdeck

3 EUROTHANE/POWERDECK FLAT ROOF SYSTEMS

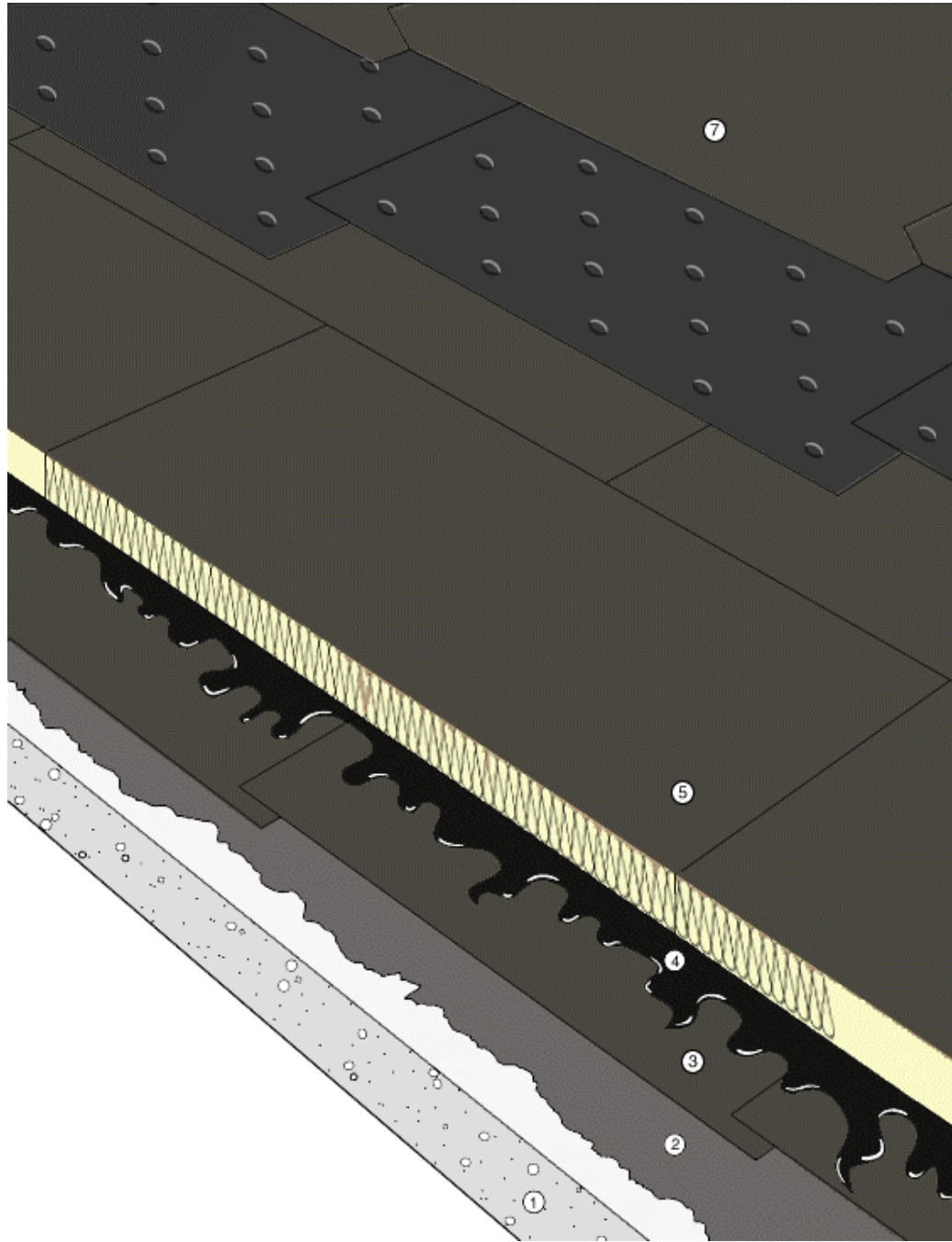
3.1 EUROTHANE Bi-3, Bi-3A, POWERDECK F on concrete decks – partial bonding of waterproofing using hot bitumen



DESCRIPTION OF ROOFING SYSTEM

1. Concrete
2. Concrete treatment : bituminous adhesive varnish
3. Bitumen 110/30: adhesive for the vapour barrier: bitumen 110/30
4. Vapour barrier: bituminized glass fibre fully bitumen-bonded to concrete – minimum overlap 70 mm, overlaps sealed with bitumen
5. Bitumen 110/30: adhesive for the insulation bitumen: bitumen 110/30
6. Insulation board: EUROTHANE Bi-3 / Bi-3A / POWERDECK F boards, size 1200 mm x 600 mm – fully bonded in bitumen
7. **Perforated bituminized glass fibre – 15% perforations**
8. Bitumen 110/30
9. Waterproofing: - bituminous: single or multi-layer systems – synthetic waterproofing

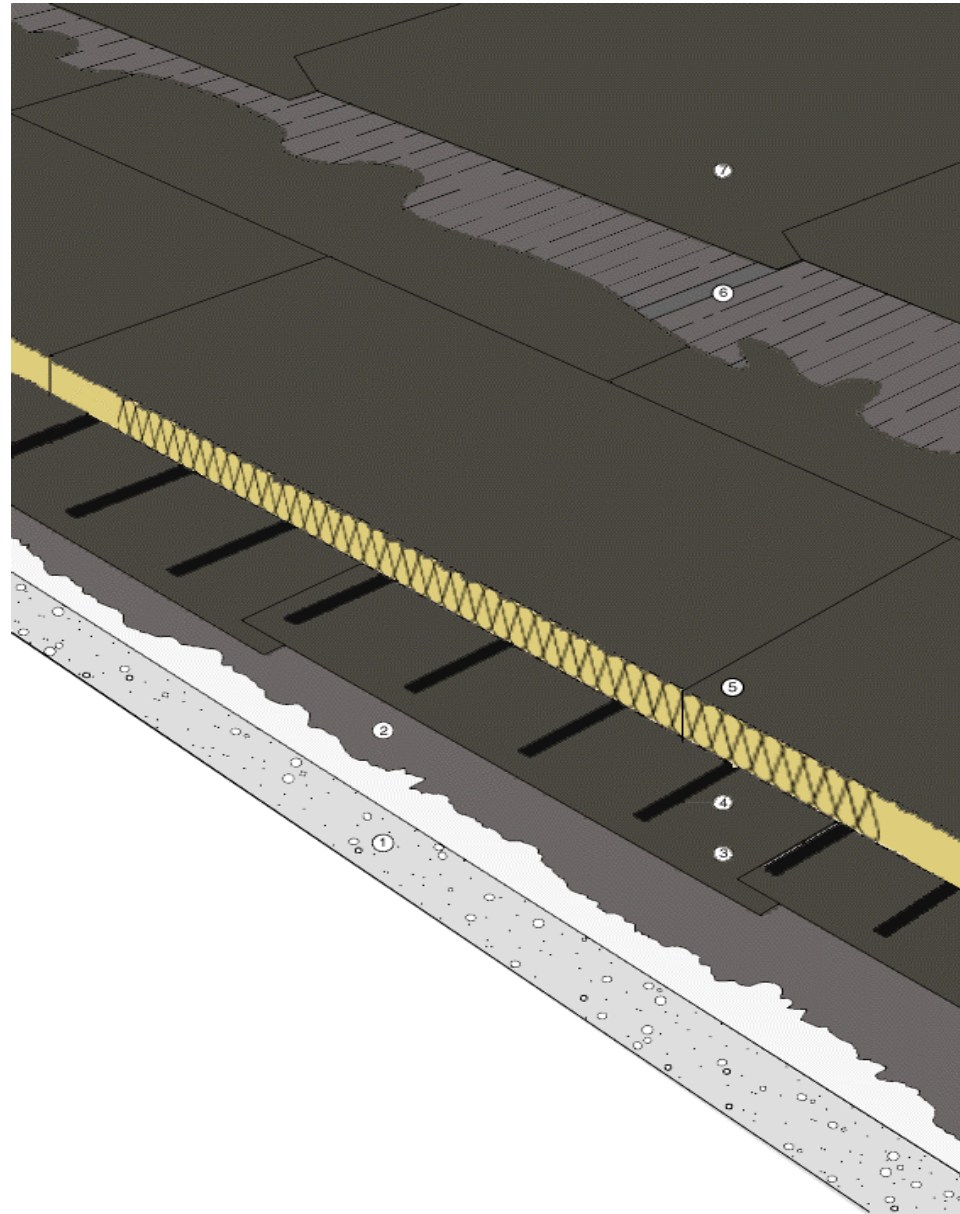
3.2 EUROTHANE Bi-3, Bi-3A, POWERDECK B on concrete decks – Bituminous membrane, partial bonding with torch-on system



DESCRIPTION OF ROOFING SYSTEM

1. Concrete
2. Concrete treatment : bituminous adhesive varnish
3. Vapour barrier : reinforced bituminous membrane fully bonded (torched) to the concrete
Bituminized glass fibre torched on the concrete – minimum overlap 70 mm (also torched)
4. Bitumen 110/30: adhesive for the insulation: bitumen 110/30
5. Thermal insulation board : EUROTHANE Bi-3 / Bi-3A / POWERDECK B boards, size 1200 mm x 600 mm – fully bonded in hot bitumen
6. **Perforated bituminized glass fibre covered with a PE/PP foil (15% perforations)** The perforated layer can be dropped when you install a venti-layer membrane.
7. Waterproofing : single (or multi-)layer bituminous membrane

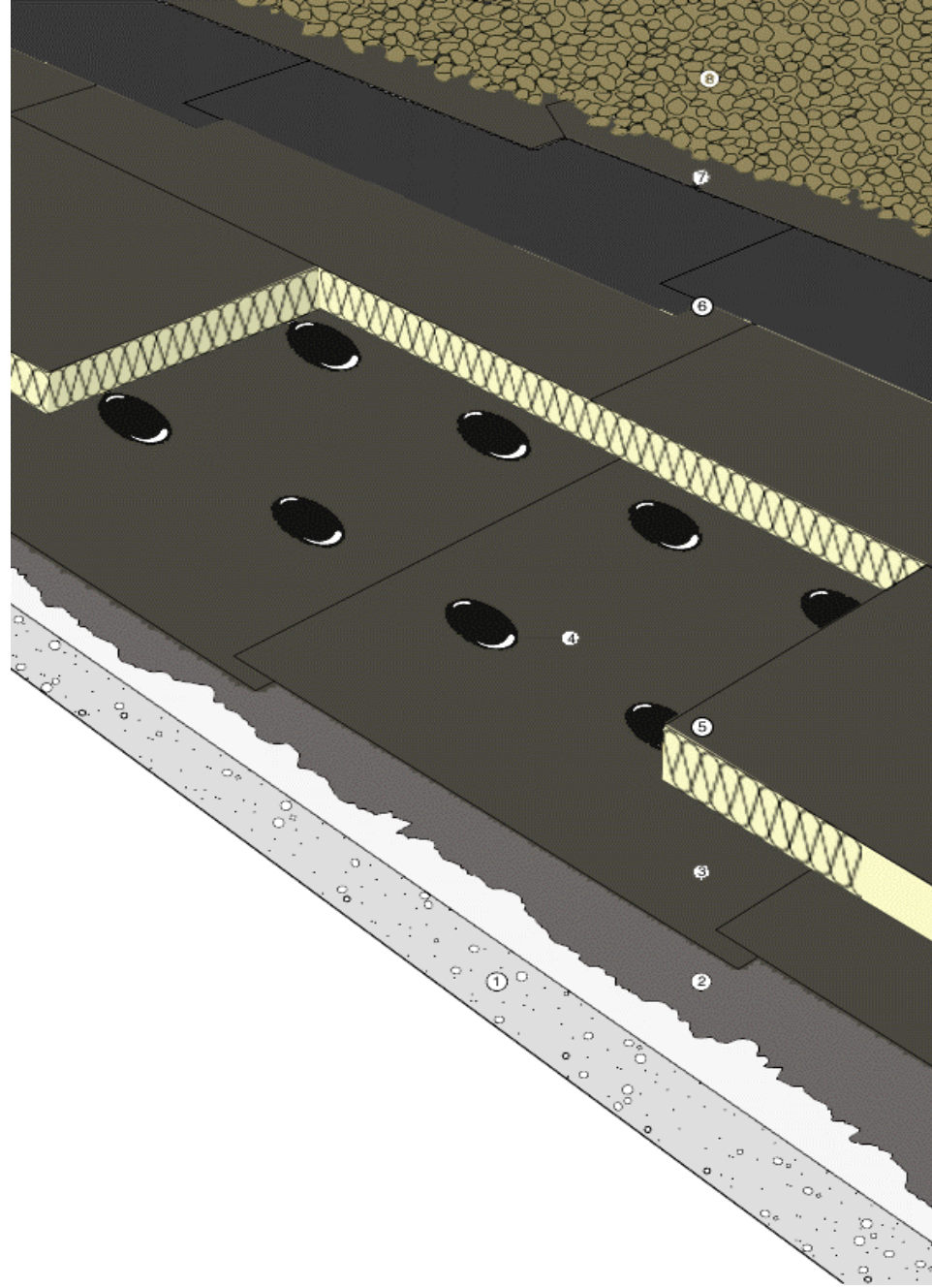
3.3 EUROTHANE Bi-3, Bi3A, POWERDECK F on concrete decks – fully bonded waterproofing (bituminous, single ply) using cold glue adhesives



DESCRIPTION OF ROOFING SYSTEM

1. Concrete
2. Concrete treatment : bituminous adhesive varnish
3. Vapour barrier : reinforced bituminized glass fibre, torched on tot the concrete, overlap minimum 70 mm, overlaps (also torched)
4. Adhesives insulation : bituminous cold glue or PUR glue applied in continous lines; distance between lines approx. 20 cm; distance from panel edge to first glue line -maximum 10 cm
5. Thermal insulation board : EUROTHANE Bi-3, Bi3A, POWERDECK F panels, 1200 mm x 600 mm for thickness < 60 mm; 600 mm x 600 mm for thickness > 60 mm. Press insulation panels firmly down on to the glue lines
6. **Cold adhesives for the membrane : bituminous cold glue, contact glue compatible with the insulation panels,... fully bonded on the insulation layer.** (can be replaced by a self-adhesive membrane)
7. Waterproofing : bituminous / single ply

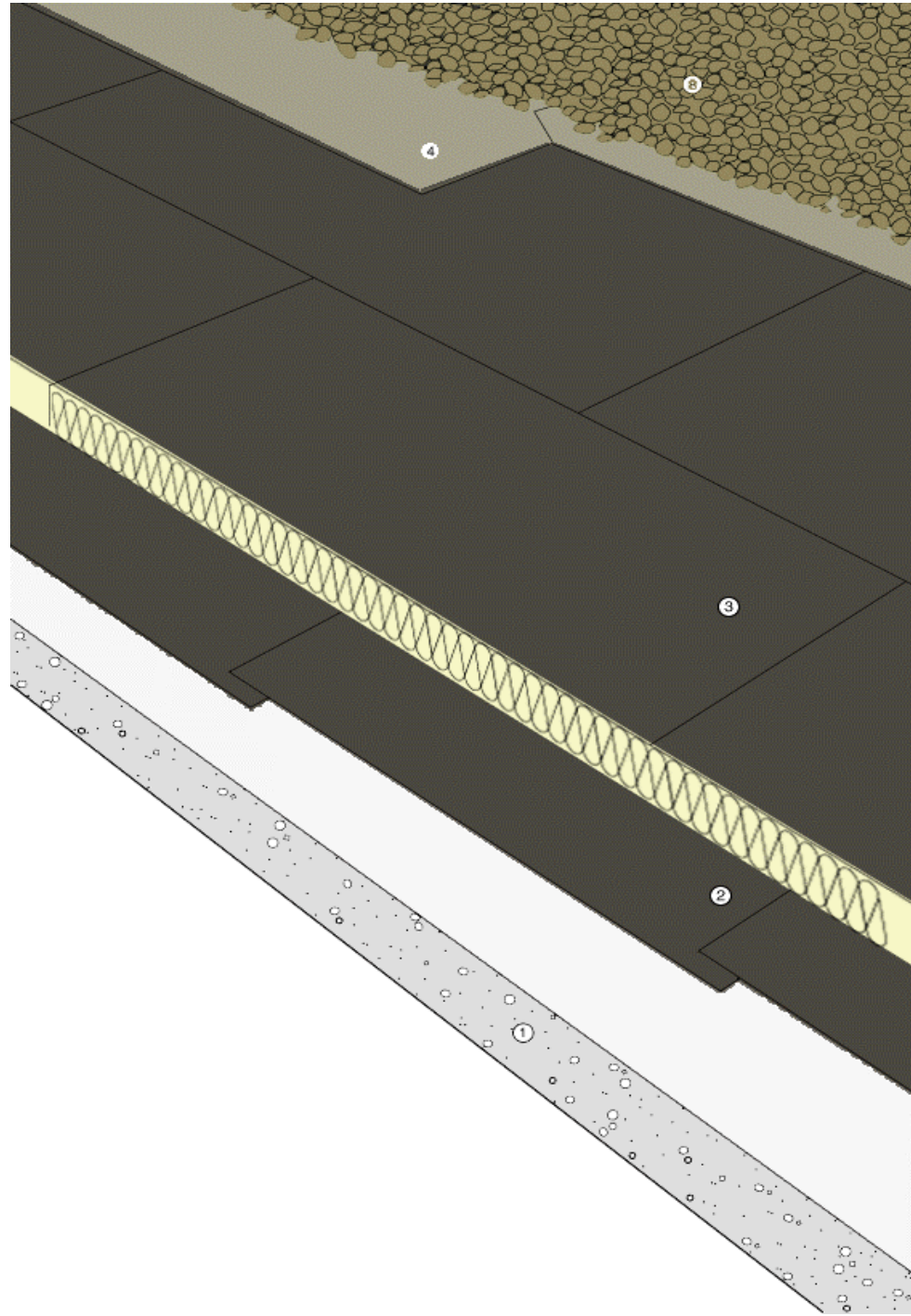
3.4 EUROTHANE Bi-3, Bi3A, POWERDECK F on concrete decks – loose-lying bituminous waterproofing with ballast



DESCRIPTION OF ROOFING SYSTEM

1. Concrete
2. Concrete: bituminous adhesive varnish
3. Vapour barrier : reinforced bituminized glass fibre, torched on to the concrete, minimum overlap 70 mm (overlaps torched)
4. EUROTHANE Bi-3, Bi3A and POWERDECK F boards preferably bonded to the vapour barrier with a bituminous cold glue. For example applied in dots
5. Thermal insulation board : EUROTHANE Bi-3, Bi-3A and POWERDECK F boards, 1200 mm x 600 mm
- 6-7 Roof covering : multi-layer bituminous waterproofing, laid loose on the EUROTHANE insulation boards
8. Ballast

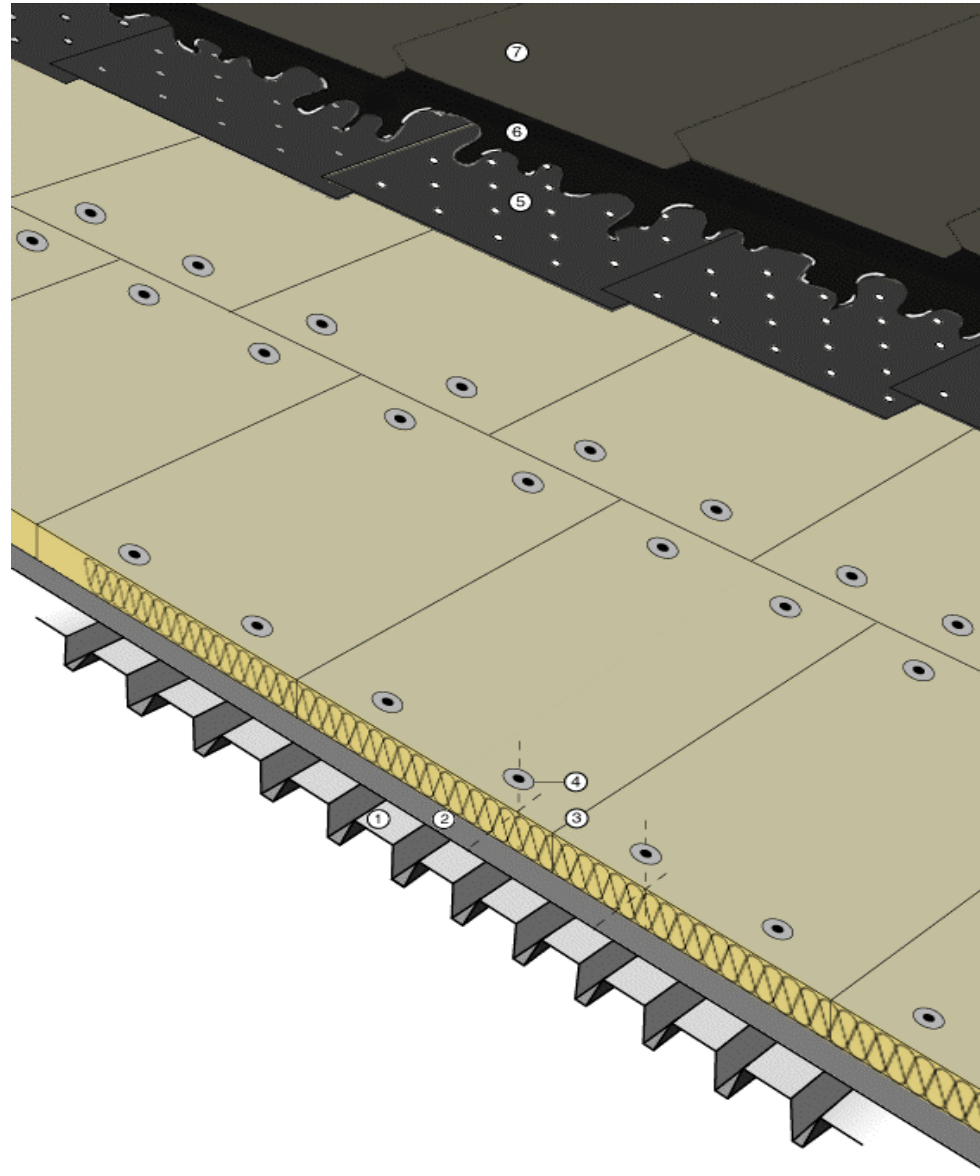
3.5 EUROTHANE SILVER, POWERDECK on concrete decks – loose-lying membrane with ballast



DESCRIPTION OF ROOFING SYSTEM

1. Concrete
2. Vapour barrier : foil or reinforced bituminous products (overlaps to be sealed)
3. Thermal insulation board : EUROTHANE SILVER / POWERDECK, 1200 mm x 600 mm, laid loose on the vapour barrier
4. Waterproofing : single ply or bituminous membrane, laid loose on the EUROTHANE boards
5. Ballast

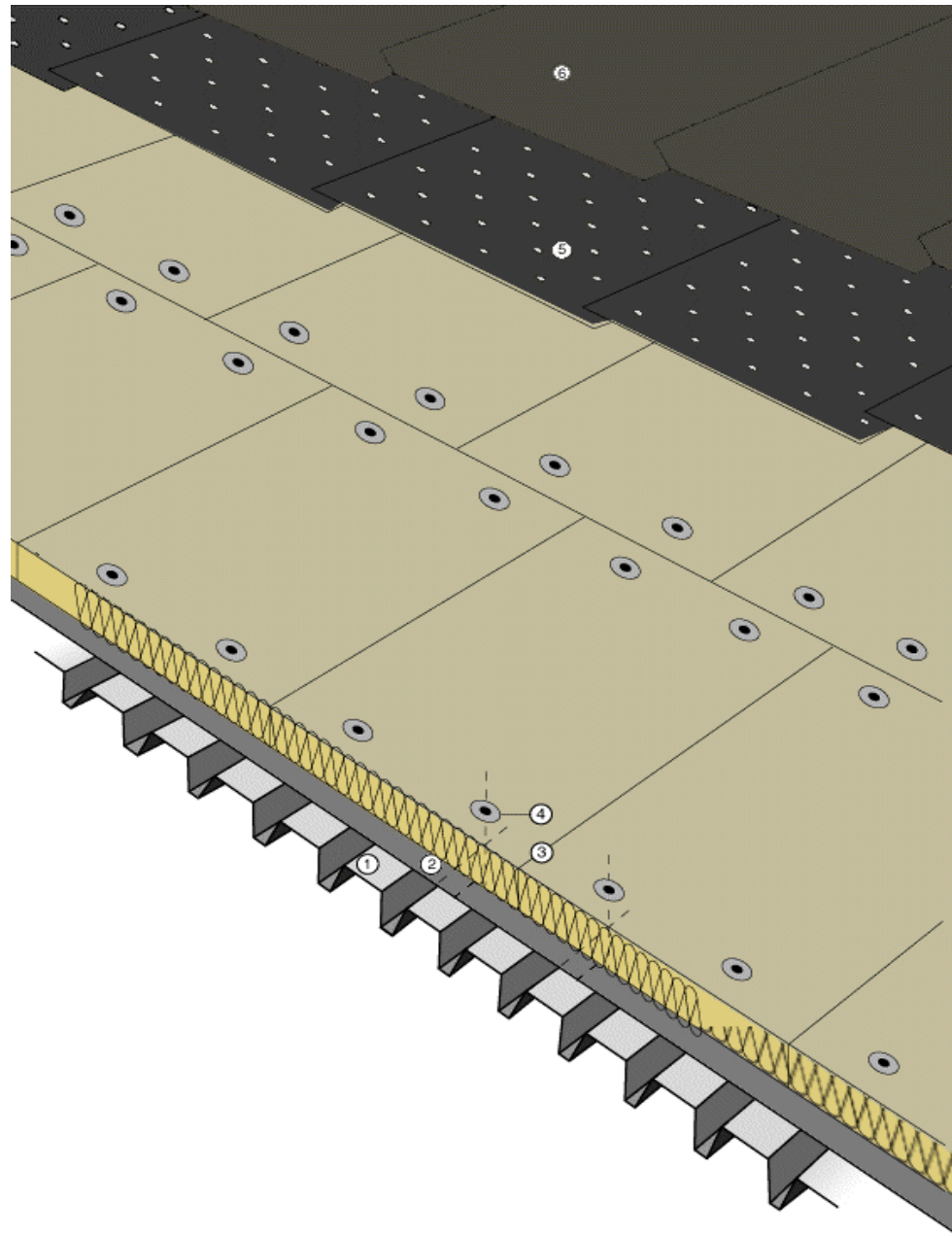
3.6 EUROTHANE BI-3, POWERDECK F on steel deck – partially bonded waterproofing using hot bitumen



DESCRIPTION OF ROOFING SYSTEM

1. Steel deck
2. Vapour control barrier : vapour control barrier class according to table (basic principles)
3. Thermal insulation layer : EUROTHANE Bi-3 / POWERDECK F panels, size 1200 mm x 1000 mm, mechanically fixed to the steel deck. Length 1000 mm crosswise the length of the section plate, minimum 4 screws per plate in the mid-zone; respective 6 in roofing edge zone. Number of screws required to be determined on the basis of wind-load factor. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of each panel, the 250-mm length measured crosswise the length of the section plate.
4. Mechanical fixing : screw and washer. These must satisfy the conditions for EUtgb – Class II and have a minimum diameter of 4.8 mm. Washers must be compatible with screws used.
5. Perforated bitumen glass fleece – 15% perforations
6. Adhesive: bitumen 110/30
7. Roof covering : single- (or multi-layered) bituminous membrane, synthetic (EPDM, ...).

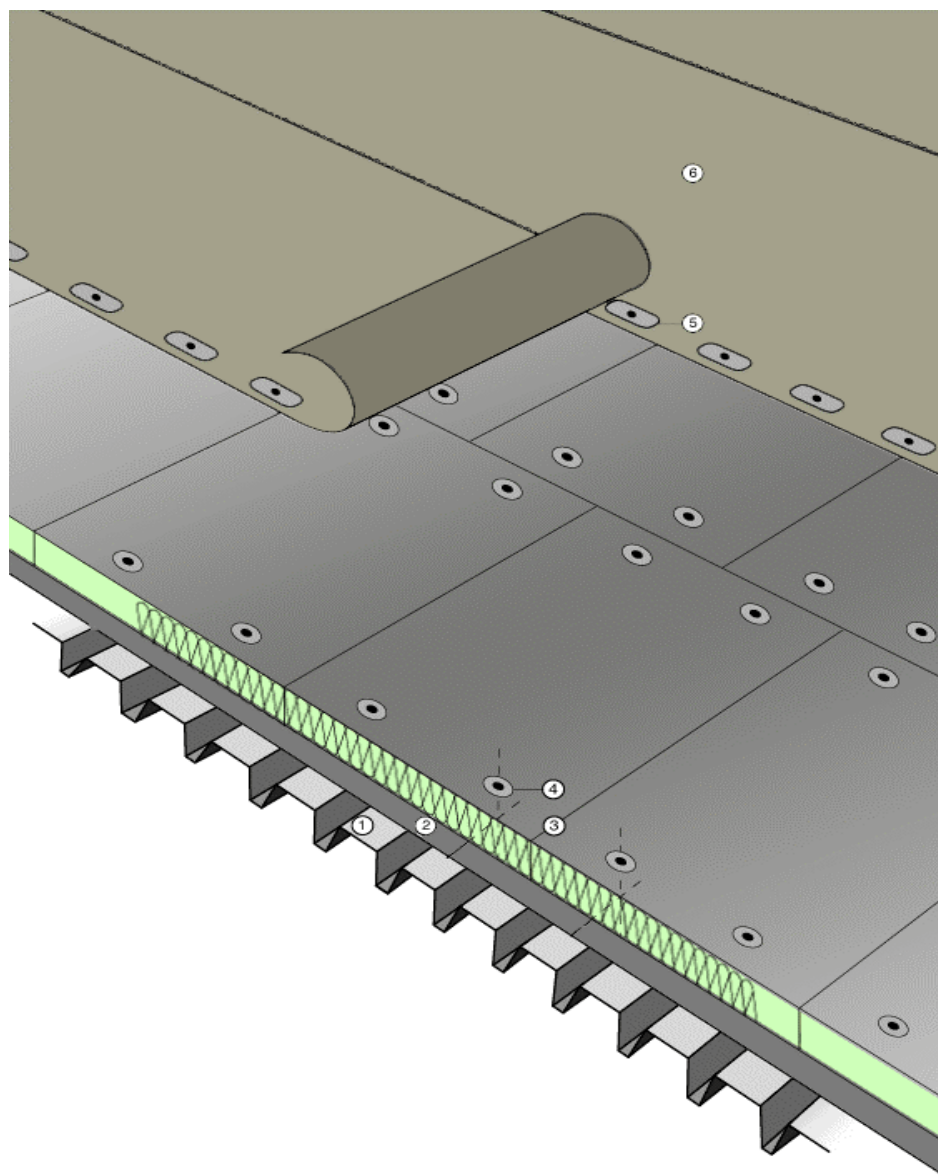
3.7 EUROTHANE Bi-3, POWERDECK B on steel deck – partially bonded bituminous waterproofing with torch-on system



DESCRIPTION OF ROOFING SYSTEM

1. Steel deck
2. Vapour control barrier : vapour control barrier class according to table (basic principles)
3. Thermal insulation layer : EUROTHANE Bi-3 / POWERDECK B, size 1200 mm x 1000 mm, mechanically fixed to steel deck. Length 1000 mm crosswise the length of the section plate, minimum 4 screws per plate in the mid-zone; respective 6 in roofing edge zone. Number of screws required to be determined on the basis of wind-load factor. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of each panel, the 250-mm length measured crosswise the length of the section plate.
4. Mechanical fixing : screw and washer. These must satisfy the conditions for EUtgb – Class II and have a minimum diameter of 4.8 mm. Washers must be compatible with screws used.
5. Perforated bitumen glass fleece – 15% perforations (The perforated bitumen glass fleece can be dropped when a ventilayer is used)
6. Roof covering : torched on single- (or multi-layered) bituminous membrane

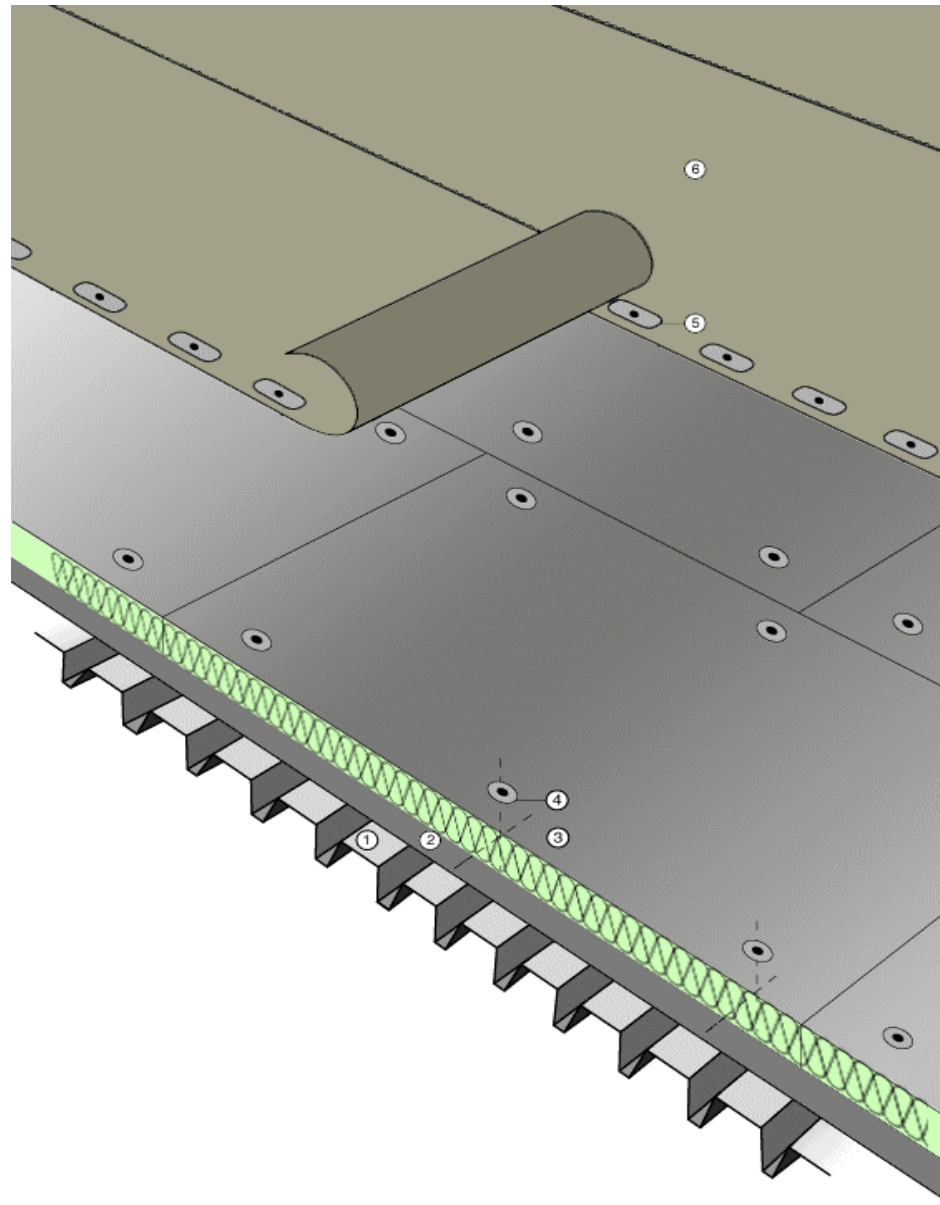
3.8 EUROTHANE Bi-3, POWERDECK, POWERDECK F, POWERDECK B, EUROTHANE SILVER on steel deck – mechanical fixation of the waterproofing



DESCRIPTION OF ROOFING SYSTEM

1. Steel deck
2. Vapour control barrier : vapour control barrier class according to table (basic principles)
3. Thermal insulation layer : EUROTHANE Bi-3 / POWERDECK / POWERDECK F / POWERDECK B panels, size 1200 mm x 1000 mm, mechanically fixed to steel deck by 4 screws per plate. Length 1000 mm crosswise the length of the section plate. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of each panel, the 250-mm length measured crosswise the length of the section plate.
4. Mechanical fixing insulation panel : screw and washer. These must meet the conditions for EUtgb Class II and a minimum diameter of 4.8 mm. Washers must be compatible with screws used.
5. Mechanical fixing waterproofing : screw and washer. Quality and quantity according to manufacturer's instructions, ATG and CTG approvals of the membrane.
6. Roof covering : bituminous or single ply, compatible with the insulation and mechanically fixed onto the steel deck through the insulation. Number of screws to be calculated in function of wind-load factor – see instructions waterproofing material.

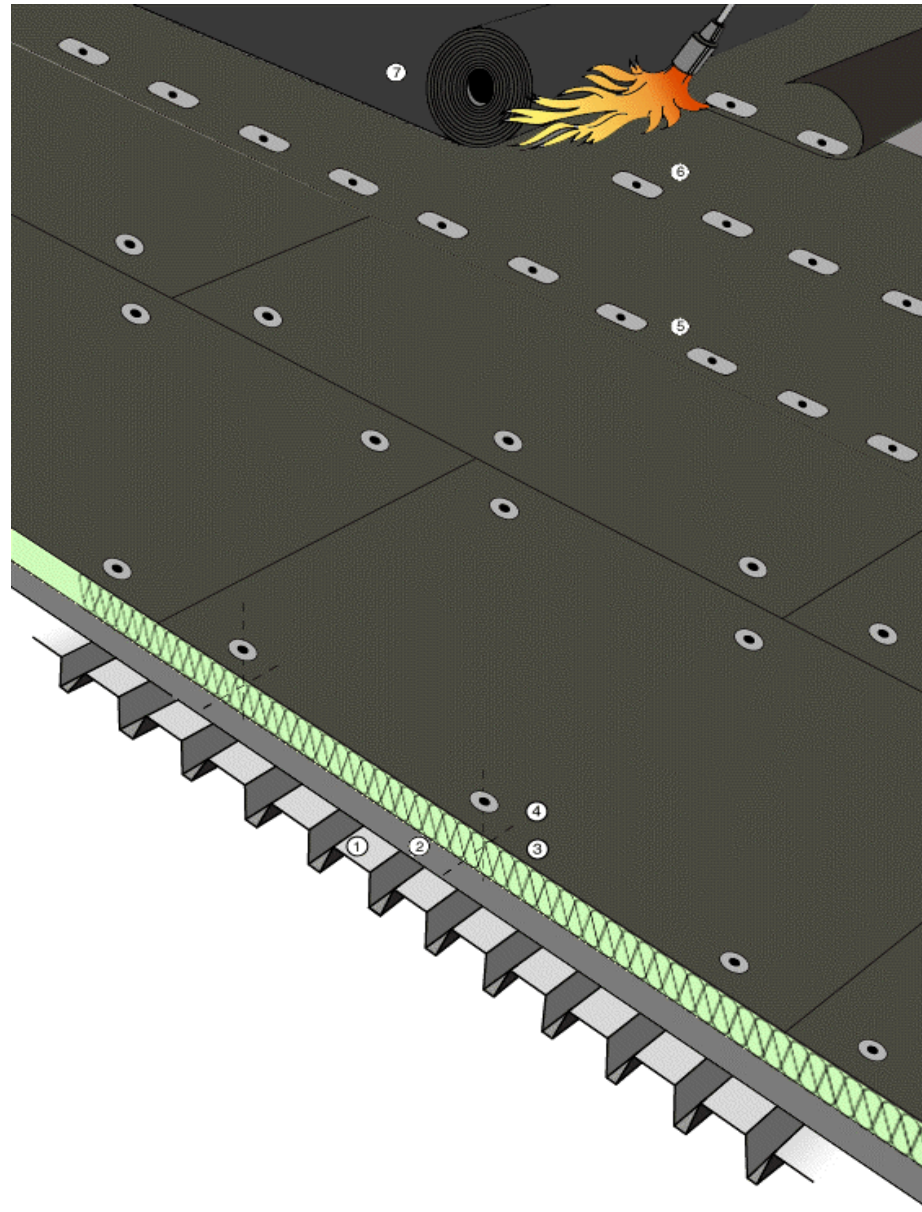
3.9 POWERDECK, EUROTHANE SILVER on steel deck - mechanical fixation of the waterproofing



DESCRIPTION OF ROOFING SYSTEM

1. Steel deck
2. Vapour control barrier : vapour control barrier class according to table (basic principles)
3. Thermal insulation layer: EUROTHANE SILVER / POWERDECK panels, size 1200 mm x 2500 mm, mechanically fixed to the steel deck by 6 screws per plate. Length 2500 mm crosswise the length of the section plate. Set one screw in each 100 mm x 250 mm corner zone, the 250-mm length measured crosswise the length of the section plate. Set the other 2 screws in the middle of the panel, one on either edge.
4. Mechanical fixing insulation panel : screw and washer. These must satisfy the conditions for EUtgb Class II and have a minimum diameter of 4.8 mm. Washers must be compatible with the screws used.
5. Mechanical fixing waterproofing : screw and washer. Quality and quantity according to manufacturer's instructions, ATG and CTG approvals of the membrane
6. Roof covering : bituminous or single ply, compatible with the insulation and mechanically fixed onto the steel deck through the insulation. Number of screws to be calculated in function of wind-load factor – see instructions waterproofing material

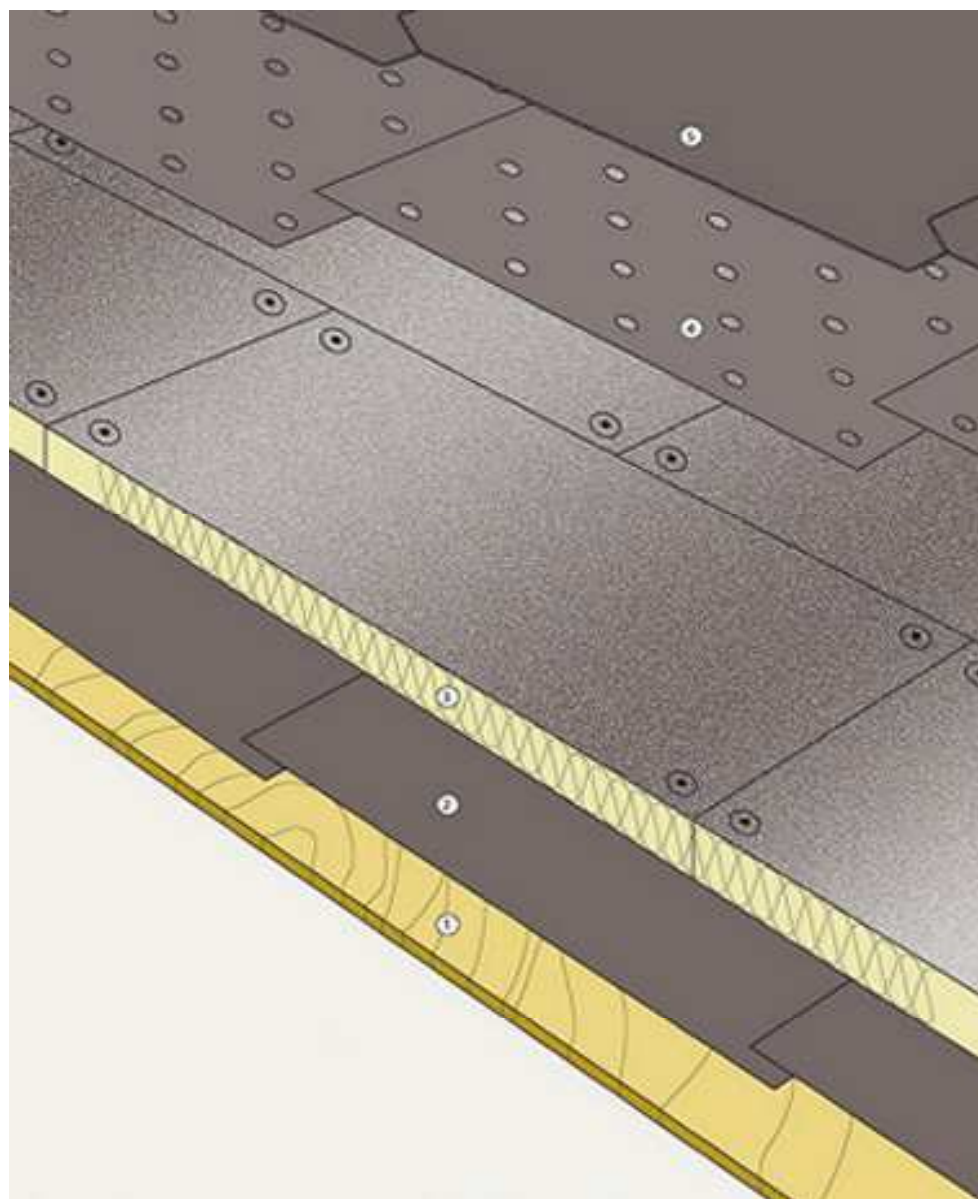
3.10 POWERDECK, EUROTHANE SILVER on steel deck - mechanical fixation of bituminous waterproofing



DESCRIPTION OF ROOFING SYSTEM

1. Steel deck
2. Vapour control barrier : vapour control barrier class according to table (basic principles)
3. Thermal insulation layer : EUROTHANE SILVER / POWERDECK panels, size 1200 mm x 2500 mm, mechanically fixed to the steel deck by 6 screws per plate. Length 2500 mm crosswise the length of the section plate. Set one screw in each 100 mm x 250 mm corner zone, the 250-mm length measured crosswise the length of the section plate. Set the other 2 screws in the middle of the panel, one on either edge.
4. Mechanical fixing insulation panel : screw and washer. These must meet the conditions for EUtgb Class II and have a minimum diameter of 4.8 mm. Washers must be compatible with the screws used.
5. Mechanical fixing waterproofing
6. One sided bitumen laminated polyester – mechanically fixed through the insulation
7. Bituminous waterproofing torched onto previous layer

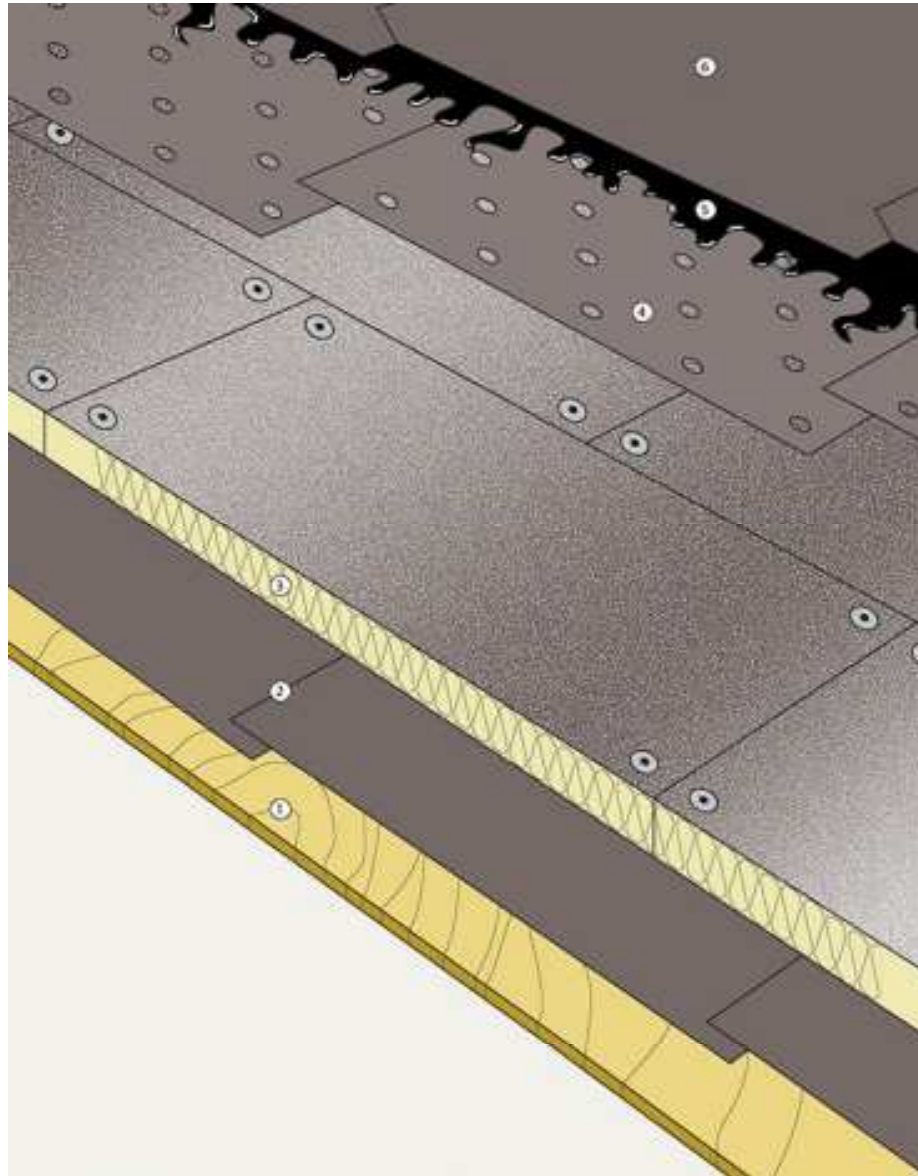
3.11 POWERDECK B, EUROTHANE Bi3, EUROTHANE Bi3A on wooden construction – partially bonded with torch-on system



DESCRIPTION OF ROOFING SYSTEM

1. Support: wooden bearing structure
2. Partition layer and vapour control layer. With a wooden bearing construction the partition layer out of rough glass fibre or polyester is installed firstly. Then the underlying layer (reinforced bitumen with polyester) is nailed. The vapour control layer is then torched on or bonded to that layer. If the bearing surface has an equal surface, the vapour control layer can be bonded onto this, with the exception of the seams / overlaps where a loose strip will be provided.
3. Thermal insulation boards EUROTHANE Bi3, Bi3A, POWERDECK B, size 1200 mm x 600 mm, preferably mechanically fixed with a minimum of 4 screws per board. Exact number of screws required is calculated on the basis of the wind-load. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of every panel, the 250 mm length being measured along the length of the board. The screws and washers must meet the demands of EUtgb class II. The washers have to be compatible with the screws used.
4. **Perforated bituminized glass fibre with foil to be torched, 15% perforations.** This perforated layer can be dropped when a venti-layer membrane is being used.
5. Waterproofing: single- (or multi-) layer bituminous membrane

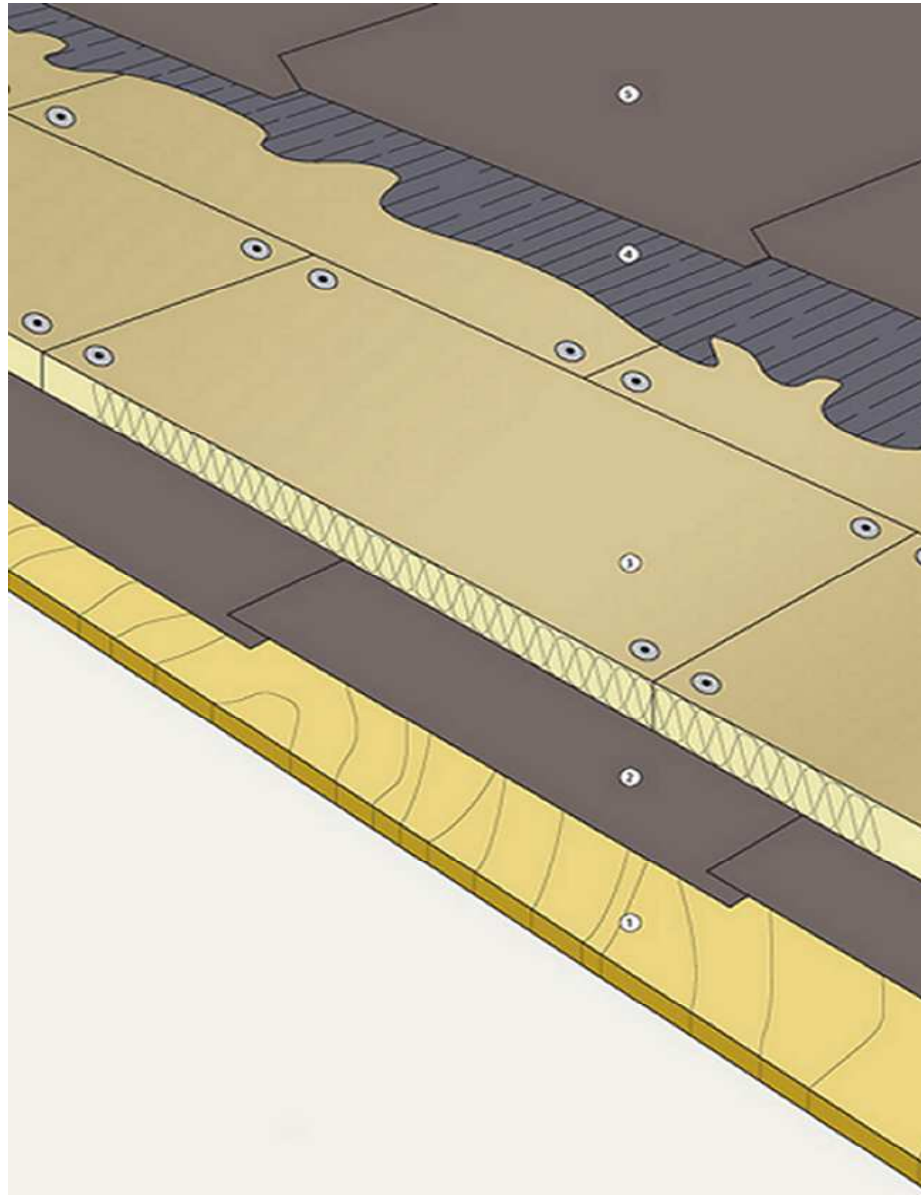
3.12 POWERDECK F/ EUROTHANE Bi3 / Bi3A on wooden construction – partial bonding of waterproofing using hot bitumen



DESCRIPTION OF ROOFING SYSTEM

1. Wooden bearing structure
2. Partition layer and vapour control layer. With a wooden bearing construction the partition layer out of rough glass fibre or polyester is installed firstly. Then the underlying layer (reinforced bitumen with polyester) is nailed. The vapour control layer is then torched on or bonded to that layer. If the bearing surface is plate formed, the vapour control layer can be bonded onto this, with the exception of the seams / overlaps where a loose strip will be provided.
3. Thermal insulation boards EUROTHANE Bi3, Bi3A and POWERDECK F, size 1200 mm x 600 mm, preferably mechanically fixed with a minimum of 4 screws per board. Exact number of screws required is calculated on the basis of the wind-load. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of every panel, the 250 mm length being measured along the length of the board. The screws and washers will meet the demands of EUtgb class II. The washers have to be compatible with the screws used.
4. **Perforated bituminized glass fibres, 15% perforations**
5. Adhesive layer: bitumen 110/30
6. Waterproofing : single- (or multi-) layer bituminous membrane, (EPDM, ...).

3.13 POWERDECK F / EUROTHANE Bi3 / EUROTHANE Bi3A on wooden construction – fully bonded waterproofing (bituminous, single ply) using cold glue adhesives



DESCRIPTION OF ROOFING SYSTEM

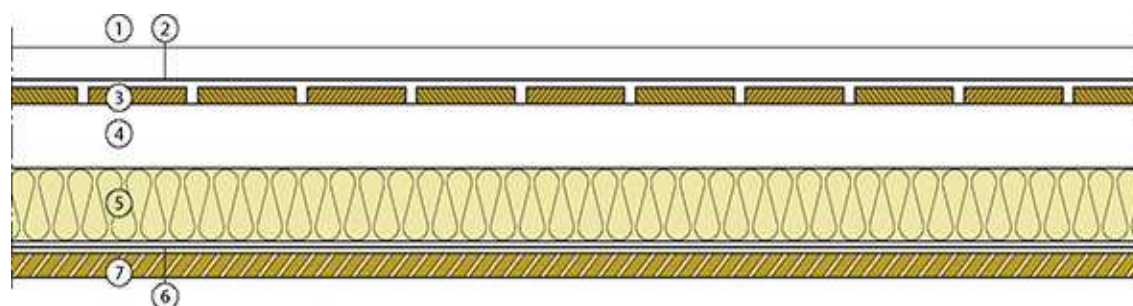
1. Wooden bearing structure
2. Partition layer and vapour control layer. With a wooden bearing construction the partition layer out of rough glass fibre or polyester is installed firstly. Then the underlying layer (reinforced bitumen with polyester) is nailed. The vapour control layer is then torched on or bonded to that layer. If the bearing surface has an equal surface, the vapour control layer can be bonded onto this, with the exception of the seams / overlaps where a loose strip will be provided.
3. Thermal insulation boards EUROTHANE Bi3, Bi3A and POWERDECK F, size 1200 mm x 600 mm, preferably mechanically fixed with a minimum of 4 screws per board. Exact number of screws required is calculated on the basis of the wind-load. Screws in insulation panel corners are set in a zone of 100 mm x 250 mm from the edge of every panel, the 250 mm length measured along the length of the board. The screws and washers will meet the demands of EUtgb class II. The washers have to be compatible with the screws used.
4. Cold adhesives for the membrane: bituminous cold glue, contact glue compatible with insulation boards, ... fully bonded on the insulation layer.
5. Waterproofing: single- (or multi-) layer bituminous membrane or single ply.

4 Flat roof with metal waterproofing system

4.1 General

4.1.1 Classic realisation

A cold roofing construction (see fig. 1) is understood to be the classic realisation (see fig. 1) of steel deck. The main characteristic of this construction is the exterior air ventilation in between the insulation and the steel roof film. As a consequence the exterior conditions are prevalent.



DESCRIPTION OF ROOFING SYSTEM

- 1./2. metal waterproofing system with standing joint
3. wooden boarding
4. ventilated cavity
5. insulation
6. vapour control barrier
7. support

Since the metal roof films were not corrosion resistant, it was necessary to ventilate in order to prevent /reduce the surface condensation against the underside of the metal roof films. Nowadays, most of the manufacturers have developed a type of metal roof films with coating on the underside, thus attaining a 100% corrosion resistant film. This has as a consequence that the cold roofing system can be abandoned, as there are furthermore significant disadvantages involved with that classical system:

- Firstly, an extra underconstruction (boarding) is necessary. This has great constructional consequences whereby the roof will become more expensive. Furthermore, the boarding system is very complex in realisation.
- A second disadvantage is the extra height of the construction. The roof becomes thicker because of the second under-deck that needs to be made and under which a cavity is present. This can give some design problems for some projects.
- The condensation problem as a result of the nocturnal radiation (supercooling) is a third disadvantage. During bright weather the metal waterproofing gets colder than the exterior air or even colder than its dew point because of the supercooling. As a consequence, the exterior air used to ventilate the cavity functions as moisture source instead of as dry air stream resulting in condensation on the underside of the metal roof films. The smaller the slope of the roof, the stronger the supercooling and the more explicit the supercooling-condensation will be.
- Fourthly, there is a possibility of wind movement under and air rotation around the insulation. As a consequence the U-value is no longer representative for the insulating quality.

In short, there are some major disadvantages involved with the ventilated cold roofing system, which can be avoided by the use of the warm roofing system.

4.1.2 Warm roofing system with metal waterproofing cover (*)

With a warm roofing construction (see. fig. 2) all elements of the roof construction are applied well joined on the under-deck construction without the air cavity.
(* system appropriate for climate class I, II and III)

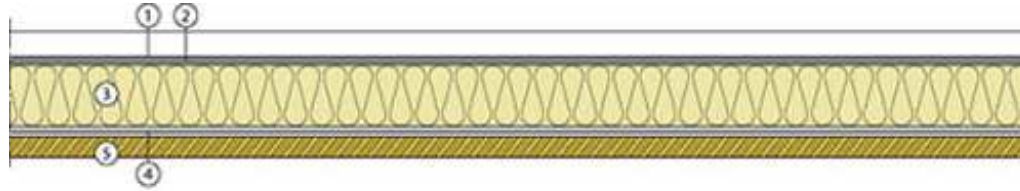


fig. 2

DESCRIPTION OF ROOFING SYSTEM

1. metal waterproofing system with standing joint
2. PE-foil
3. insulation
4. vapour control barrier
5. bearing construction (wood or steel)

The warm roof construction avoids all the disadvantages connected with the cold roofing construction ventilated with exterior air:

- Warm roof constructions are cheaper and easier to make than cold roof constructions because the extra underdeck is dropped.
- Furthermore, the warm roof is much more compact because there is no air cavity. As a consequence there is a larger freedom concerning the design.
- The inconvenient condensation because of the nocturnal radiation (supercooling) can be prevented by not using ventilation.

The insulation material needs to meet certain requirements for this construction (warm roofing system with metal roof films):

- Compression strength: the insulation needs to resist the compression forces of the metal waterproofing at the level of the fixations on one hand and of foot traffic during installation and maintenance on the other hand.
- Warmth resistance: sufficiently high warmth resistance (R) or low lambda (λ) value in order to achieve a maximum insulation level with a minimum thickness. As a consequence the roof will be very compact.
- Insulation needs to be firesafe.

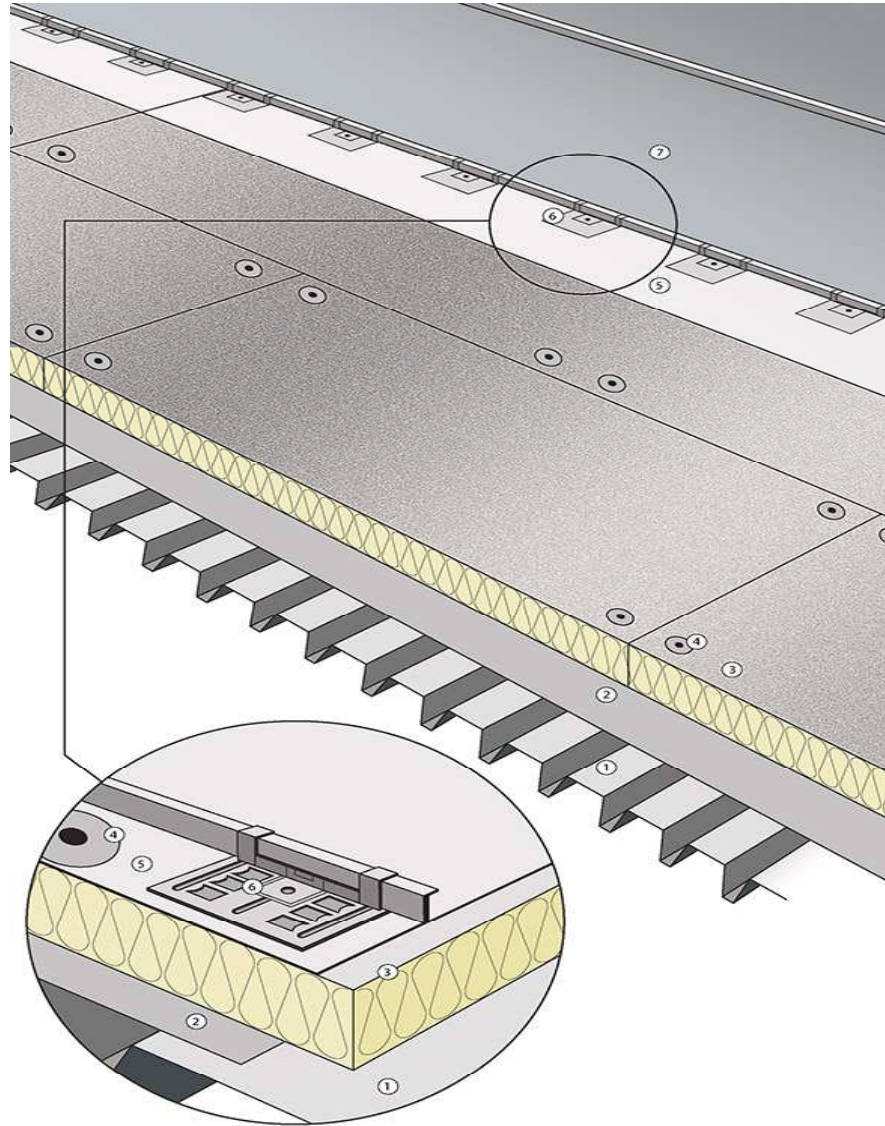
The material that meets these demands is POWERDECK, especially because of its:

- high compression resistance (average 1.5 kg/cm² or 15 ton/m²)
- low λ -value (0.024 W/mK): R = 2.5 m² K/W for a thickness of 6 cm.
- Fire classification A1 according to AR 19/12/1997, Euroclass B s2 d0 (end use steeldeck), Euroclass D s2 d0 (product) according to EN 13501-1

4.2 Flat roof with Powerdeck and with metal waterproofing system

4.2.1 Powerdeck on steeldeck with metal waterproofing system.

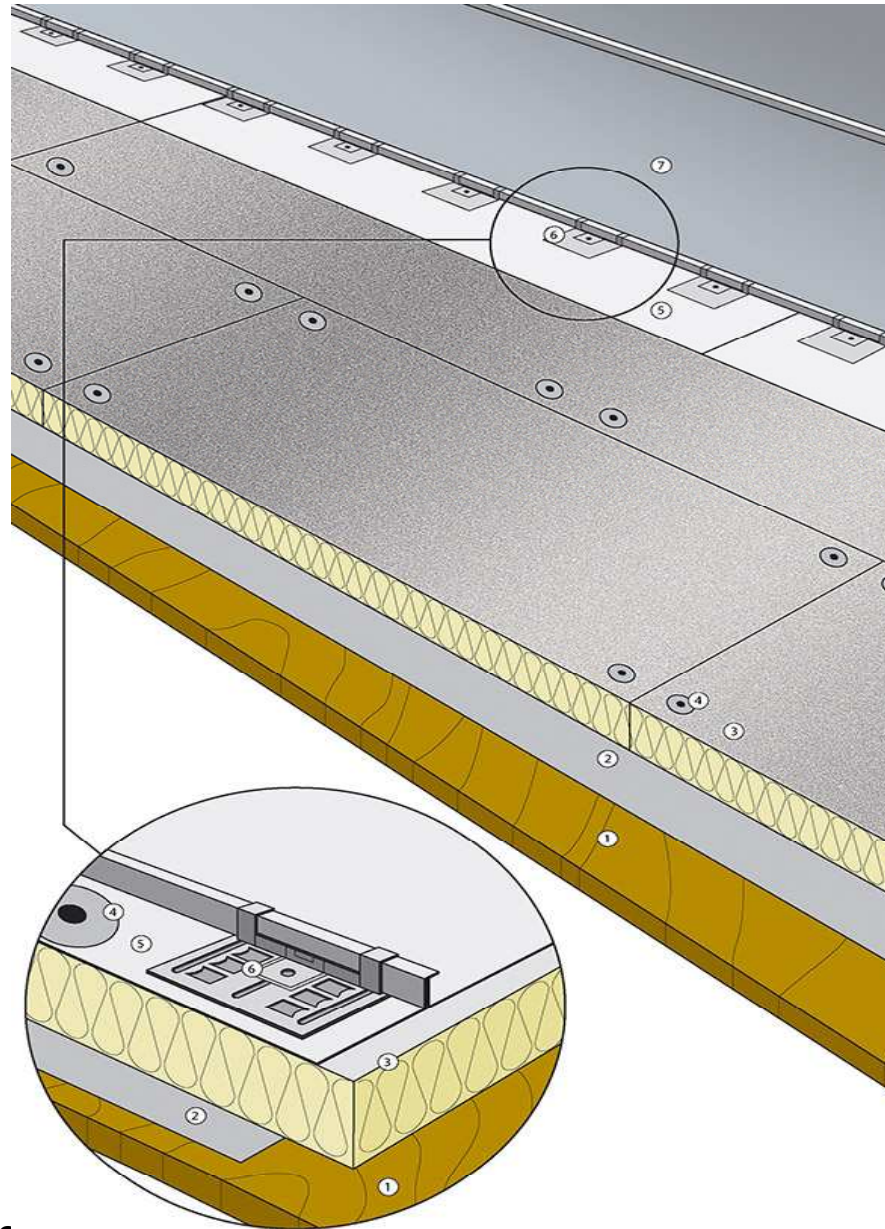
System appropriate for climate class I, II and III.



DESCRIPTION OF ROOFING SYSTEM

1. Steeldeck
2. Vapour control barrier: we advice a vapour control barrier of class E3, for instance a reinforced bitumen type APP or SBS with cold or hot bonded joints.
3. Thermal insulation layer POWERDECK, size 1200 mm x 2500 mm, previously mechanically fixed to the steeldeck board with 6 screws per board. Longitudinal measurement: 2500 mm crosswise the length of the steeldeck board. Place 1 screw in every corner zone of 100 mm x 250 mm, calculating the longitudinal measurement crosswise the length of the steeldeck board.
4. Mechanical fixation of the insulation boards: screw and washer. These need to meet the demands of the EUtgb class II and have a minimum diameter of 4.8 mm. The washers need to be compatible with the screws used.
5. PE-foil: a PE-foil of minimally 0,1 mm – strips need to be placed in overlap
6. Mechanical fixation of the metal waterproofing system: specific washer and sliding plate.
7. Metal waterproofing system: installed with the standing joint technique, fastened with adapted fixation tangles.
8. For quality metal waterproofing: (see: Prescriptions of respective manufacturer.)

4.2.2 Powerdeck on wooden deck with metal waterproofing system
System appropriate for climate class I, II and III



DESCRIPTION OF ROOFING SYSTEM

1. Wooden deck (multiplex, boarding)
2. Vapour control barrier: we advice a vapour control barrier of class E3, for instance a polyester reinforced bitumen type APP or SBS with cold or hot bonded joints.
3. Thermal insulation layer POWERDECK, size 1200 mm x 2500 mm, previously mechanically fixed to the steeldeck board with 6 screws per board. Longitudinal measurement: 2500 mm crosswise the length of the steeldeck board. Place 1 screw in every corner zone of 100 mm x 250 mm, calculating the longitudinal measurement crosswise the length of the steeldeck board.
4. Mechanical fixation of the insulation boards: screw and washer. These need to meet the demands of the EUtgb class II and have a minimum diameter of 4.8 mm. The washers need to be compatible with the screws used.
5. PE-foil: a PE-foil of minimally 0,1 mm – strips need to be placed in overlap
6. Mechanical fixation of the metal waterproofing system: specific washer and sliding plate.
7. Metal waterproofing system: installed with the standing joint technique, fastened with adapted fixation tingles.
8. For quality metal waterproofing: (see prescriptions of respective manufacturer).

5 PRODUCT DATA SHEETS

5.1 EUROTHANE Bi-3

5.2 EUROTHANE Bi-3A

5.3 POWERDECK

5.4 POWERDECK B

5.5 POWERDECK F

5.6 EUROTHANE SILVER