



Technical Book
ROOFING SYSTEMS
MAPEPLAN® PVC-P




INDEX

page 04	1. Green innovation
page 06	2. Production process
page 08	3. Roof application systems for PVC-P membranes
page 09	Mechanical fastening system
page 20	Ballasted, protected and green roof systems
page 30	Adhered system
page 35	4. Accessories

1. Green Innovation



ISO 14001	Plant certificated ISO 14001
30%	30% of energy used in our plant is produced by cogeneration process
100%	100% recycling of water in the production process
100%	100% recycling of production wastage
EPD	EPD certification
	LEED certification *
70%	Reduction by 70% of packaging materials
ENVIRONMENTAL FRIENDLY	Environmental friendly production system
CO₂	Reduced emission CO ₂

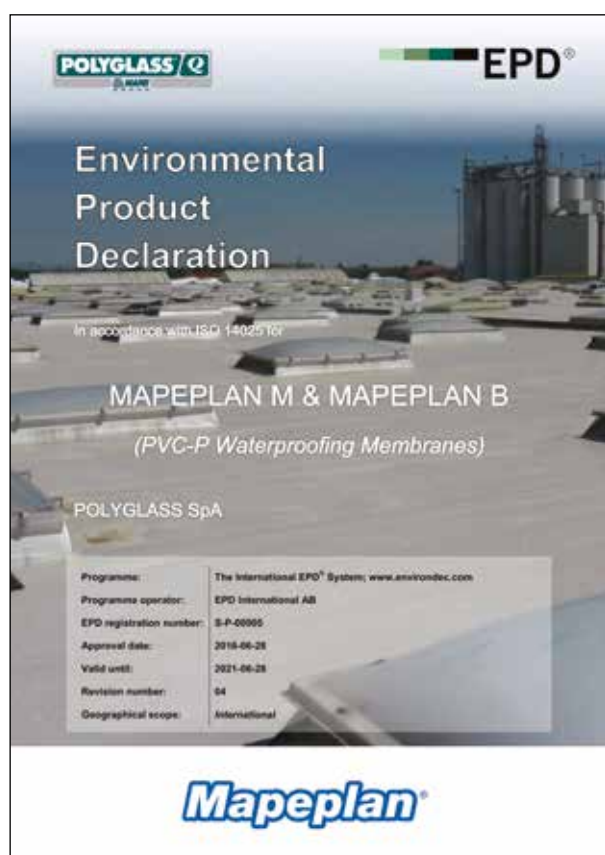
* LEED (Leadership in Energy and Environmental Design) is an internationally recognized green building certification system. It is the International reference for design, building and management of environmental friendly, high-performance buildings.



GREEN CREDENTIALS

The modern and technologically advanced production system has been designed and built to deliver the lowest possible environmental impact. This low environmental impact is guaranteed during all stages of the membrane life cycle: manufacture, transport, installation, service life, end-of-life disposal. Once the waterproofing membrane reaches the end of its life cycle, it can be removed and recycled/reused to produce new raw material.

EPD - Environmental Product Declaration



MAPEPLAN® waterproofing membranes come with an EPD (Environmental Product Declaration). The EPD is defined by standard ISO 14025 as a document containing quantified environmental data for a product with pre-set categories of parameters calculated using the Life Cycle Assessment (LCA) method and hence based on the ISO 14040 series of standards.

The Environmental Product Declarations (EPD) are just another mark of the transparency espoused by POLYGLASS SpA and the MAPEI Group in their dealings with the market to provide information on the environmental performance of their products and services, according to relevant categories of parameters and following internationally standardized guidelines.

2. Production Process



-
- Factory quality system certified according to ISO 9001/2015 and ISO 14001/2015
 - **Multi-extrusion coating** production line of latest generation
 - One passage production process, insertion of internal reinforcement without pre-lamination
 - Environmental friendly feeding vacuum pipes system
 - Constant digital control of the membrane thickness
 - Video electronic control of membrane's quality to both surfaces
 - No stress membrane winding system
 - Quality control tracking system
 - Total quality concept: from formulation of raw materials until finished product
 - Cogeneration plant for a rational and conscious production of electricity

3. Roof application systems for PVC-P membranes

	MECHANICAL FASTENING SYSTEM	BALLASTED, PROTECTED AND GREEN ROOF SYSTEMS	ADHERED SYSTEM
MAPEPLAN® M	■		
MAPEPLAN® B		■	■

MAPEPLAN® D unreinforced membrane for details and building particulars.

MECHANICAL FASTENING SYSTEM

Mapeplan® M B_{ROOF} (t1/t3)

Synthetic membrane in PVC-P with high-resistant polyester net reinforcement.

Mechanically fixed membrane system for exposed roof installations.

MAPEPLAN® M is produced in one **multi-extrusion coating** process, and insertion of internal reinforcement is without pre-lamination.

Standard colour of top layer is light grey, the bottom layer is dark grey.

MAPEPLAN® M is UV-resistant and may be exposed to all weather conditions.

	STANDARD THICKNESSES		
MAPEPLAN® M B _{ROOF} (t1/t3)	1,5 mm	1,8 mm	2,0 mm

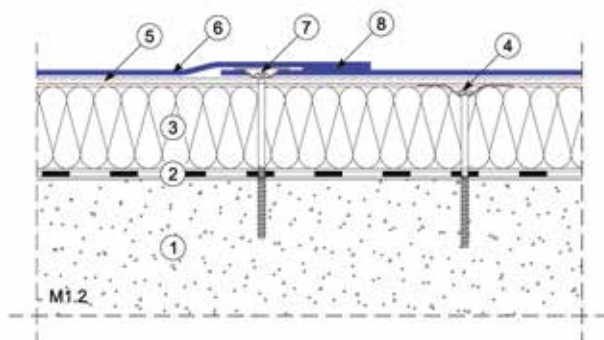
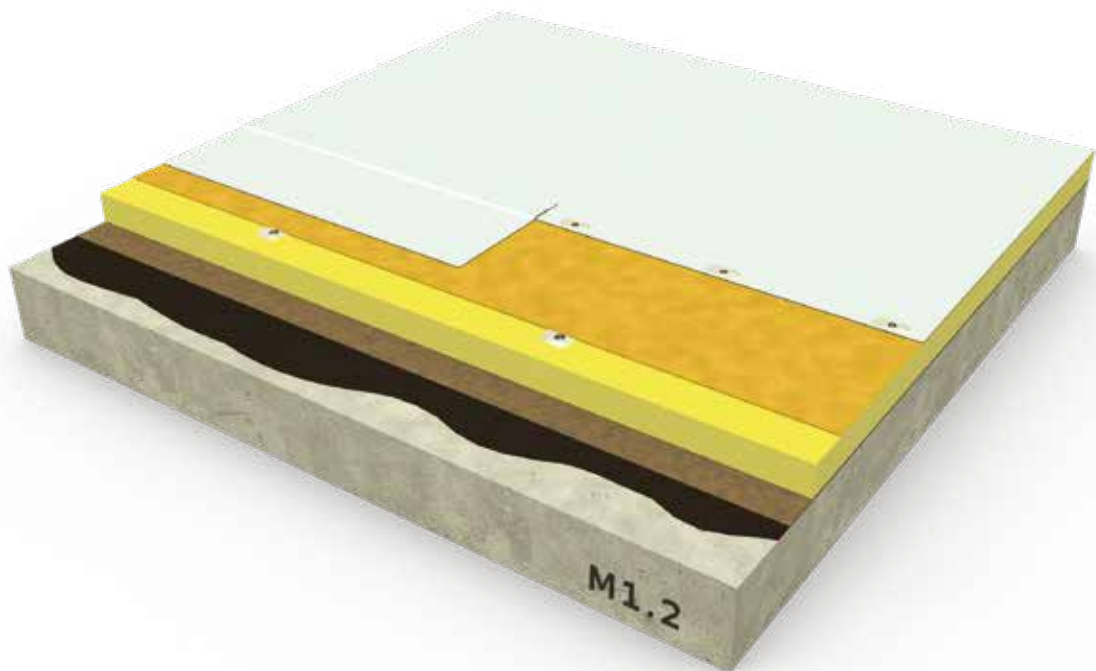
Available also in B_{ROOF} (t2) version, according to EN 13501-5.

CHARACTERISTICS OF MAPEPLAN® M:

- Resistant to ageing processes
- Flexible at low temperatures
- Puncture resistant
- Hail resistant
- UV resistant
- High workability and weldability
- Vapour permeable
- Dimensionally stable
- Excellent fire behaviour

BUILD-UP M1.2

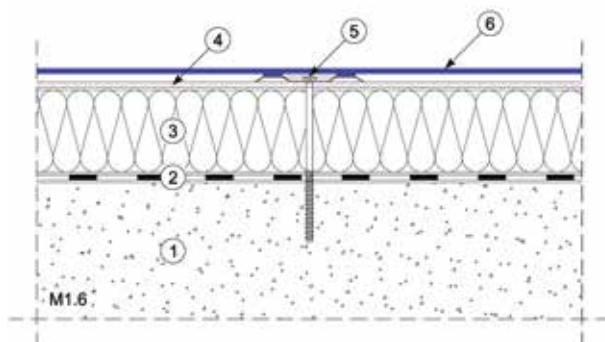
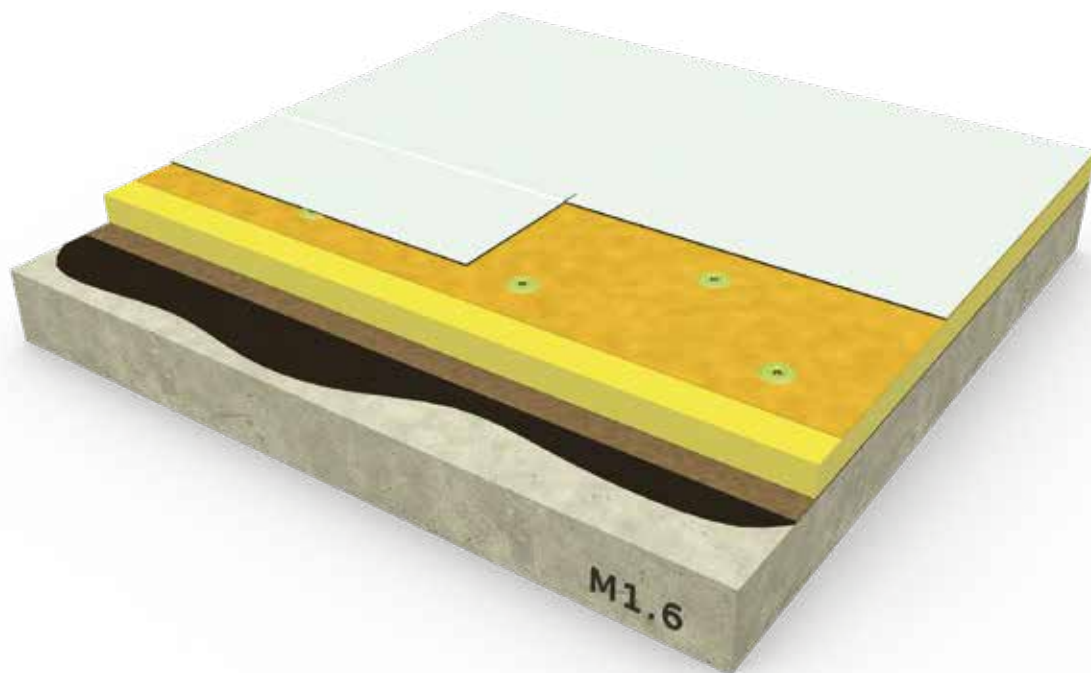
MAPEPLAN® M membrane - Insulated roof with concrete deck and spot fastening



- ① Concrete/composite deck
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Mechanically fastened thermal insulation layer
- ④ Mechanical fastening of insulation
- ⑤ Separation layer (if necessary)
- ⑥ **MAPEPLAN® M** waterproofing membrane
- ⑦ Mechanical fastening with stress plate
- ⑧ Welding

BUILD-UP M1.6

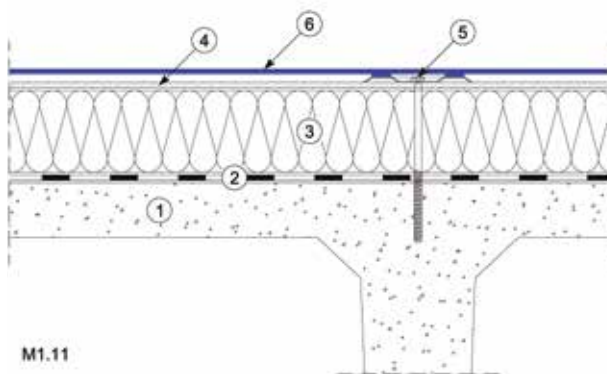
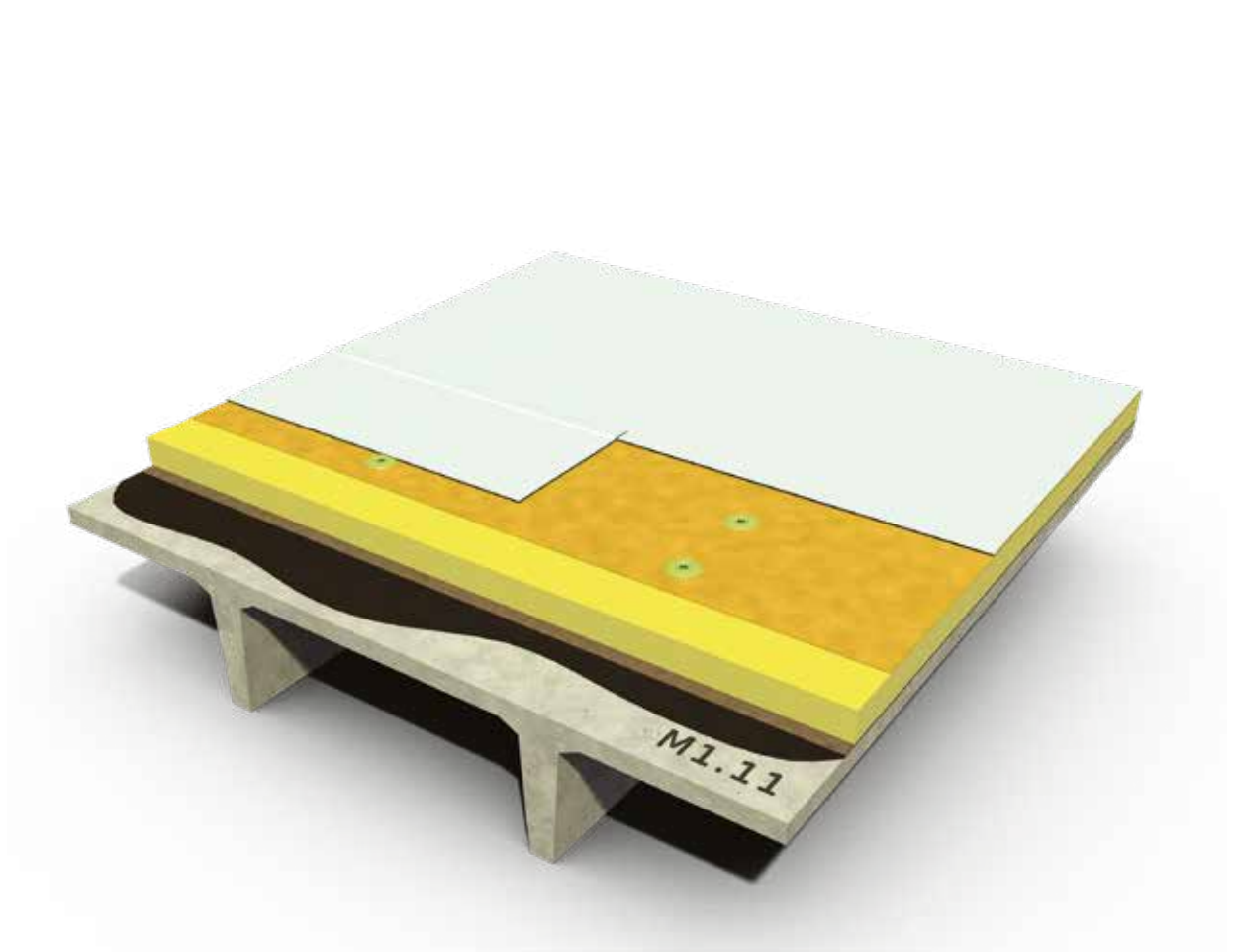
MAPEPLAN® M membrane - Insulated roof with concrete deck and induction fastening



- ① Concrete/composite deck
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Mechanically fastened thermal insulation layer
- ④ Separation layer (if necessary)
- ⑤ Induction welding mechanical fastening
- ⑥ **MAPEPLAN® M** waterproofing membrane

BUILD-UP M1.11

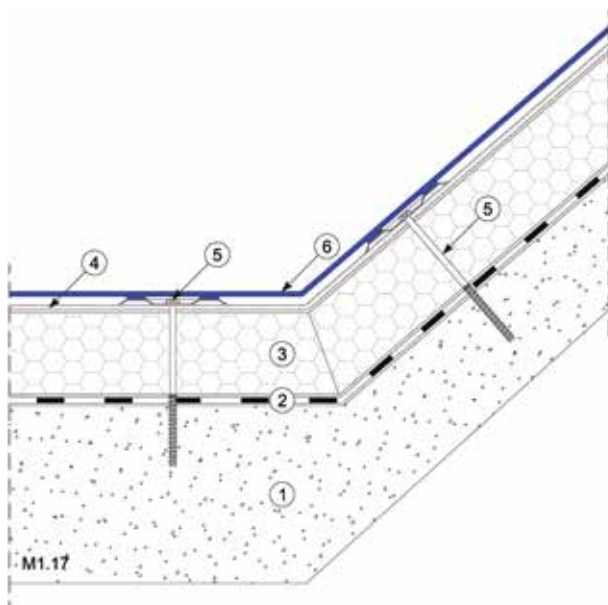
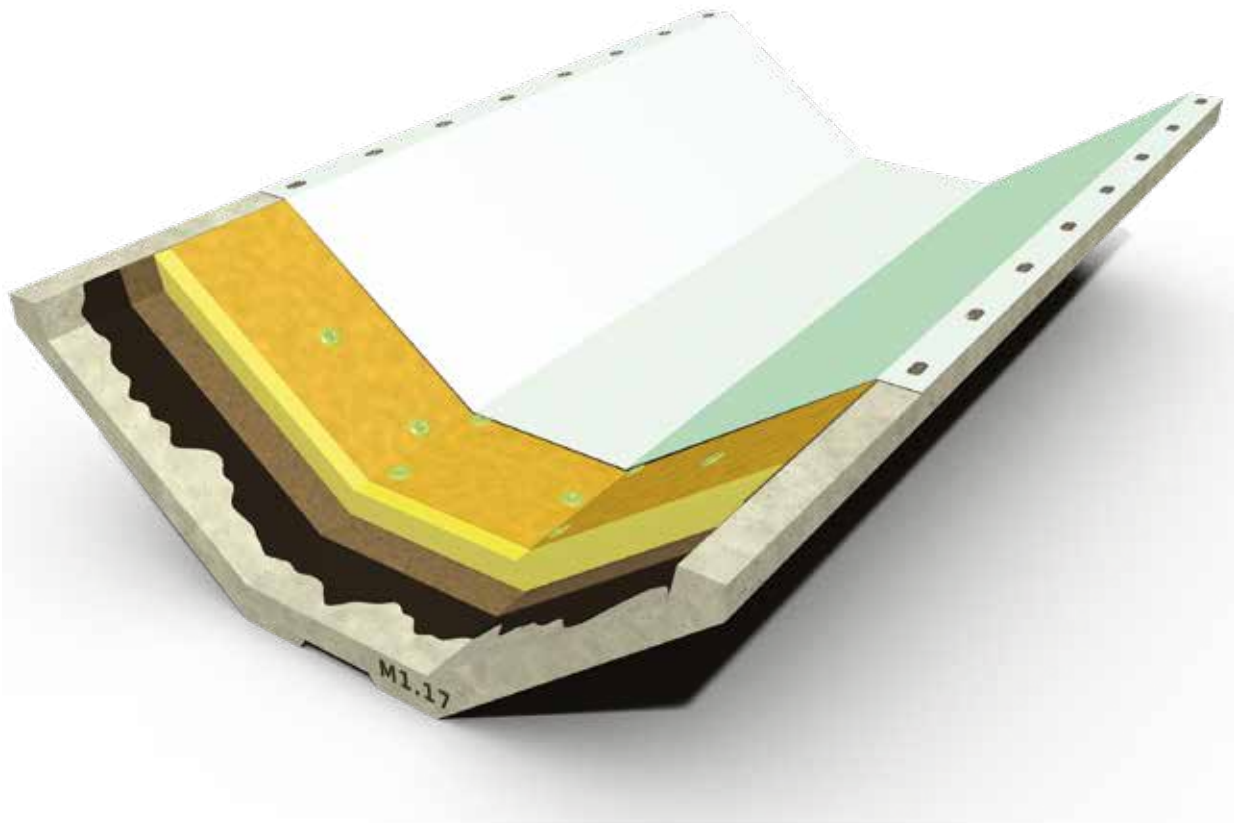
MAPEPLAN® M membrane - Insulated roof with precast concrete beam deck and induction fastening



- ① Deck - precast double tee beams
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Mechanically fastened thermal insulation layer
- ④ Separation layer (if necessary)
- ⑤ Induction welding mechanical fastening
- ⑥ **MAPEPLAN® M** waterproofing membrane

BUILD-UP M1.17

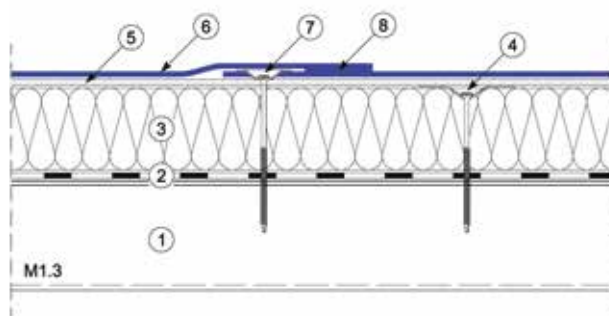
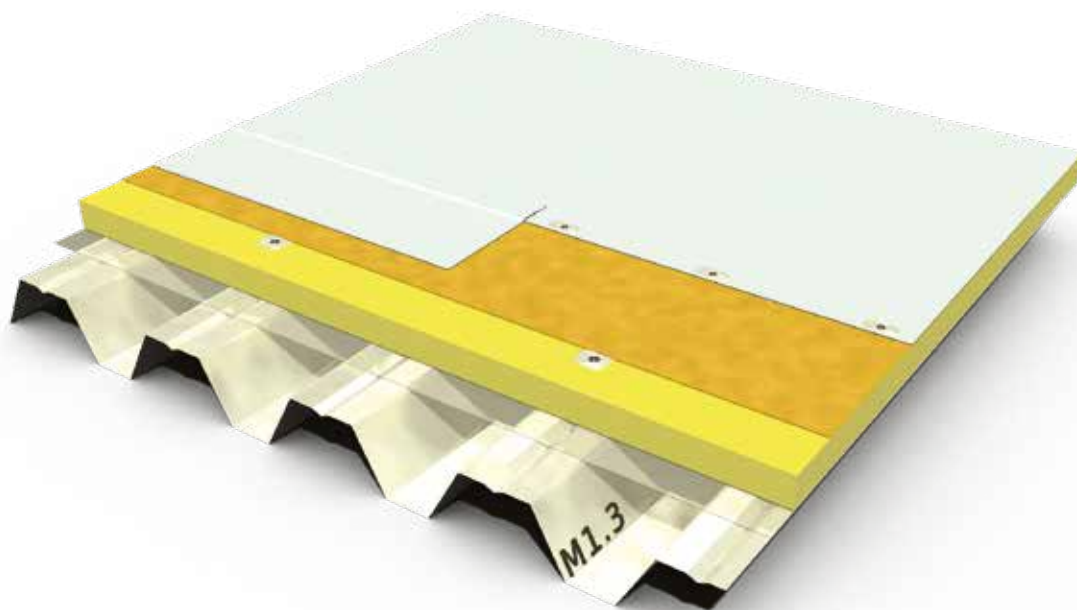
MAPEPLAN® M membrane - Insulated roof with precast concrete V beam deck and induction fastening



- ① Deck - precast V beams
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Mechanically fastened thermal insulation layer
- ④ Separation layer (if necessary)
- ⑤ Induction welding mechanical fastening
- ⑥ **MAPEPLAN® M** waterproofing membrane

BUILD-UP M1.3

MAPEPLAN® M membrane - Insulated roof with corrugated steel deck and spot fastening



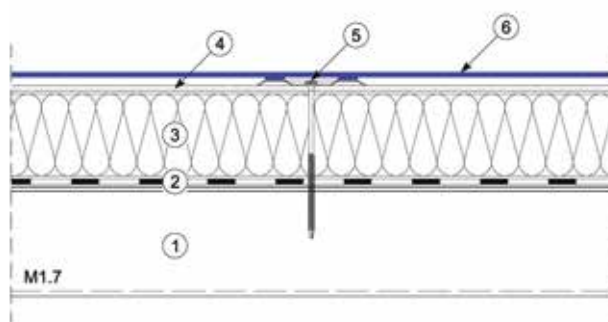
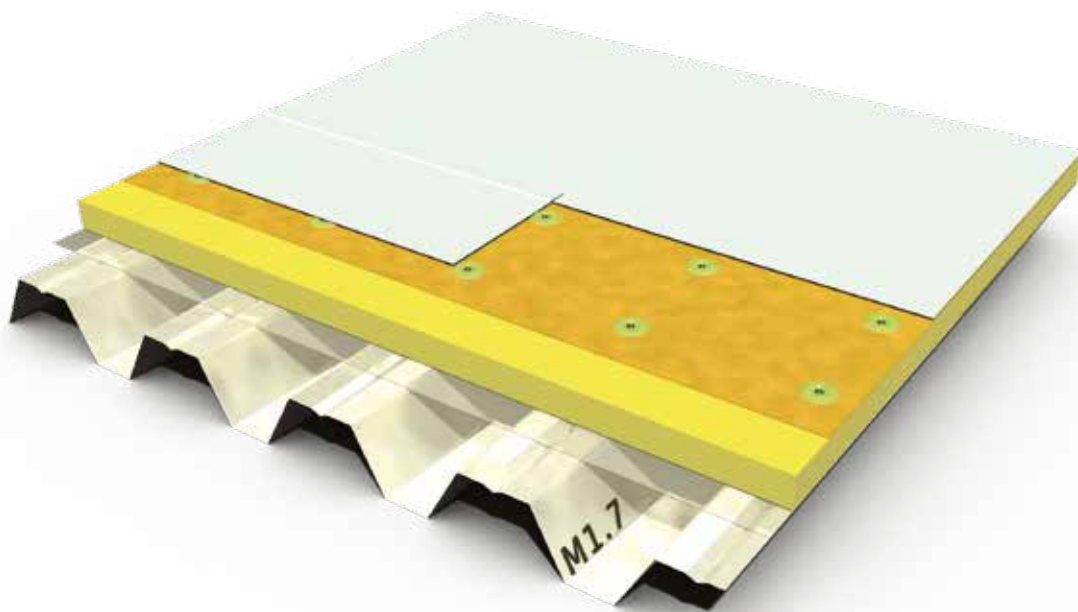
- ① Corrugated steel deck
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **MAPEPLAN® EVO SK**)
- ③ Mechanically fastened thermal insulation layer
- ④ Mechanical fastening of insulation
- ⑤ Separation layer (if necessary)
- ⑥ **MAPEPLAN® M** waterproofing membrane *1
- ⑦ Mechanical fastening with stress plate
- ⑧ Welding

NOTE *1:

When fixing in to a corrugated steel deck, the membrane must be installed at 90° to the decking profile.

BUILD-UP M1.7

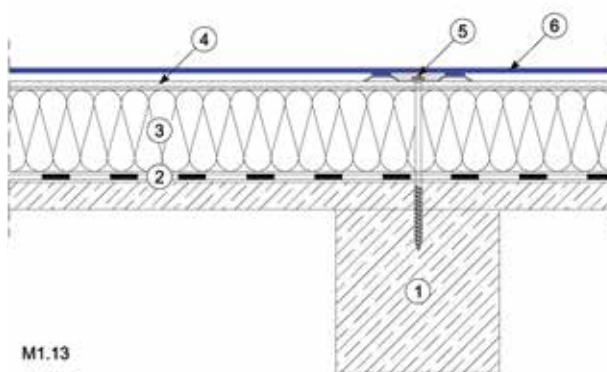
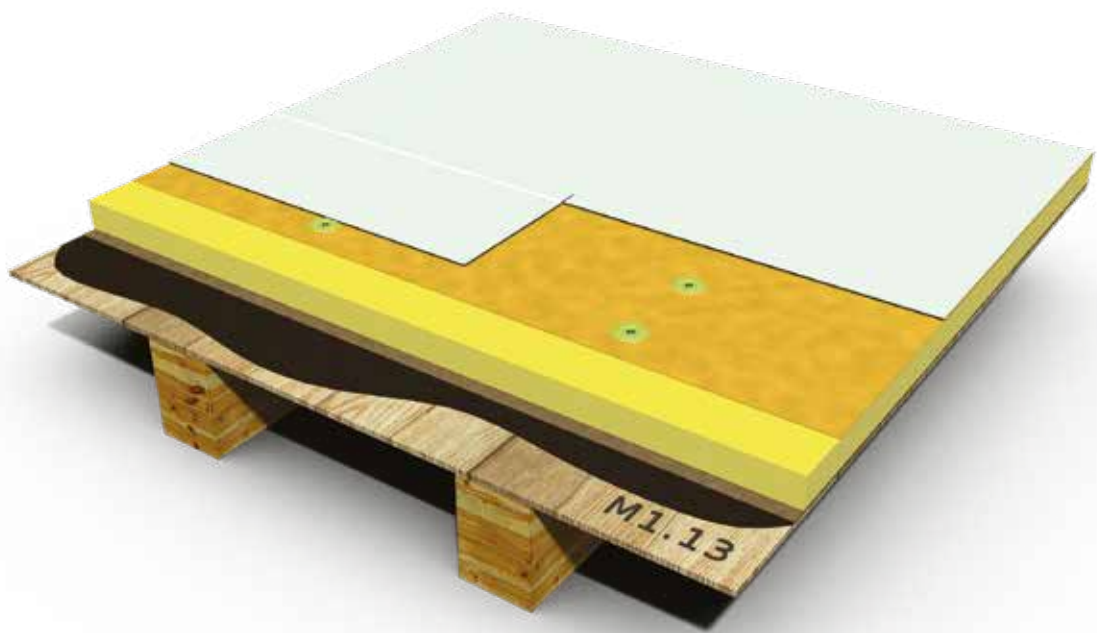
MAPEPLAN® M membrane - Insulated roof with corrugated steel deck and induction fastening



- ① Corrugated steel deck
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **MAPEPLAN® EVO SK**)
- ③ Mechanically fastened thermal insulation layer
- ④ Separation layer (if necessary)
- ⑤ Induction welding mechanical fastening
- ⑥ **MAPEPLAN® M** waterproofing membrane

BUILD-UP M1.13

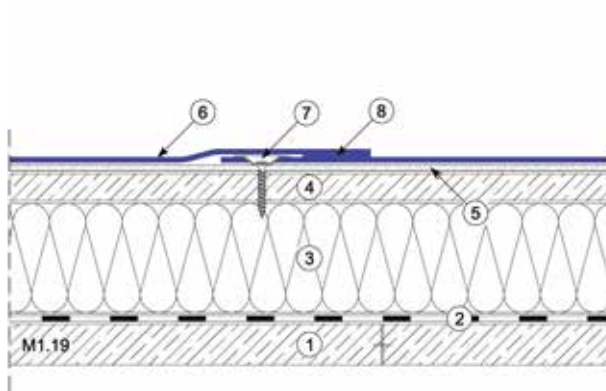
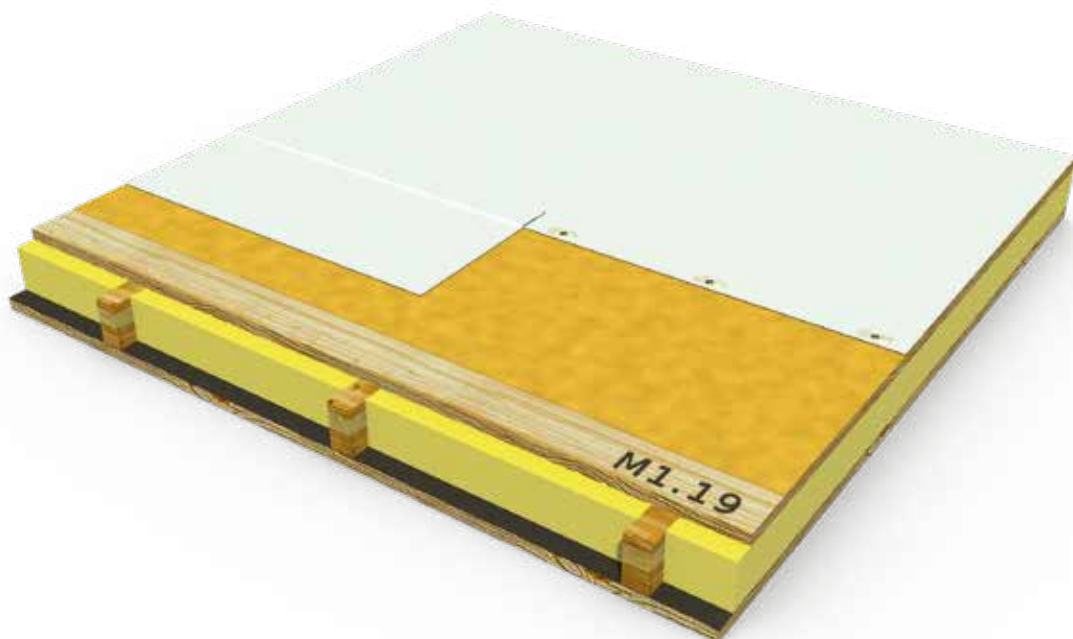
MAPEPLAN® M membrane - Insulated roof with thin wooden deck and induction fastening



- ① Deck - wooden boarding and battens
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **MAPEPLAN® EVO SK** or **IDROPRIMER + POLYVAP SA**)
- ③ Mechanically fastened thermal insulation layer
- ④ Separation layer (if necessary)
- ⑤ Induction welding mechanical fastening
- ⑥ **MAPEPLAN® M** waterproofing membrane

BUILD-UP M1.19

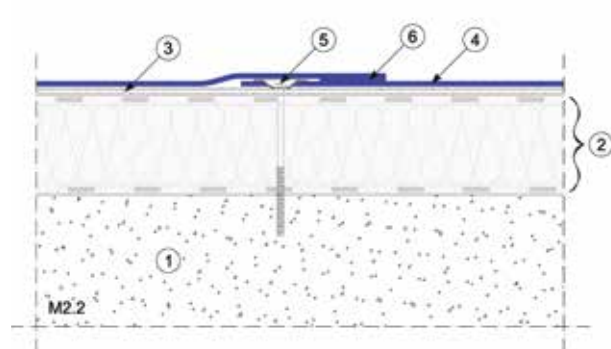
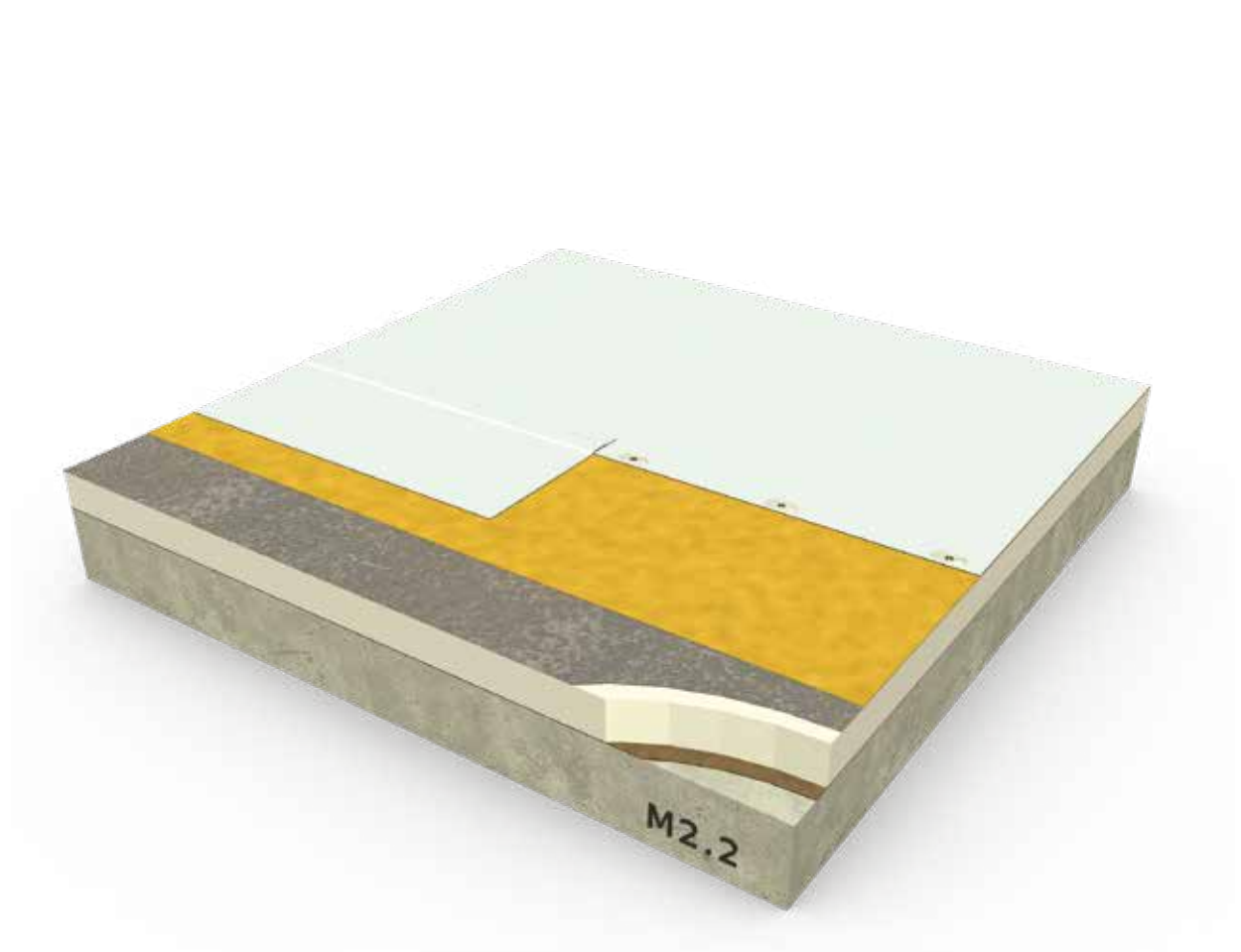
MAPEPLAN® M membrane - Insulated roof with double-sheathed wooden deck and spot fastening



- ① Deck - 1st wooden board
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **MAPEPLAN® EVO SK** or **IDROPRIMER + POLYVAP SA**)
- ③ Thermal insulation layer
- ④ 2nd wooden board
- ⑤ Levelling layer
- ⑥ **MAPEPLAN® M** waterproofing membrane
- ⑦ Mechanical fastening with stress plate
- ⑧ Welding

BUILD-UP M2.2

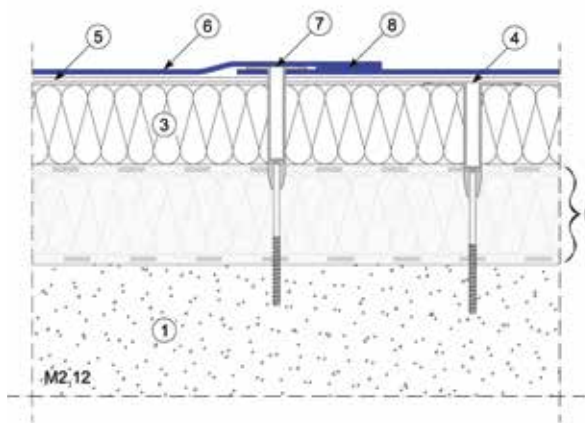
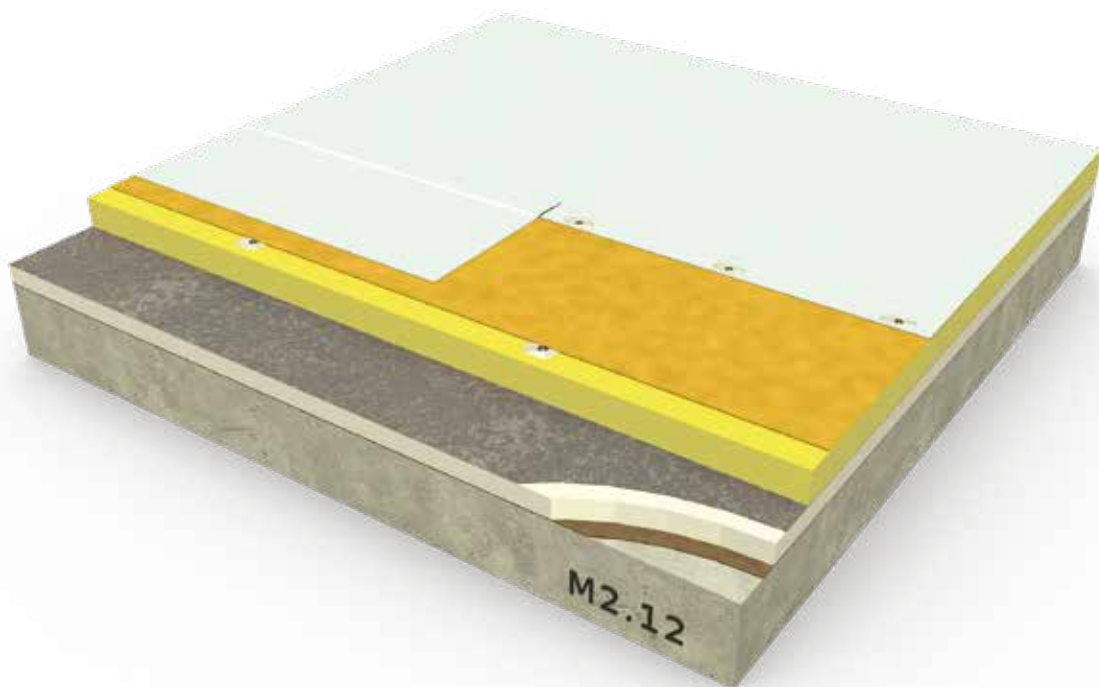
MAPEPLAN® M membrane - Over-roofing refurbishment with spot fastening



- ① Concrete/composite deck
- ② Existing waterproofing build-up
- ③ Separation layer
- ④ **MAPEPLAN® M** waterproofing membrane
- ⑤ Mechanical fastening with stress plate
- ⑥ Welding

BUILD-UP M2.12

MAPEPLAN® M membrane - Refurbishment incorporating thermal insulation and spot fastening



- ① Concrete/composite deck
- ② Existing waterproofing build-up
- ③ Supplementary thermal insulation layer
- ④ Mechanical fastening with sleeve
- ⑤ Separation layer
- ⑥ **MAPEPLAN® M** waterproofing membrane
- ⑦ Mechanical fastening with sleeve
- ⑧ Welding

BALLASTED, PROTECTED AND GREEN ROOF SYSTEMS

Mapeplan® B

Synthetic membrane in PVC-P with high dimensional stability glass mat reinforcement.

Suitable for ballasted and green roof systems.

MAPEPLAN® B is produced in one **multi-extrusion coating** process, and insertion of internal reinforcement is without pre-lamination.

Standard colour of top layer is light grey, the bottom layer is dark grey.

MAPEPLAN® B is UV-resistant, resistant to microbiological attacks and is root-resistant.

MAPEPLAN® B is totally resistant to roots and rhizomes, in compliance with the strict two-year FLL test, it also complies with the EN 13948 standard.

	STANDARD THICKNESSES		
MAPEPLAN® B	1,5 mm	1,8 mm	2,0 mm

(Other thicknesses are available on request).

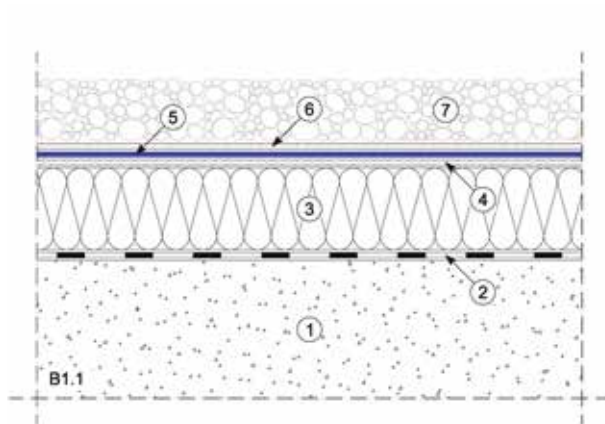
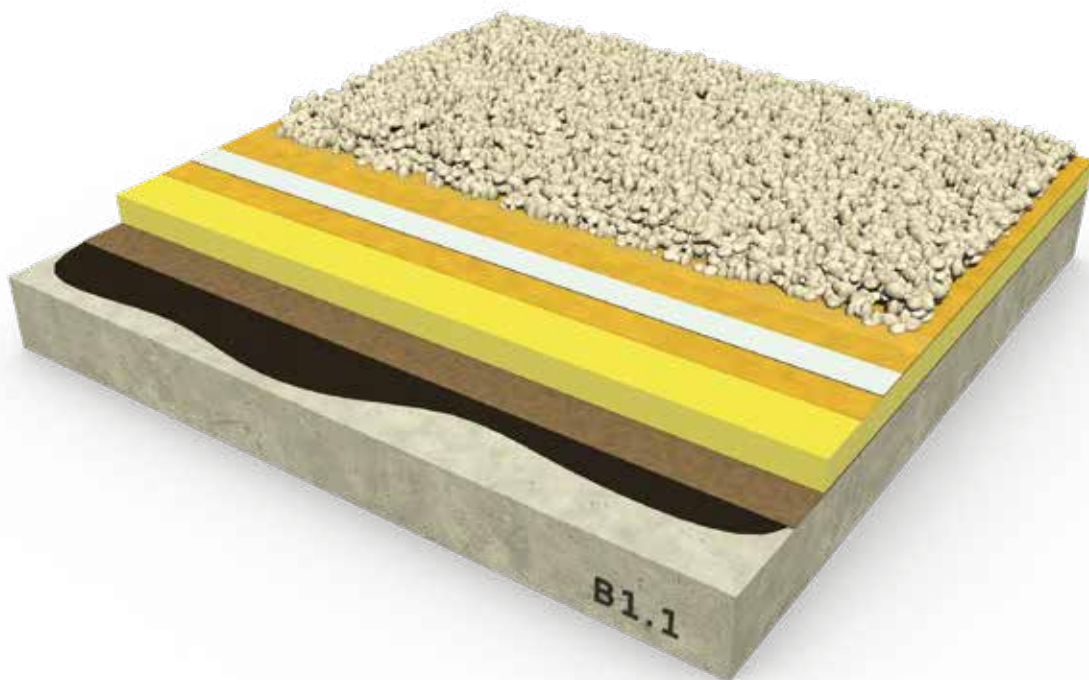
CHARACTERISTICS OF MAPEPLAN® B:

- Resistant to ageing processes
- Root resistant - FLL test
- Resistant to microbiological attacks
- Flexible at low temperatures
- Puncture resistant
- UV resistant
- High workability and weldability
- Vapour permeable
- Dimensionally stable
- Excellent fire behaviour



BUILD-UP B1.1

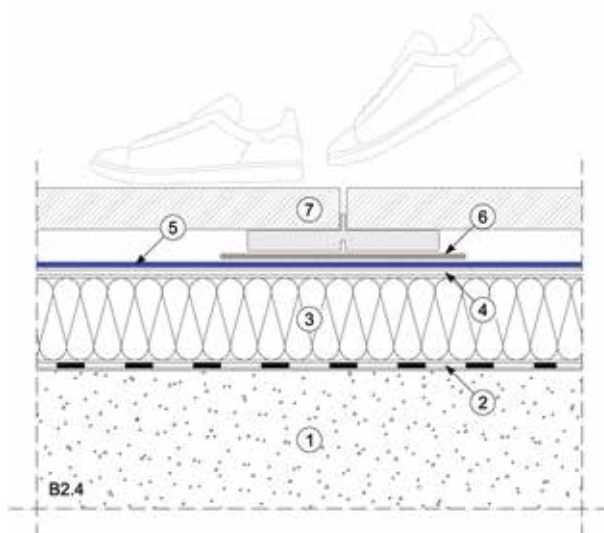
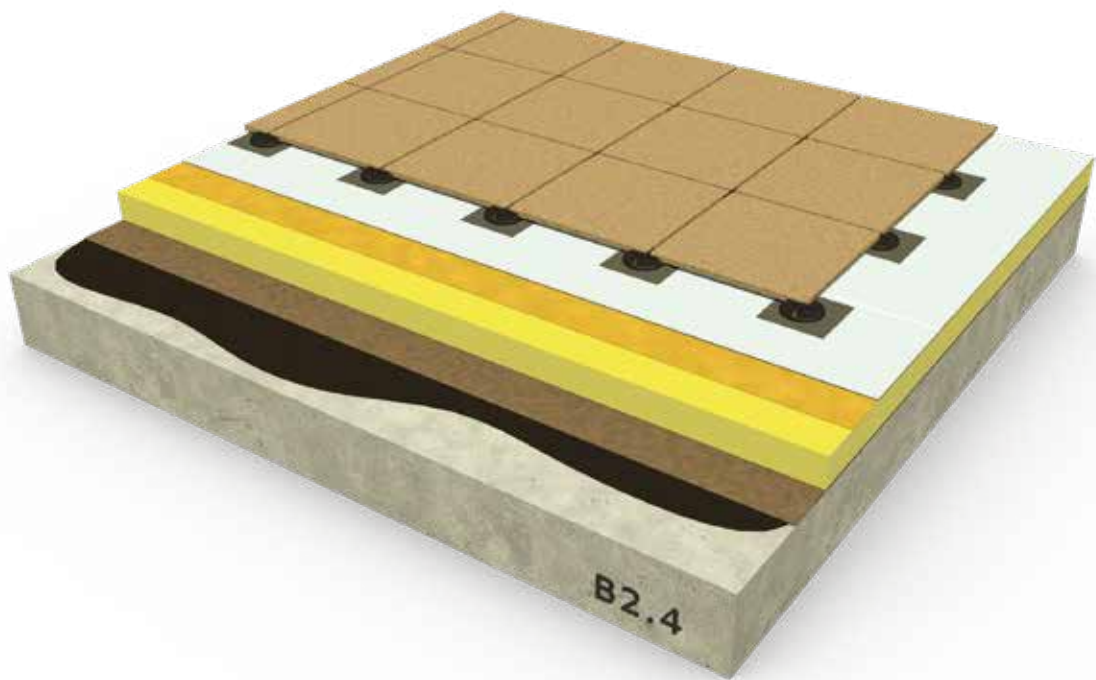
MAPEPLAN® B membrane - Insulated roof ballasted with gravel



- ① Structure
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane
- ⑥ Protection layer **POLYDREN PP**
- ⑦ Gravel

BUILD-UP B2.4

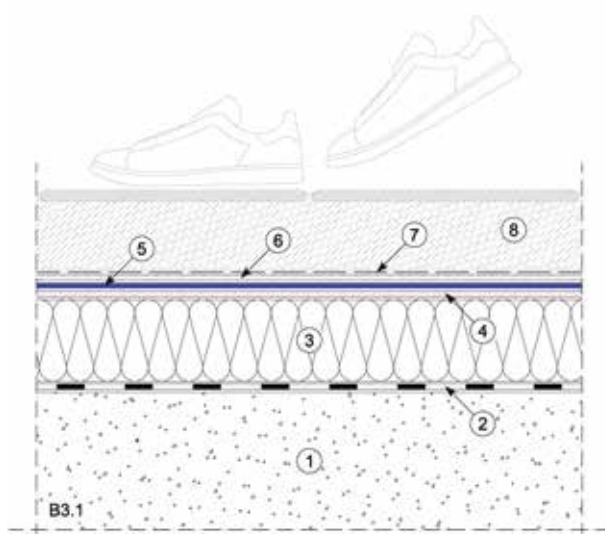
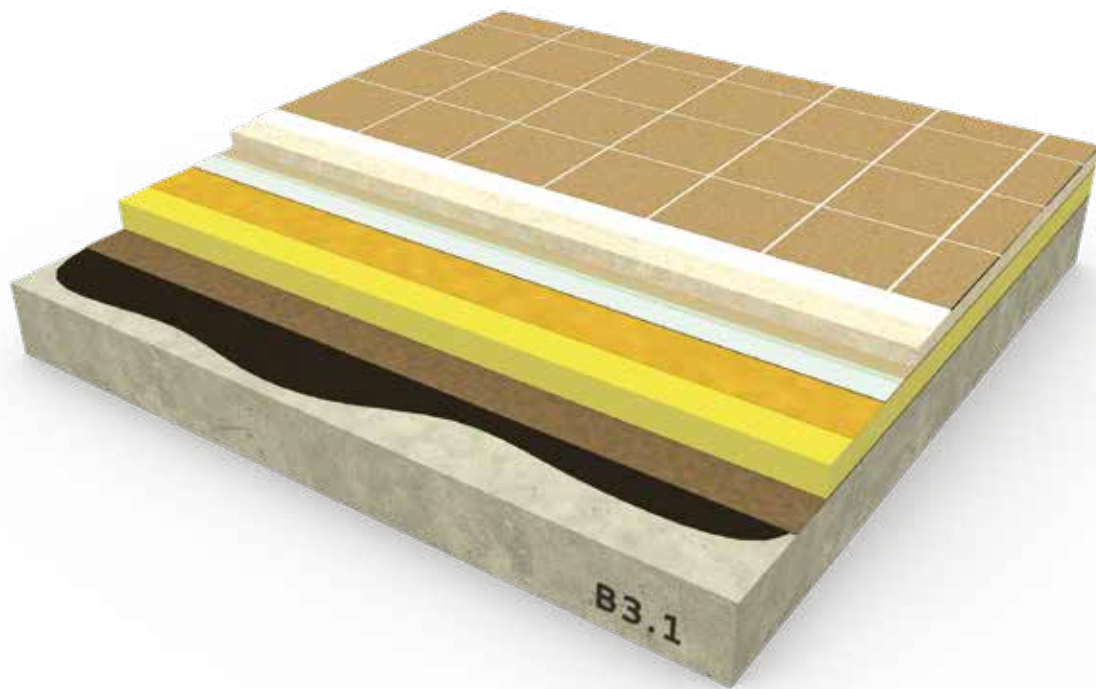
MAPEPLAN® B membrane - Insulated roof ballasted with floating paving



- ① Structure
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane
- ⑥ Protection patch **MAPEPLAN®**
- ⑦ Floating paving

BUILD-UP B3.1

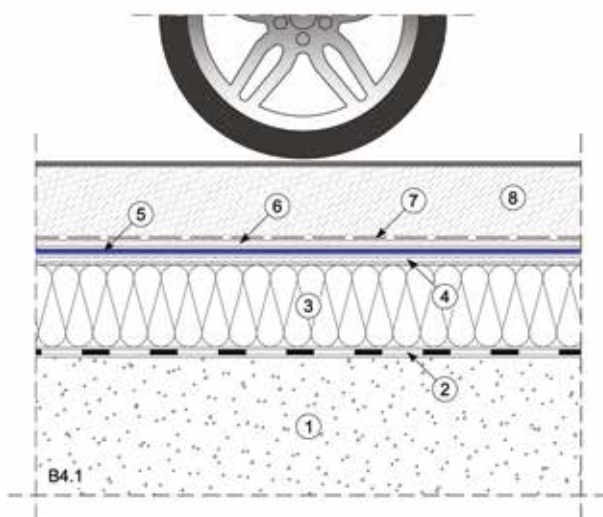
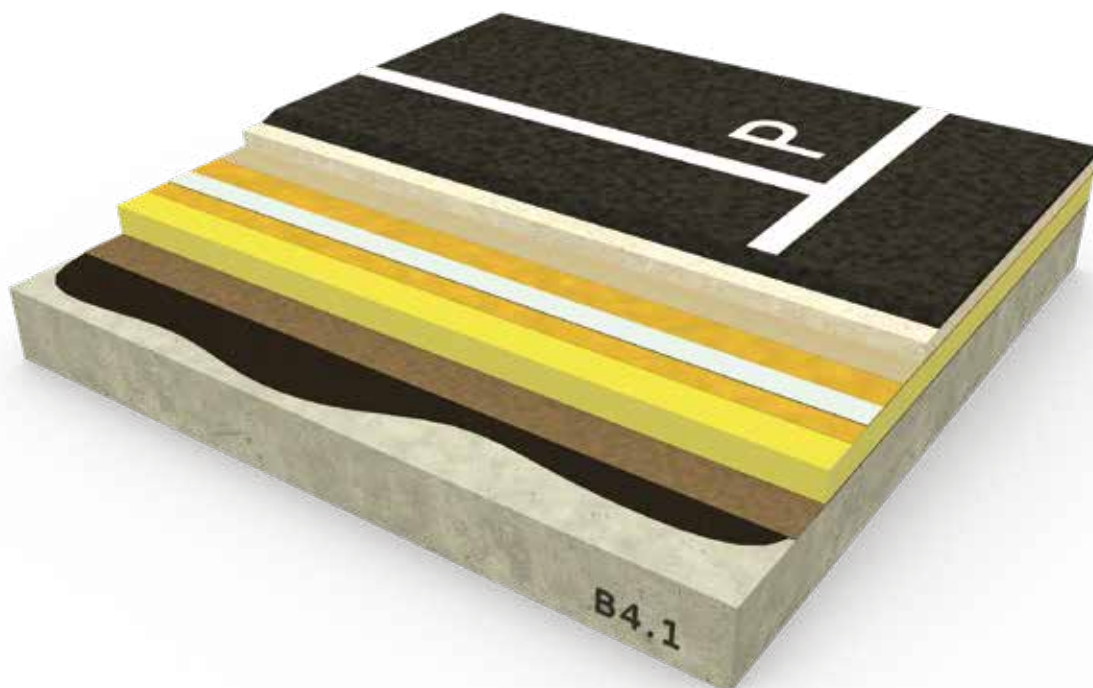
MAPEPLAN® B membrane - Insulated walkable roof



- ① Structure
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane
- ⑥ Protection layer **POLYDREN PP**
- ⑦ Anti-imbibition layer **MAPEPLAN® PE micro-perforated**
- ⑧ Tiled floor

BUILD-UP B4.1

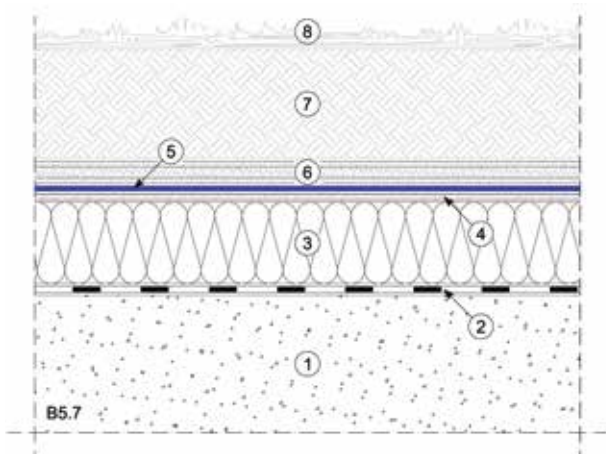
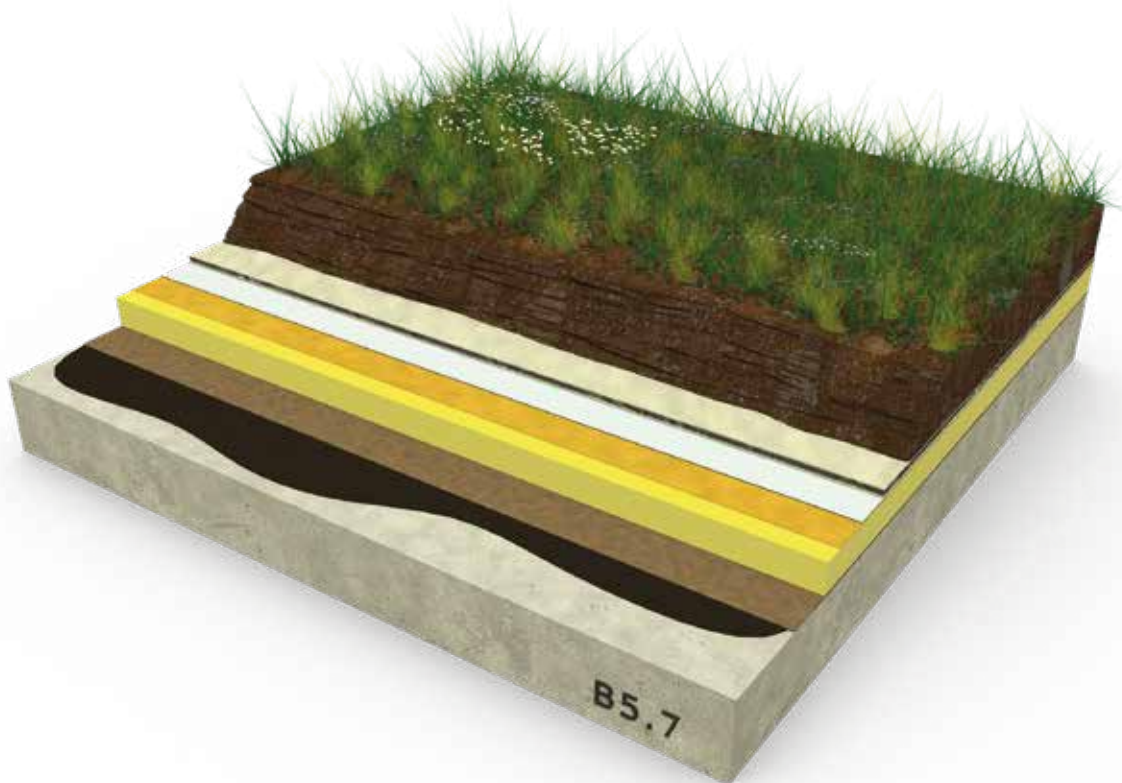
MAPEPLAN® B membrane - Insulated roof parking



- ① Structure
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane
- ⑥ Protection layer **POLYDREN PP**
- ⑦ Anti-imbibition layer **MAPEPLAN® PE micro-perforated**
- ⑧ Concrete screed with wearing course

BUILD-UP B5.7

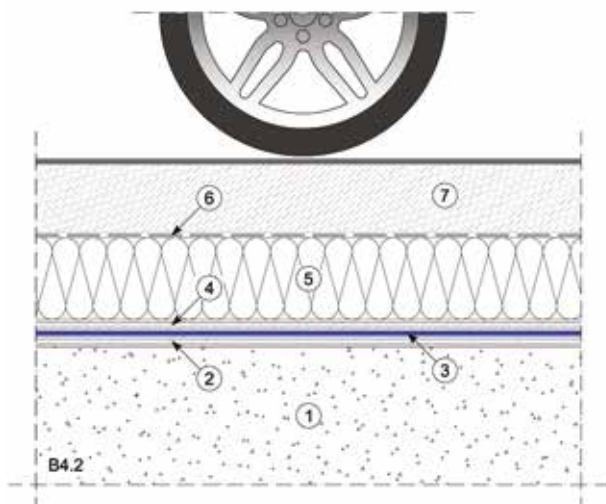
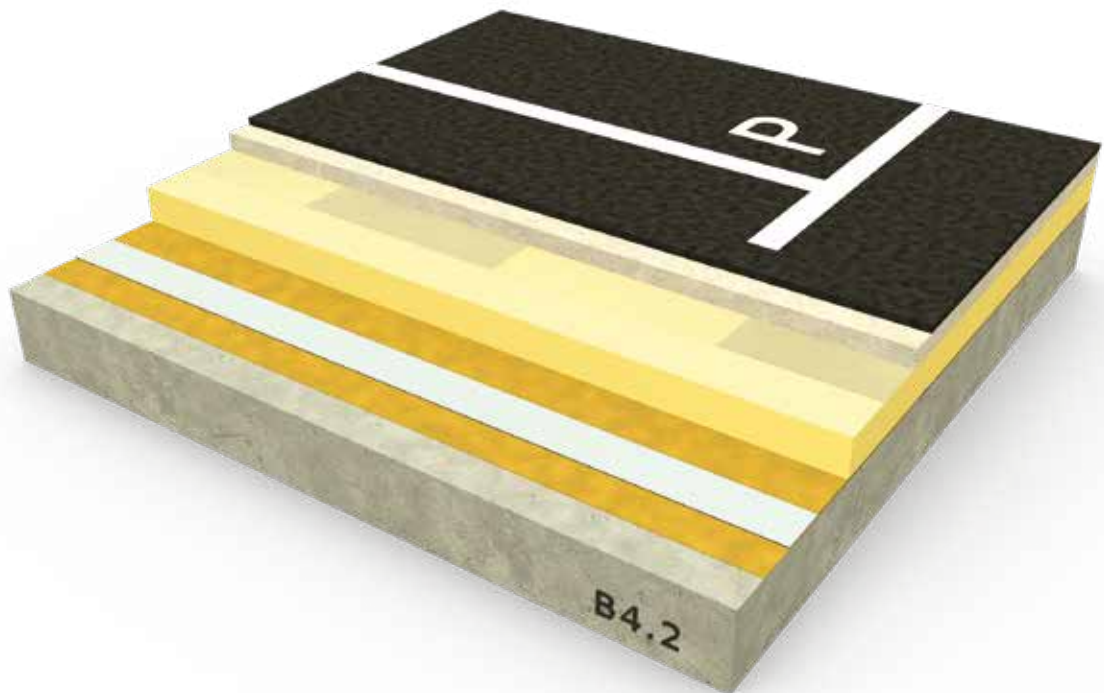
MAPEPLAN® B membrane - Insulated roof with POLYSTUOIA geocomposite drainage



- ① Structure
- ② Vapour control layer (e.g. **IDROPRIMER + POLYVAP**)
- ③ Thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane - Certificate FLL
- ⑥ Protection and drainage layer **POLYSTUOIA**
- ⑦ Growing substrate
- ⑧ Vegetation

BUILD-UP B4.2

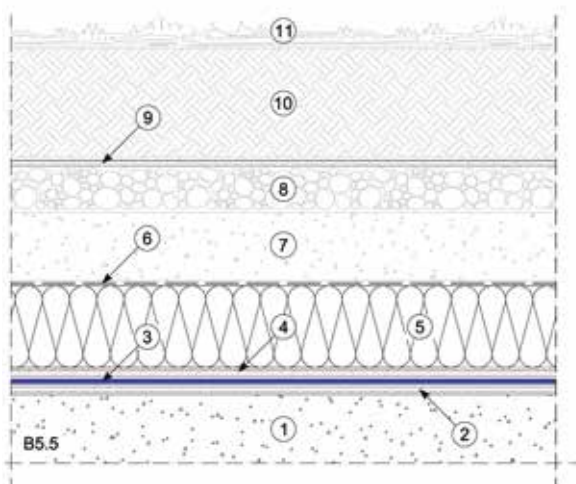
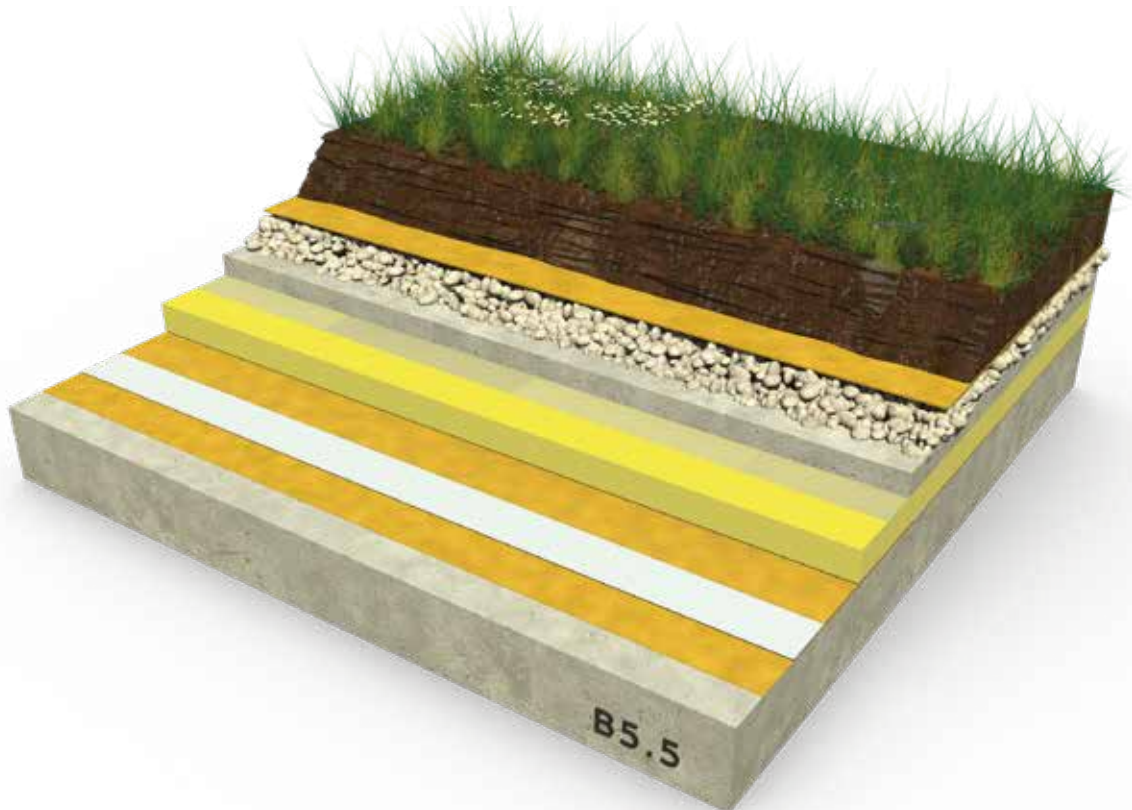
MAPEPLAN® B membrane - Inverted roof parking



- ① Structure
- ② Levelling layer **POLYDREN PP**
- ③ **MAPEPLAN® B** waterproofing membrane
- ④ Separation layer **POLYDREN PP**
- ⑤ Thermal insulation layer Extruded Polystyrene XPS
- ⑥ Anti-imbibition layer **MAPEPLAN® PE micro-perforated**
- ⑦ Concrete screed with wearing course

BUILD-UP B5.5

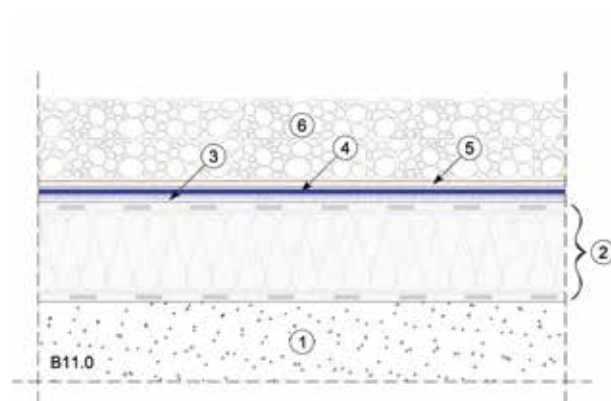
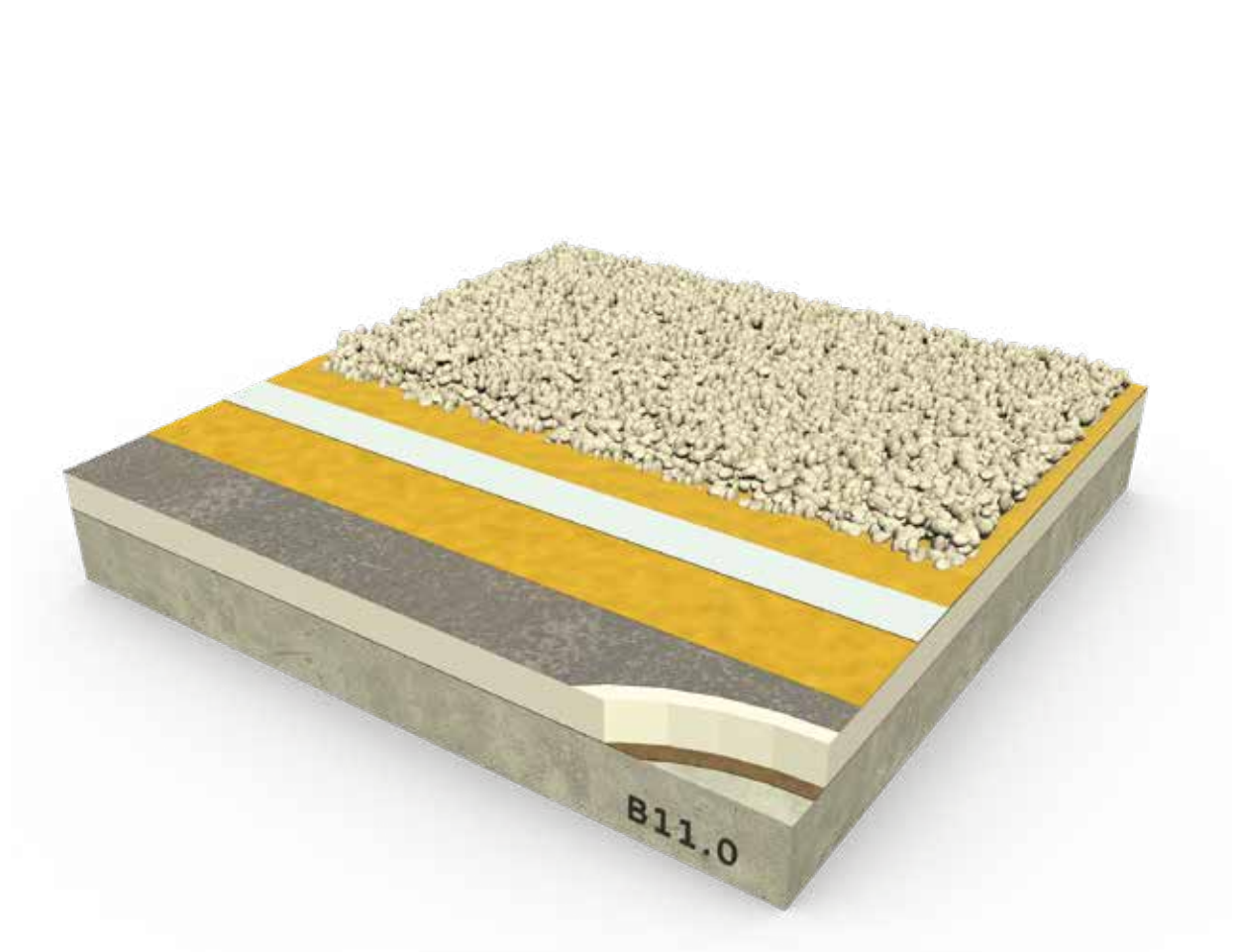
MAPEPLAN® B membrane - Inverted green roof



- ① Structure
- ② Levelling layer **POLYDREN PP**
- ③ **MAPEPLAN® B** waterproofing membrane - Certificate FLL
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ Thermal insulation layer Extruded Polystyrene XPS
- ⑥ Anti-imbibition layer **MAPEPLAN® PE micro-perforated**
- ⑦ Protective concrete screed
- ⑧ Drainage layer (gravel or expanded clay)
- ⑨ Filter layer **POLYDREN PP**
- ⑩ Growing substrate
- ⑪ Vegetation

BUILD-UP B11.0

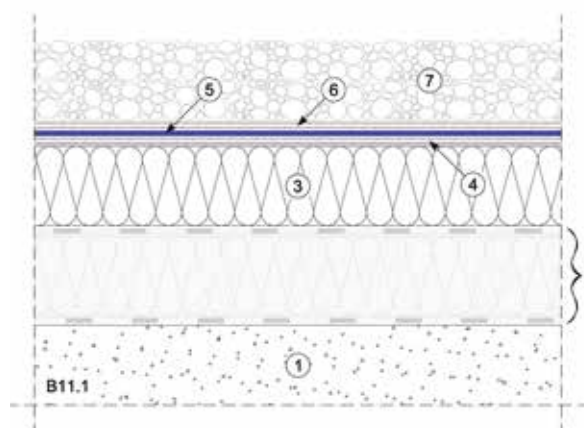
MAPEPLAN® B membrane - Over-roofing refurbishment ballasted with gravel



- ① Structure
- ② Existing waterproofing build-up
- ③ Separation layer **POLYDREN PP**
- ④ **MAPEPLAN® B** waterproofing membrane
- ⑤ Protection layer **POLYDREN PP**
- ⑥ Gravel

BUILD-UP B11.1

MAPEPLAN® B membrane - Refurbishment incorporating thermal insulation ballasted with gravel



- ① Structure
- ② Existing waterproofing membrane
- ③ Supplementary thermal insulation layer
- ④ Separation layer **POLYDREN PP** (if necessary)
- ⑤ **MAPEPLAN® B** waterproofing membrane
- ⑥ Protection layer **POLYDREN PP**
- ⑦ Gravel

ADHERED SYSTEMS

Maapeplan® B

Synthetic membrane in PVC-P with high dimensional stability glass mat reinforcement.

Adhered system for exposed roof installations with specific monocomponent adhesives for double coating (contact adhesive)

MAPEPLAN® ADS 200 or MAPEPLAN® ADS 210.

MAPEPLAN® B is produced in one **multi-extrusion coating** process, and insertion of internal reinforcement is without pre-lamination.

Standard colour of top layer is light grey, the bottom layer is dark grey.

MAPEPLAN® B is UV-resistant, resistant to microbiological attacks and is root-resistant.

MAPEPLAN® B is totally resistant to roots and rhizomes, in compliance with the strict two-year FLL test, it also complies with the EN 13948 standard.

	STANDARD THICKNESSES		
MAPEPLAN® B	1,5 mm	1,8 mm	2,0 mm

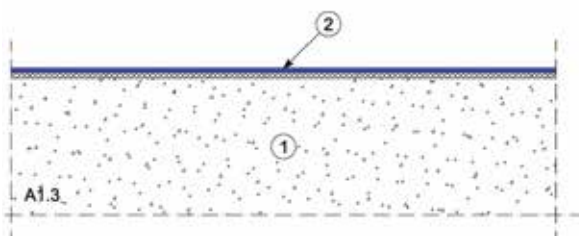
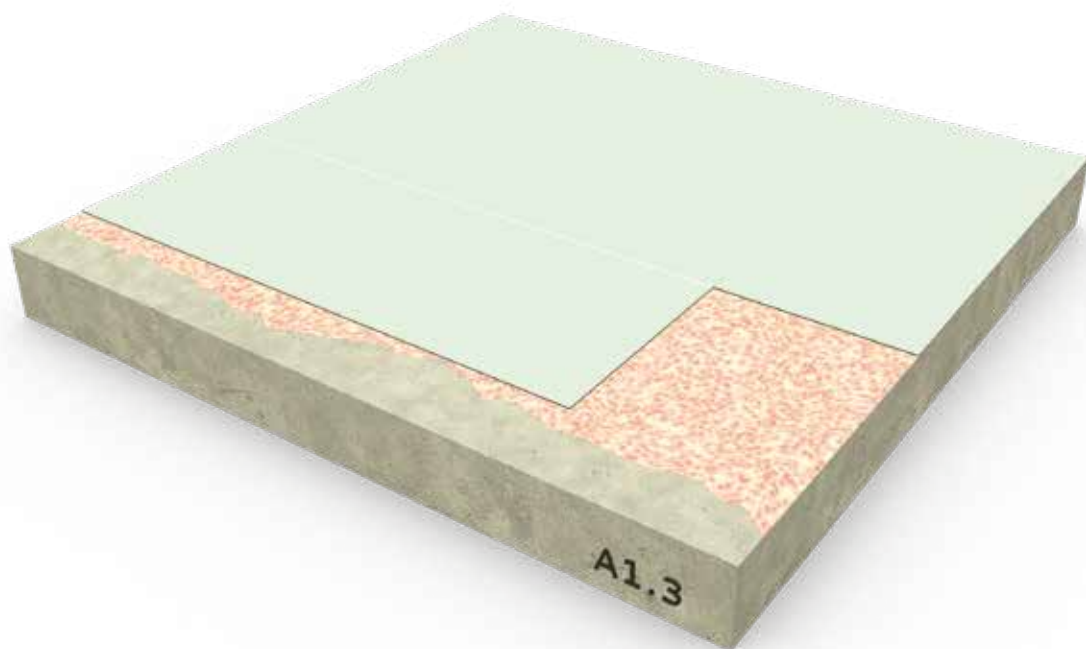
(Other thicknesses are available on request).

CHARACTERISTICS OF MAPEPLAN® B:

- Resistant to ageing processes
- Root resistant - FLL test
- Resistant to microbiological attacks
- Flexible at low temperatures
- Puncture resistant
- UV resistant
- High workability and weldability
- Vapour permeable
- Dimensionally stable
- Excellent fire behaviour

BUILD-UP A1.3

MAPEPLAN® B membrane - Non-insulated roof with adhered waterproofing membrane



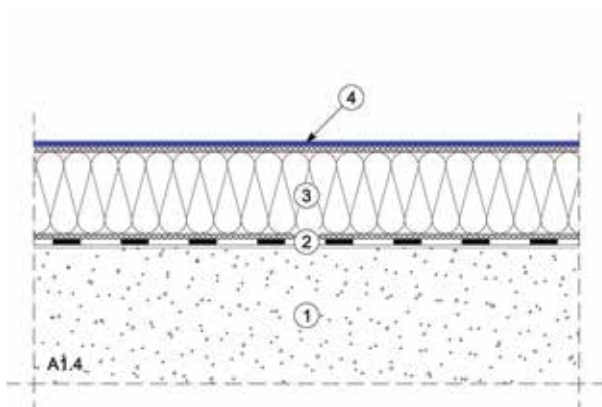
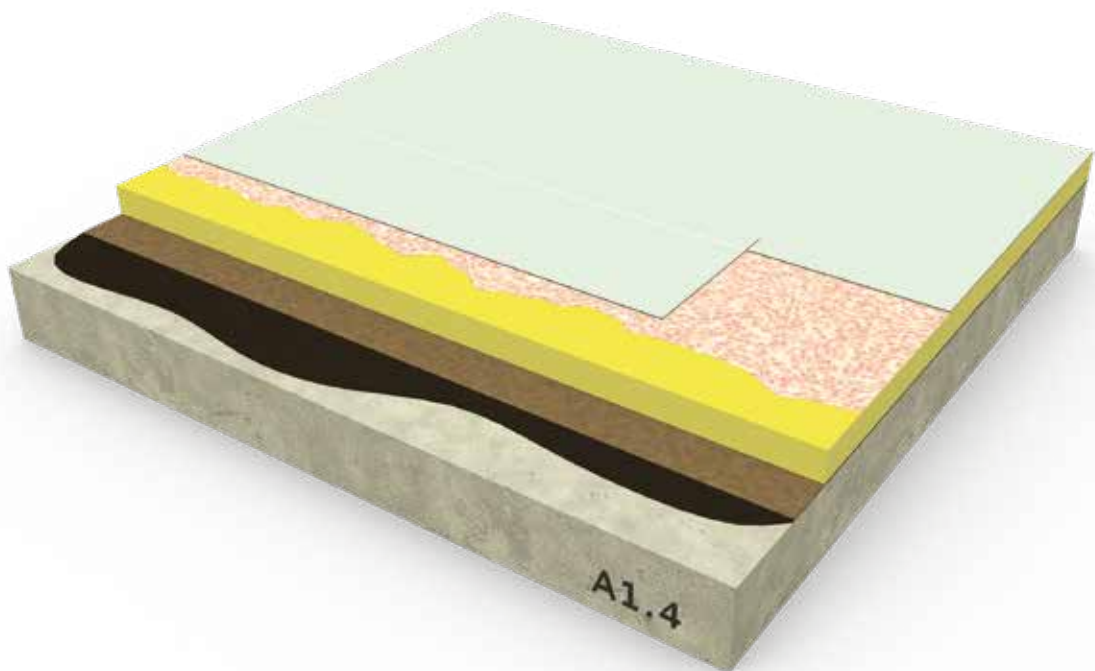
- ① Structure - Concrete/composite deck
- ② MAPEPLAN® B waterproofing membrane fully adhered with adhesive MAPEPLAN® ADS 200 *1 or MAPEPLAN® ADS 210 *1

NOTE *1:

Apply only on compatible structure.

BUILD-UP A1.4

MAPEPLAN® B membrane - Insulated roof with fully adhered thermal insulation layer and waterproofing membrane



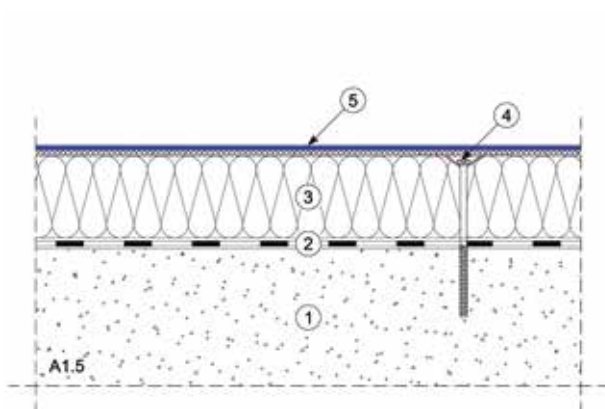
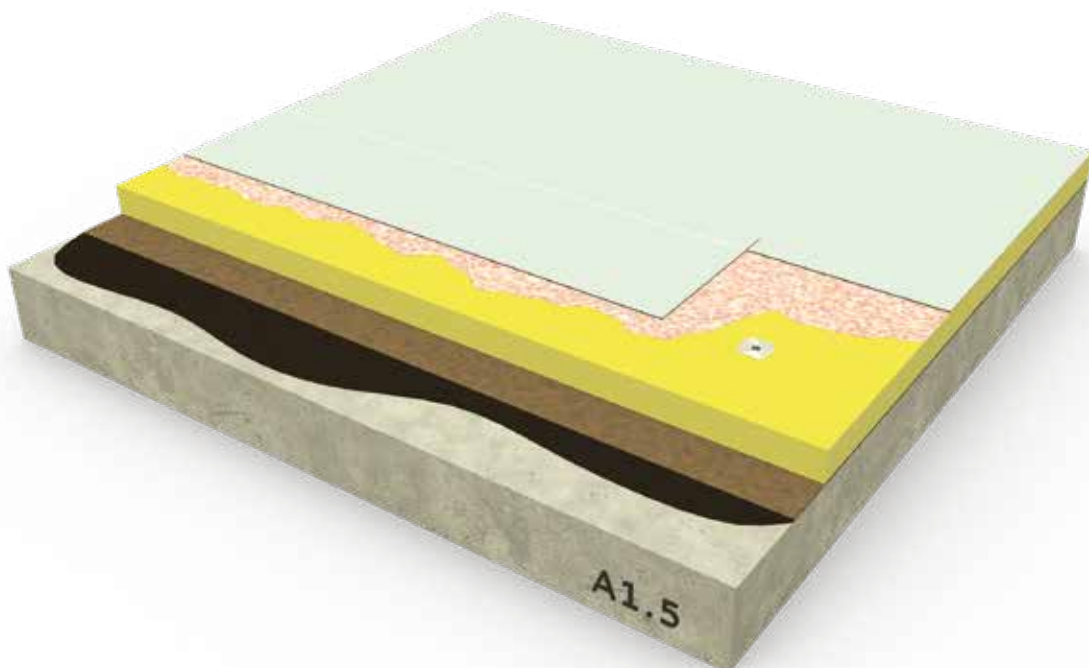
- ① Structure - Concrete/composite deck
- ② Vapour control layer (e.g. **IDROPRIMER + POLYVAP**)
- ③ Fully adhered thermal insulation layer
- ④ **MAPEPLAN® B** waterproofing membrane fully adhered with adhesive **MAPEPLAN® ADS 200 *1** or **MAPEPLAN® ADS 210 *1**

NOTE *1:

Apply only on compatible insulation.

BUILD-UP A1.5

MAPEPLAN® B membrane - Insulated roof with mechanical fastened thermal insulation layer and adhered waterproofing membrane



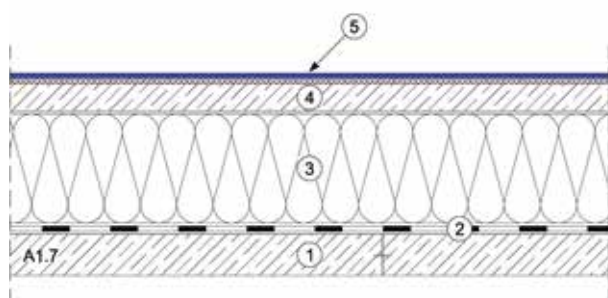
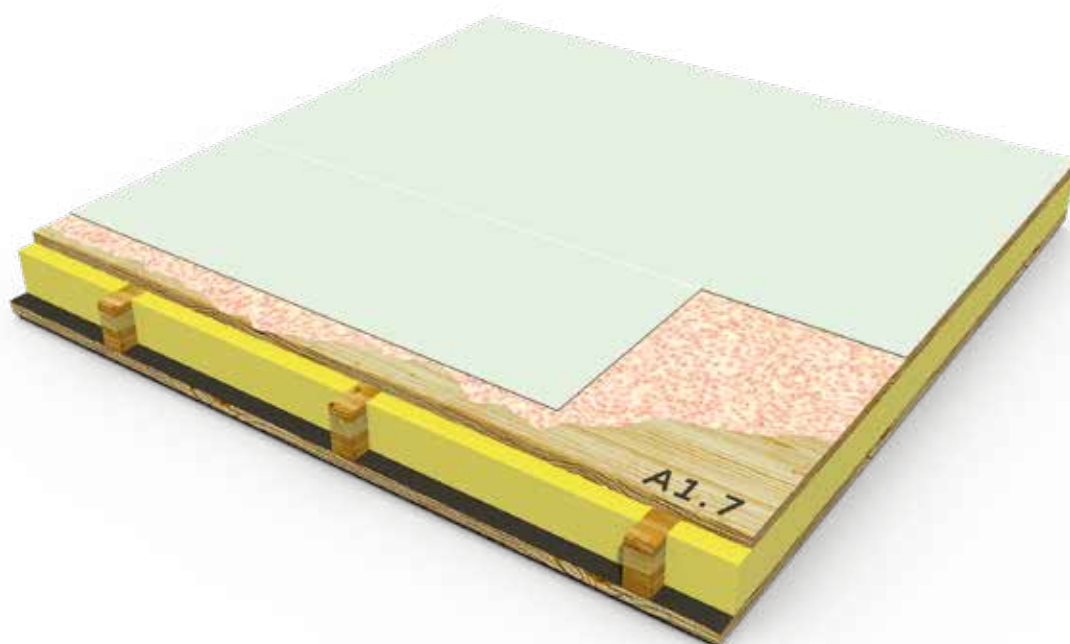
- ① Structure - Concrete/composite deck
- ② Vapour control layer (e.g. **MAPEPLAN® VB PE SD 220** or **IDROPRIMER + POLYVAP**)
- ③ Mechanical fastened thermal insulation layer
- ④ Mechanical fastening
- ⑤ **MAPEPLAN® B** waterproofing membrane fully adhered with adhesive **MAPEPLAN® ADS 200 *1** or **MAPEPLAN ADS 210 *1**

NOTE *1:

Apply only on compatible insulation.

BUILD-UP A1.7

MAPEPLAN® B membrane - Insulated roof with double-sheathed wooden deck and adhered waterproofing membrane



- ① Structure - 1st wooden board
- ② Vapour control layer (e.g. **MAPEPLAN® EVO SK** or **IDROPRIMER + POLYVAP SA**)
- ③ Thermal insulation layer
- ④ 2nd wooden board
- ⑤ **MAPEPLAN® B** waterproofing membrane fully adhered with adhesive **MAPEPLAN® ADS 200 *1** or **MAPEPLAN® ADS 210 *1**

NOTE *1:

Apply only on compatible structure.

4. Accessories



MAPEPLAN® WALKWAY

Protection synthetic membrane in PVC-P with non-slip textured surface.

MAPEPLAN® WALKWAY is UV-resistant and may be exposed to all weather conditions.

Standard thickness: 1,5 mm (embossing excluded).

Colour: grey.

MAPEPLAN® D

Unreinforced synthetic membrane in PVC-P, suitable for details and building particulars.

MAPEPLAN® D is UV-resistant and may be exposed to all weather conditions.

Standard thickness: 1,5 mm.

Colour: light grey.

MAPEPLAN® EVO SK

Vapour control layer made of aluminum foil.

Vapour diffusion resistance - Sd value: 5000 m.

Standard thickness: 0,20 mm.

Colour: blue.

MAPEPLAN® VB PE

Vapour control layer and for generic uses.

Vapour diffusion resistance - Sd value: 87 m.

Standard thickness: 0,30 mm.

Colour: transparent.

MAPEPLAN® VB PE SD 220

Vapour control layer and for generic uses in polyethylene.

Vapour diffusion resistance - Sd value: 220 m.

Standard thickness: 0,25 mm.

Colour: blue.

MAPEPLAN® PE micro-perforated

Anti-imbibition layer and for generic uses in polyethylene with micro-perforation.

Standard thickness: 0,10 mm.

Colour: transparent.

POLYDREN PP

Separation, protection, filter and levelling layers in woven-non-woven polypropylene 100%.

PREFABRICATED MAPEPLAN® ACCESSORIES

Inside and outside corners, outlets, connections and other special prefabricated parts.

MAPEPLAN® METAL SHEET

Zinc steel sheet having the surface laminated with MAPEPLAN® PVC-P waterproofing membrane.

It is resistant to weathering and UV rays.

Used as press-formed finishing profiles and flashings.

MAPEPLAN® METALBAR - MAPEPLAN® CORD

Metal fixing profile in galvanized carbon steel, prepunched, with oval perforations, to be used as anchoring element for MAPEPLAN® PVC-P waterproofing membranes and anti-tear cord close to the prepunched profiles.

MAPEPLAN® CLEANER

A solvent based thinner, specially formulated for the cleaning of the overlaps before welding of MAPEPLAN® PVC-P waterproofing membranes.

MAPEPLAN® ADS 200

Policloroprenic monocomponent solvent adhesive for double coating (contact adhesive), to bond PVC-P synthetic waterproofing membranes MAPEPLAN® on vertical, horizontal and sloping surfaces.

MAPEPLAN® ADS 210

One component adhesive for double coating (contact adhesive), to bond PVC-P synthetic waterproofing membranes MAPEPLAN®, supplied in pressurized canister for spray application.

The delivery program is complete with all accessories to perform the MAPEPLAN® roofing system.

RELATED TECHNICAL DOCUMENTS

The technical literature mentioned below can be accessed via the website www.polyglass.com



Use, inspection and maintenance SYNTHETIC WATERPROOFING MEMBRANES MAPEPLAN® PVC-P

This document contains more in-depth technical information on the use, inspection and maintenance of MAPEPLAN® waterproofing membranes.



MAPEPLAN® PVC-P installation manual

This document contains correct, detailed instructions on installing and laying MAPEPLAN® waterproofing membranes.



Standard roofing systems ROOFING AND WATERPROOFING SYNTHETIC MEMBRANES MAPEPLAN® PVC-P

This document contains the collection of some standard roofing systems that can be realized with MAPEPLAN® waterproofing membranes.



Standard roofing details ROOFING AND WATERPROOFING SYNTHETIC MEMBRANES MAPEPLAN® PVC-P

This document contains the collection of some standard roofing details that can be realized with MAPEPLAN® waterproofing membranes.



Technical Book

ROOFING SYSTEMS

MAPEPLAN® PVC-P

We reserve the right to change at any time, without prior notice, all items necessary to improve the products.

MKIPL2130030 - 09/21



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