Bridges and viaducts

Waterproofing solutions for large scale infrastructure

INDEX

Waterproofing solutions for large-scale infrastructure	4
Specific characteristics for a certified quality	8
Polyglass systems and materials	10
Standards and certifications	14
Polyglass solutions and build-ups	16
Parking decks	20
Installation instructions and directions	25
References	28

WE IMPROVE WATERPROOFING EFFICIENCY AND SERVICE LIFE

Waterproofing of bridges and viaducts, and large infrastructure elements in general, is crucial to their operational performance, safety and long service life.

All man-made structures, especially bridge and viaduct decks, are under constant physical and chemical attack from rainwater, freeze-thaw cycles and traffic, which results in wear induced by loads, vibrations and mechanical strain. These negative effects are further compounded by road salting during the winter months. Systems designed to protect structures of this kind are therefore, receiving more attention, particularly waterproofing membranes. Indeed, harmonised standards have even been issued at a European level specifically concerning bridge and viaduct waterproofing: notably, reference standard EN 14695, as described below.

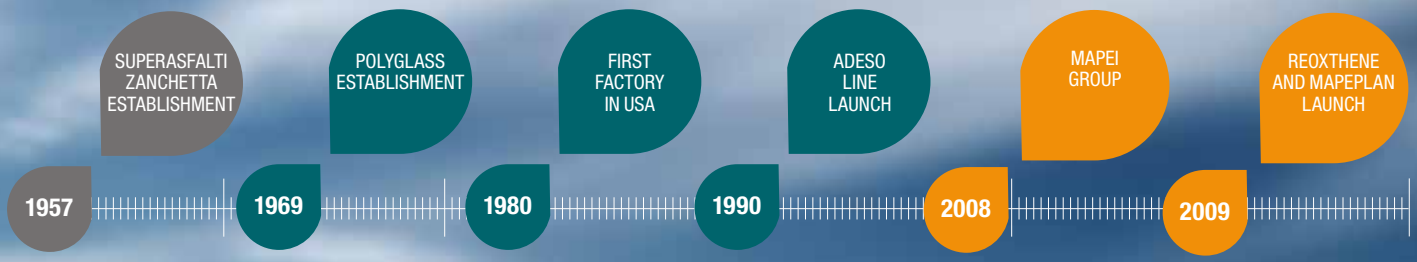
In detail, waterproofing is installed between the substrate and the road surfacing produced with a hot mix asphalt (binder course), which is applied at a high temperature directly on top of the actual waterproofing membrane.

Polyglass SpA has a series of systems and materials designed specifically for this particular field of application, meeting both regulatory requirements and the needs of our leading customers. Our solutions are suitable both for waterproofing new structures and for refurbishment and remedial work on existing ones.

The best defence against chemical and physical attacks

Polyglass officies and factories in the world

Since 2008 Polyglass becomes part of the Mapei Group



75 YEARS OF PRESENCE IN THE CONSTRUCTION WORLD

63 PRODUCTION FACILITIES

5 CONTINENTS IN WHICH THE GROUP IS PRESENT

MAPEI GROUP

2,1 BILLION EUROS TURNOVER 2012

55 THOUSAND CUSTOMERS IN THE WORLD

7500 GROUP EMPLOYEES

Polyglass products range

- WATERPROOFING SBS MEMBRANES
- WATERPROOFING APP MEMBRANES
- SELF-ADHESIVE WATERPROOFING MEMBRANES
- INSULATING SYSTEMS
- **A COMPLETE RANGE OF SOLUTIONS**
- ULTRALIGHT WATERPROOFING MEMBRANES
- LIQUID AND PASTE WATERPROOFING MATERIALS AND ACCESSORIES
- SYSTEMS FOR THERMAL-ACOUSTIC INSULATION
- WATERPROOFING SYNTHETICS MEMBRANES

SPECIFIC CHARACTERISTICS FOR A CERTIFIED QUALITY

The waterproofing of reinforced concrete slabs for road decks (bridges or viaducts) was already being done with bituminous products in the late 70s, building up the various layers directly on site. For over twenty years now, the waterproofing practice of installing modified bitumen and polyester nonwoven reinforcement on site has been replaced or supplemented with the installation of pre-fabricated polymer distilled bitumen membranes.
Standard EN 14695-2010 issued by the European Committee for Standardisation has been in force since January 2010, certifying membranes that can be applied as a waterproofing layer and overlaid directly with the binder course.
The standard specifies the characteristics and performance of reinforced bituminous membranes for waterproofing bridge and viaduct decks and all other concrete surfaces trafficked by vehicles where the waterproofing system is bonded to the concrete deck and overlaid with a binder course or asphalt.

In addition to the usual tests to determine thickness, cold flexibility, ultimate tensile strength, etc., the specific new EN 14695-2010 standard also entails testing specifically designed for this particular type of application.
Membranes are also tested following application to verify: adhesion to the concrete substrate and to the binder course (pull-off test); resistance to heat and dimensional stability of the carrier; and bond strength of the bituminous compound.

GOOD MECHANICAL STRENGTH PROPERTIES
to adapt and move with the decks as they move and flex.

EXCELLENT MECHANICAL STRENGTH
to withstand high mechanical stress without breaking or cracking, both during installation (laying of road surfacing) and when in service (vehicle traffic).

COMPLIANCE AND CERTIFICATION
to standard EN 14695-2010.

Given the critical nature and special requirements of the work, the membranes used on structures of this kind must have certain characteristics and higher performance than traditional products in terms of specific strength and resistance properties and, above all, must meet the following basic requirements:

BRIDGES WATERPROOFING MEMBRANES REQUIREMENTS

SUPERIOR ADHESION BOTH

to the substrate underneath (road deck) and to the road surfacing on top (binder course), to avoid the risk of the surfacing slipping/sliding once in service.

RESISTANCE TO HIGH THERMAL STRESS (HIGH TEMPERATURES)

so that the binder course can be applied at a high temperature directly on top of the membrane without the risk of it being damaged, shrinking or punctured (reference standards UNI EN 1107.1 and UNI EN 14695 Annex B).

HIGH MECHANICAL STRENGTH AND PUNCTURE RESISTANCE

to allow for paving equipment used in the laying and compacting of the road surfacing to be driven over and parked on the membranes.

RESISTANCE TO WATER

and percolating solutions (road salt), where applicable, and to freeze-thaw cycles.

POLYGLASS SYSTEMS AND MATERIALS

Drawing on forty years of experience gained in developing and manufacturing waterproofing products, we provide engineers in the industry with an extensive range of membranes, comprising both traditional products and membranes produced with the innovative REOXTHENE TECHNOLOGY, which is suitable for solving the issues associated with waterproofing the surfaces in question. All these types of membranes share a spunbond polyester nonwoven carrier featuring a high mass per unit area and superior technical performance.

Membranes traditional line

POLYBOND HP
Plastomeric Polymer Distilled Bitumen Membrane with cold flexibility down to -15 °C with surface finish (top side of membrane) in sand or polyester nonwoven film.

POLYFLEX HP
Plastomeric Polymer Distilled Bitumen Membrane with cold flexibility down to -20 °C with surface finish (top side of membrane) in sand or polyester nonwoven film.

ELASTOFLEX HP
Elastomeric Polymer Distilled Bitumen Membrane with cold flexibility down to -20 °C with surface finish (top side of membrane) in sand or polyester nonwoven film.

Membranes Reoxthene Technology line

EVOLIGHT HP
Ultra-light Plastomeric Polymer Distilled Bitumen Membrane with cold flexibility down to -10 °C with surface finish (top side of membrane) in sand or polyester nonwoven film. Product with no $CaCO_3$ calcium carbonate filler, with high-performance bituminous compound.

POLYFLEX HP LIGHT
Ultra-light Plastomeric Polymer Distilled Bitumen Membrane with cold flexibility down to -20 °C with surface finish (top side of membrane) in sand or polyester nonwoven film. Product with no $CaCO_3$ calcium carbonate filler, with high-performance bituminous compound.

For more information, refer to the product data sheets.

			MEMBRANES TRADITIONAL LINE			MEMBRANES REOXTHENE TECHNOLOGY LINE	
			POLYBOND HP	**POLYFLEX HP**	**ELASTOFLEX HP**	**EVOLIGHT HP**	**POLYFLEX HP LIGHT**
TEST METHOD	TECHNICAL CHARACTERISTICS	UNIT OF MEASURE	NOMINAL VALUES			NOMINAL VALUES	
EN 1848-1	LENGTH	m	≥10	≥10	≥10	≥10	≥10
EN 1848-1	WIDTH	m	≥1	≥1	≥1	≥1	≥1
EN 1848-1	STRAIGHTNESS	mm/10 m	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS
EN 1849-1	THICKNESS	mm	4-5 (±0,2)	4-5 (±0,2)	4-5 (±0,2)	4-5 (±0,2)	4-5 (±0,2)
EN 1849-1	MASS PER UNIT AREA	kg/m²	NPD	NPD	NPD	NPD	NPD
EN 12039	INITIAL AMOUNT OF MINERAL SURFACE PROTECTION	g/m²	-	-	-	-	-
EN 1928-B	WATERTIGHTNESS	kPa	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS
EN 1928-B EN 1296	WATERTIGHTNESS AGAINST ARTIFICIAL AGEING	kPa	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS
EN 1928-B EN 1847	WATERTIGHTNESS AGAINST CHEMICAL	kPa	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS
EN 13897	WATERTIGHTNESS AFTER STRETCHING AT LOW TEMPERATURE	%	NPD	NPD	NPD	NPD	NPD
EN 13501-5	EXTERNAL FIRE PERFORMANCE	–	FROOF	FROOF	FROOF	FROOF	FROOF
EN 13501-1	REACTION TO FIRE	EUROCLASS	F	F	F	F	F
EN 12316	PEEL RESISTANCE	N/50 mm	NPD	NPD	NPD	NPD	NPD
EN 12317	SHEAR RESISTANCE	N/50 mm	800 (-20%)	-	800 (-20%)	800 (-20%)	800 (-20%)
EN 12311-1	TENSILE PROPERTIES MAXIMUM LOAD AT BREAK - LONGITUDINAL - TRANSVERSAL ELONGATION AT BREAK - LONGITUDINAL - TRANSVERSAL	 N/50 mm N/50 mm % %	 1200 (±20%) 1000 (±20%) 50 (±15) 50 (±15)	 1200 (±20%) 1000 (±20%) 50 (±15) 50 (±15)	 1200 (±20%) 1000 (±20%) 50 (±15) 50 (±15)	 1200 (±20%) 1000 (±20%) 50 (±15) 50 (±15)	 1200 (±20%) 1000 (±20%) 50 (±15) 50 (±15)
EN 12310-1	RESISTANCE TO TEARING - LONGITUDINAL - TRANSVERSAL	 N N	 200 (-30%) 200 (-30%)	 200 (-30%) 200 (-30%)	 200 (-30%) 200 (-30%)	 200 (-30%) 200 (-30%)	 200 (-30%) 200 (-30%)
EN 14223	WATER ABSORPTION	%	≤0,5	≤0,5	≤0,5	≤0,5	≤0,5
EN 12691-A	RESISTANCE TO IMPACT	mm	≥1750	≥1750	≥1750	≥1750	≥1750
EN 12730-A	RESISTANCE TO STATIC LOADING	Kg	≥25	≥25	≥30	≥30	≥30
EN 1108	FORM STABILITY UNDER CYCLIC TEMPERATURE CHANGE	%	-	-	-	-	-
EN 1109	COLD FLEXIBILITY	°C	≤-15	≤-20	≤-20	≤-10	≤-20
EN 1110	FLOW RESISTANCE AT ELEVATED TEMPERATURE	°C	≥120	≥140	≥100	≥140	≥140
EN 1107-1	DIMENSIONAL STABILITY	%	≤0,5	≤0,5	≤0,5	≤0,5	≤0,5
EN 14695 Annex B	DIMENSIONAL STABILITY (160 °C)	%	≤1	≤1	≤1	≤1	≤1
EN 1109 EN 1296	ARTIFICIAL AGEING BEHAVIOUR (COLD FLEXIBILITY)	°C	≤0	≤-10	≤-10	≤0	≤-10
EN 1110 EN 1296	ARTIFICIAL AGEING BEHAVIOUR (FLOW RESISTANCE)	°C	120 (±10)	140 (±10)	100 (±10)	140 (±10)	140 (±10)
EN 13596	BOND STRENGTH	N/mm²	≥0,8	≥0,8	≥0,8	≥0,8	≥0,8
EN 13653	SHEAR STRENGTH	N/mm²	≥0,3	≥0,2	≥0,25	≥0,3	≥0,3
EN 14224	CRACK BRIDGING ABILITY	°C	NPD	≤-15	≤-15	NPD	≤-10
EN 14691	COMPATIBILITY BY HEAT CONDITIONING	%	≥0,4	≥0,4	≥0,5	≥0,4	≥0,4
EN 14692	RESISTANCE TO COMPACTION OF AN ASPHALT LAYER	-	WATERPROOF	WATERPROOF	WATERPROOF	WATERPROOF	WATERPROOF
EN 14693	BEHAVIOUR OF BITUMEN SHEETS DURING APPLICATION OF MASTIC ASPHALT S ΔT i	 % mm n°	 NPD NPD NPD	 ≤5 ≤1 ≤20	 NPD NPD NPD	 NPD NPD NPD	 ≤5 ≤1 ≤20
EN 14694	WATERTIGHTNESS (500 kPa - 1000 CYCLES)	-	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS	EXCEEDS
EN 1850-1	VISIBLE DEFECTS	-	-	ABSENT	ABSENT	ABSENT	ABSENT
EN 1297 EN 1850-1	ARTIFICIAL AGEING BEHAVIOUR (VISIBLE DEFECTS)	-	EXCEEDS	EXCEEDS	-	EXCEEDS	EXCEEDS
EN 12039	ADHESION OF GRANULES	%	-	-	-	-	-
EN 1931	WATER VAPOR PROPERTIES	μ	20000	20000	20000	20000	20000

REV. 05-14

POLYGLASS SYSTEMS AND MATERIALS

Integral and complementary components of waterproofing systems for bridges and viaducts are the adhesion promoters (primers), which have the function to block the dust and saturate the porosity of the concrete surfaces to increase the adhesive strength of bituminous membranes with the substrates.
Polyglass offers a full range of primers to meet the different technical needs.

Adhesion-promoting primers

BITUMINOUS PRIMER: POLYPRIMER HP 45 PROFESSIONAL

POLYPRIMER HP 45 Professional is a high-performance bituminous primer made with blown bitumen and selected fast-drying solvents. It is used as a primer to promote adhesion on concrete surfaces and stop dusting, allowing the quick application of the polymer bitumen membranes.

TECHNICAL CHARACTERISTICS	VALUES
DENSITY AT 20 °C	0,89-0,91 kg/l
SOLIDS CONTENT AT 130 °C	49-51%
DRYING TIME 20 °C	1-2 HOURS
SPREADING RATE	200-350 g/m^2

VERSION: 02/11

BITUMINOUS PRIMER: IDROPRIMER

IDROPRIMER is a water-based bituminous primer made with selected bitumen, with the added advantage of being inflammable and inodorous; for this reason it can be applied in residential areas. It is used as a primer to promote adhesion and block dust before applying the polymer bitumen membranes.

TECHNICAL CHARACTERISTICS	VALUES
DENSITY AT 20 °C	0,95-1,05 kg/l
SOLIDS CONTENT AT 130 °C	32-37%
DRYING TIME 20 °C	4-6 HOURS
SPREADING RATE	200-300 g/m^2

VERSION: 02/11

PRIMER: EPOXY PRIMER

EPOXY PRIMER is a two-component epoxy primer (A+B) for priming substrates and levelling compounds before applying bridge waterproofing systems using polymer bitumen membranes. It has low viscosity even at low temperatures and exhibits excellent penetration into the substrate. The material, once suitably prepared, shall be applied to the substrate by roller, brush or rubber trowel. A light sprinkling of quartz sand (such as Quarzo 1,2 from Mapei S.p.A.) is required over the primer while still wet.

TECHNICAL CHARACTERISTICS	VALUES COMPONENT A	VALUES COMPONENT B
APPEARANCE	FLUID	FLUID
COLOUR	TRANSPARENT YELLOW	TRANSPARENT YELLOW
DENSITY (g/cm^3)	1,1	0,95
VISCOSITY BROOKFIELD (mPas)	1350	50
SHELF LIFE IN A COOL, DRY AREA ITS ORIGINAL, UNOPENED PACKAGING	24 MONTHS	24 MONTHS
HAZARD CLASSIFICATION ACCORDING TO EC 1999/45	IRRITANT, DANGEROUS TO THE ENVIRONMENT	CORROSIVE

For more information, refer to the product data sheets.

STANDARDS AND CERTIFICATIONS

Standard EN 14695:2010 entitled “Flexible sheets for waterproofing - Reinforced bitumen sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete - Definitions and characteristics” specifies the characteristics and performance of reinforced bitumen membranes for waterproofing of bridge decks and other trafficked areas of concrete where the waterproofing system is bonded to the concrete deck and overlaid by asphalt. The standard also specifies the test methods used for verifying the characteristics and performance.

Only membranes intended for use in waterproofing bridges, viaducts and other trafficked areas, overlaid with hot mix asphalt, fall within the scope of the above-mentioned standard.

By way of explanation, a by no means exhaustive list is given below of specific tests for membranes designed for this purpose

Dimensional stability at 160 °C simulates the carrier's behaviour during the laying of the asphalt.

Shear strength measures the ability to withstand shear stress that occurs between the concrete substrate, the membrane and the asphalt as a result of traffic-induced stress.

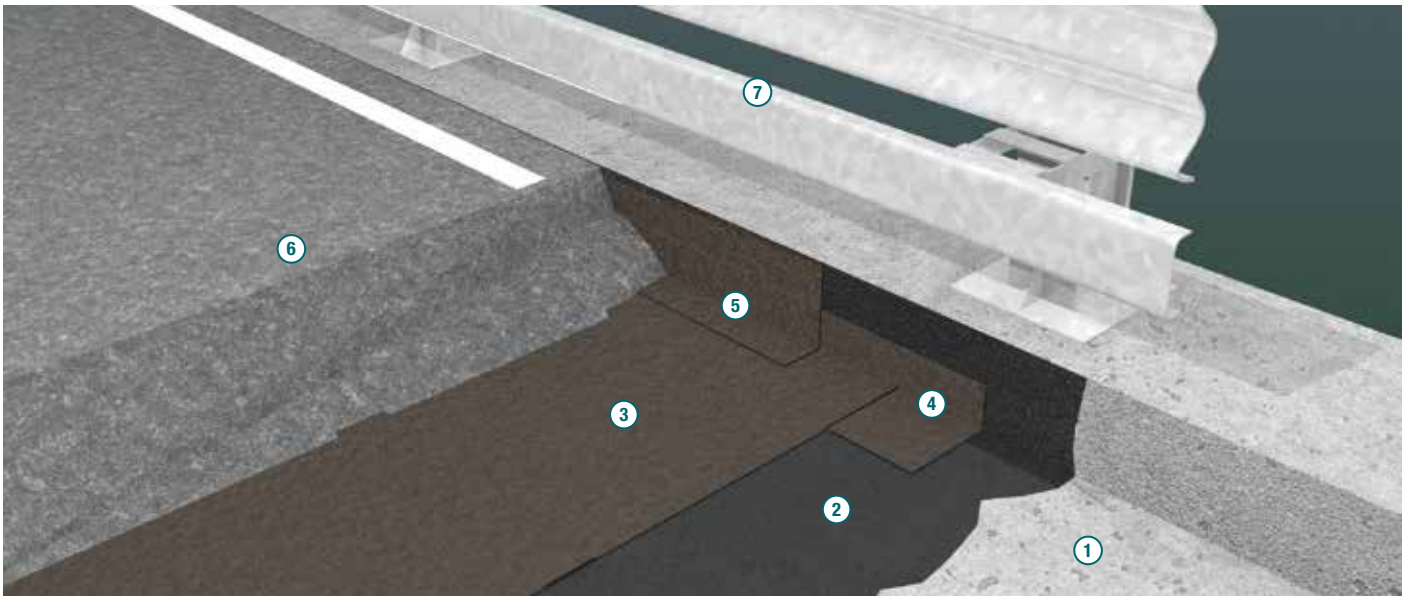
Resistance to compaction of a layer of asphalt simulates the possible damage a waterproofing membrane could incur while the hot mix is being laid.

The membrane's watertightness is instead determined with a pressure (500 kPa) delivered in pulses for 1000 cycles; this test is much tougher than the usual tests for membranes intended for other purposes.

Bond strength measures the strength of the membrane's adhesion to the concrete substrate.

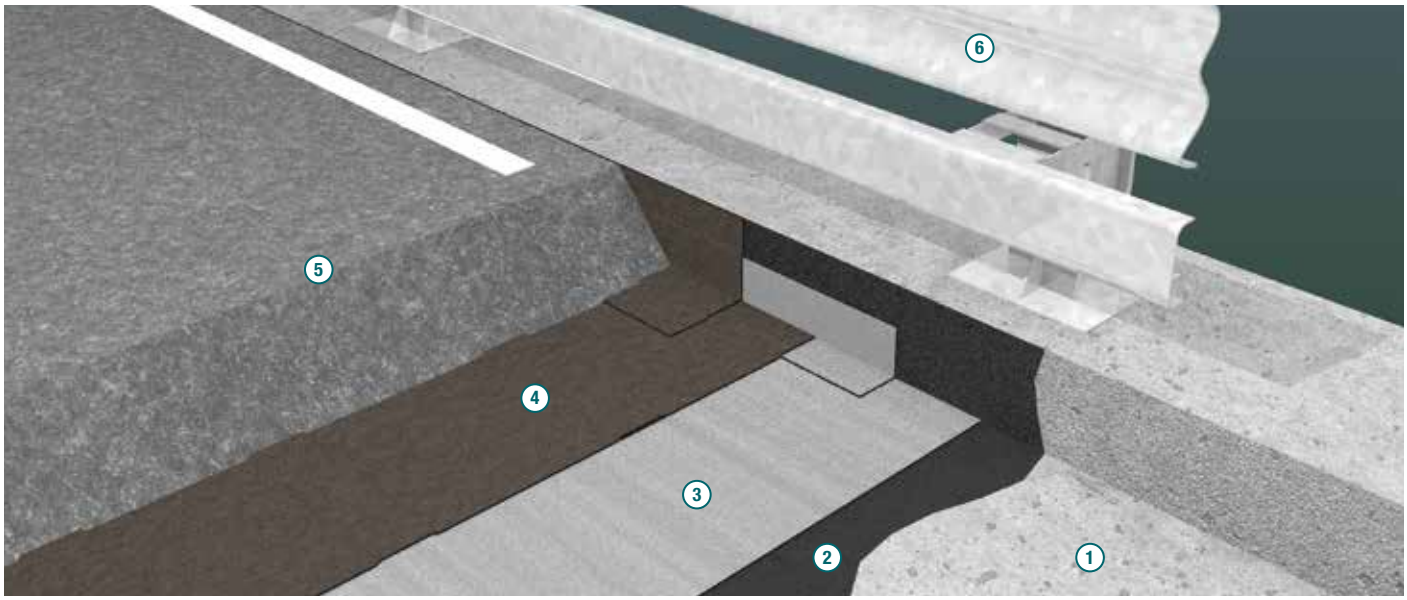
POLYGLASS SOLUTIONS AND BUILD-UPS

SINGLE-LAYER BUILD-UP



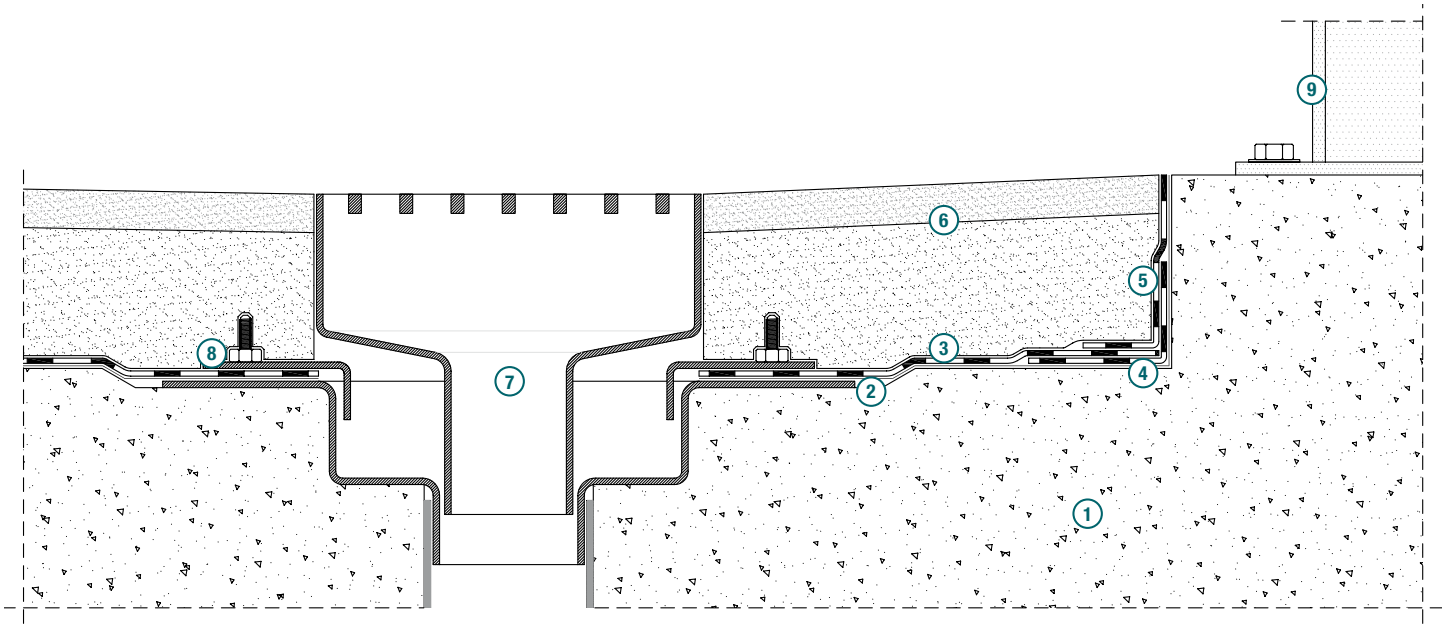
1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers or EPOXY PRIMER - **3.** POLYGLASS bridge waterproofing membrane (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX HP LIGHT -recommended thickness: 5 mm) - **4.** Reinforced strip with POLYGLASS waterproofing membrane - **5.** Vertical turn-up with POLYGLASS bridge waterproofing membrane **6.** Road surfacing - Binder course and wearing course per design - **7.** Guardrail

DUAL-LAYER BUILD-UP

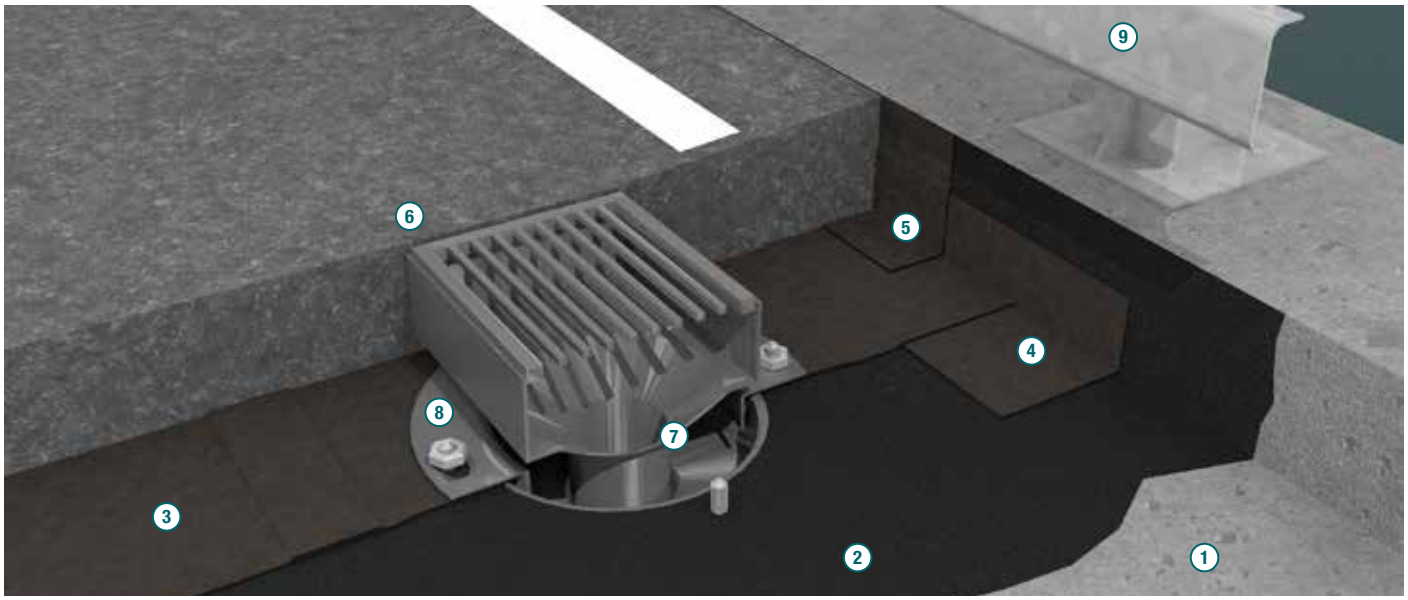


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers or EPOXY PRIMER - **3.** POLYGLASS bridge waterproofing membrane, first layer (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX HP LIGHT - recommended thickness: 4 mm) - **4.** POLYGLASS bridge waterproofing membrane , second layer (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX HP LIGHT - recommended thickness: 4 mm) - **5.** Road surfacing - Binder course and wearing course per design - **6.** Guardrail.

GULLY DETAIL

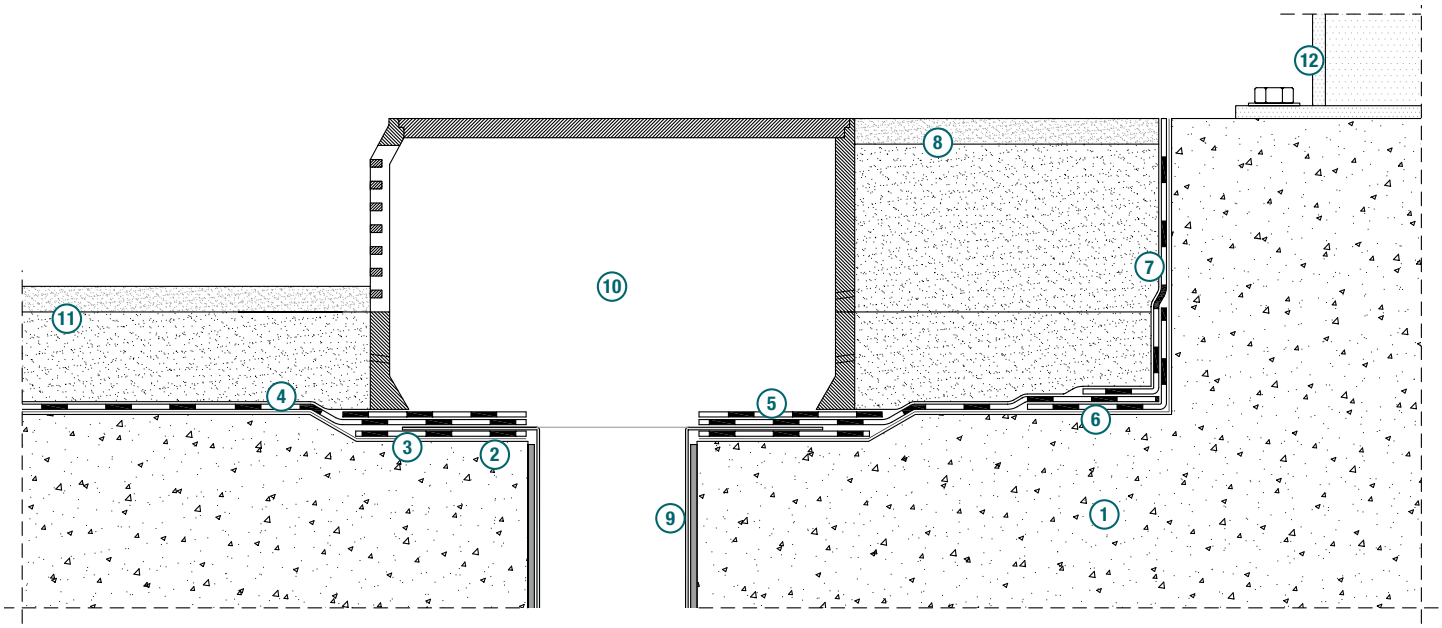


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers or EPOXY PRIMER - **3.** POLYGLASS bridge waterproofing membrane (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX LIGHT HP) - **4.** POLYGLASS reinforcing waterproofing membrane - **5.** Vertical turn-up with POLYGLASS bridge waterproofing membrane - **6.** Road surfacing - Binder course and wearing course per design - **7.** Gully for bridges to meet UNI EN 124 - **8.** Gully top flange - **9.** Guardrail.

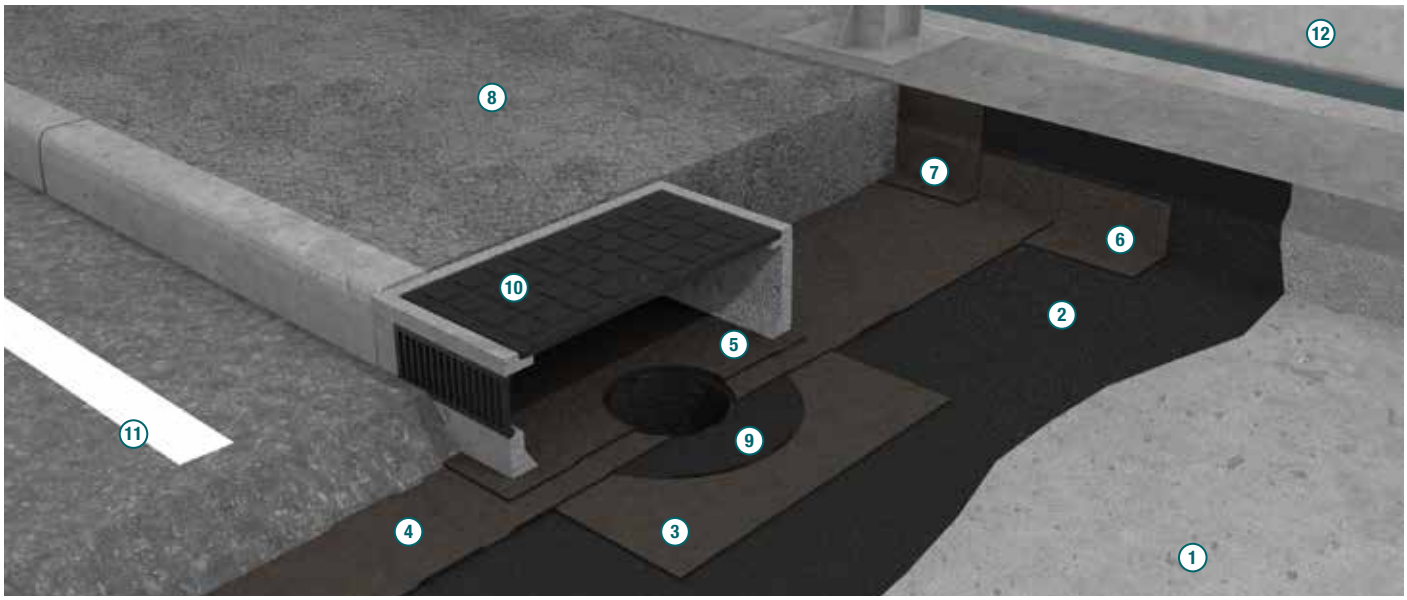


POLYGLASS SOLUTIONS AND BUILD-UPS

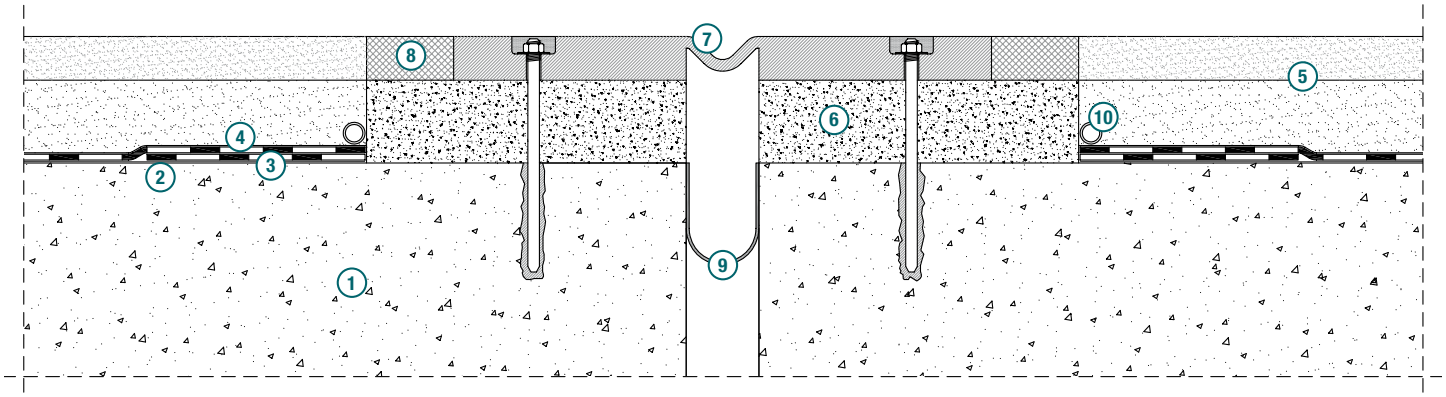
KERB DRAIN DETAIL



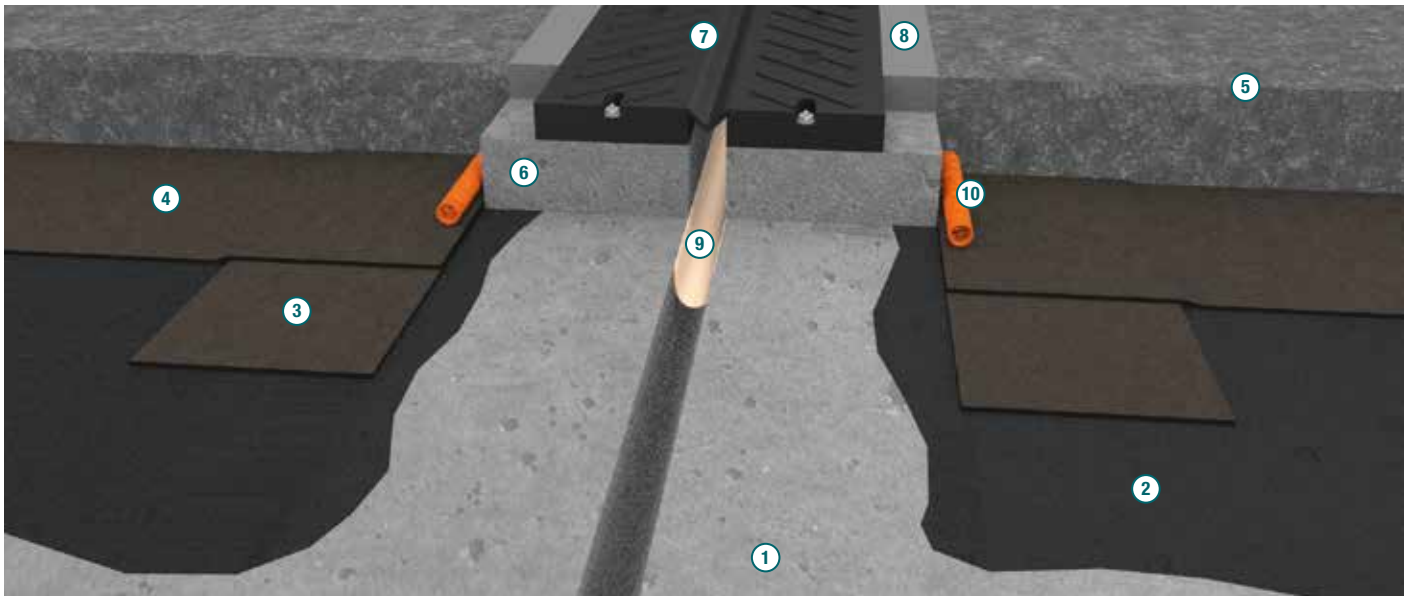
1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers or EPOXY PRIMER - **3.** POLYGLASS waterproofing membrane under drain inlet (dimension 50x50 cm) - **4.** POLYGLASS bridge waterproofing membrane (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX LIGHT HP) **5.** POLYGLASS protective waterproofing membrane - **6.** POLYGLASS reinforcing waterproofing membrane - **7.** Vertical turn-up with POLYGLASS bridge waterproofing membrane **8.** Pavement - **9.** Outlet - **10.** Kerb drain detail - **11.** Road surfacing - Binder course and wearing course per design - **12.** Guardrail.



EXPANSION JOINT DETAIL



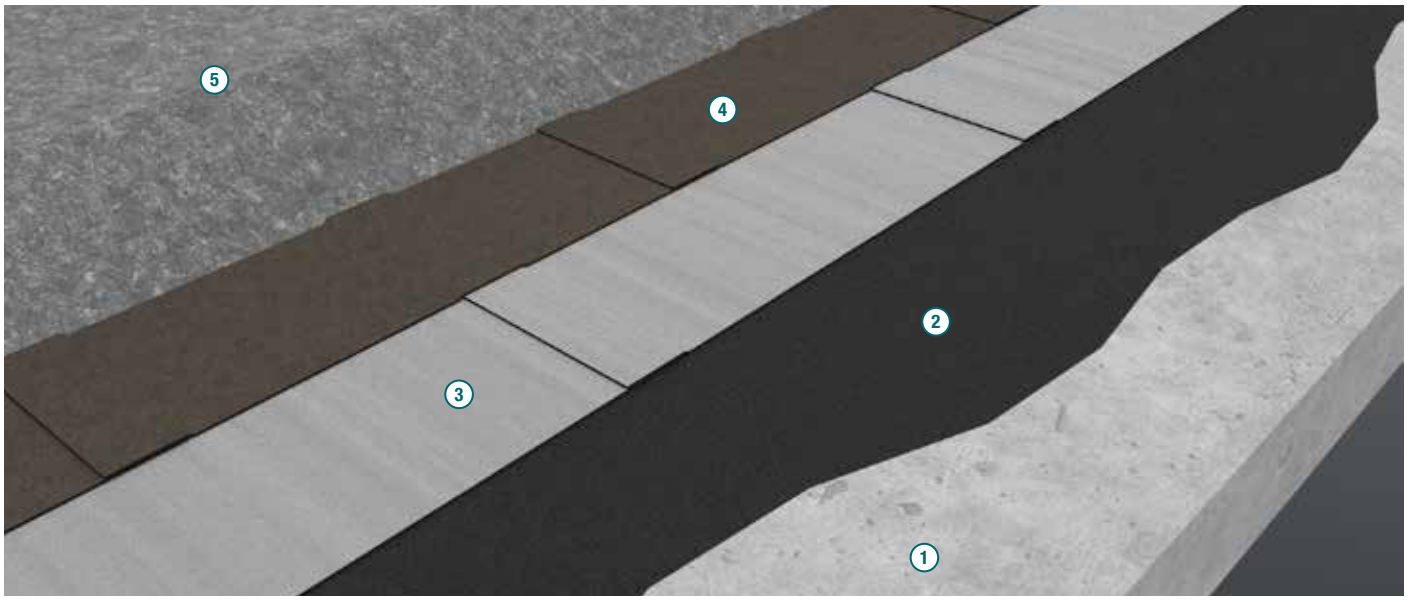
1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers or EPOXY PRIMER - **3.** POLYGLASS SBS reinforcing membrane - **4.** POLYGLASS bridge waterproofing membrane (type: POLYBOND HP, POLYFLEX HP, ELASTOFLEX HP, EVOLIGHT HP or POLYFLEX LIGHT HP) - **5.** Road surfacing - Binder course and wearing course per design - **6.** Mortar bedding - **7.** Expansion joint - **8.** Infill mortar acting as a buffer - **9.** Flashing - **10.** Drainage pipe.



PARKING DECKS

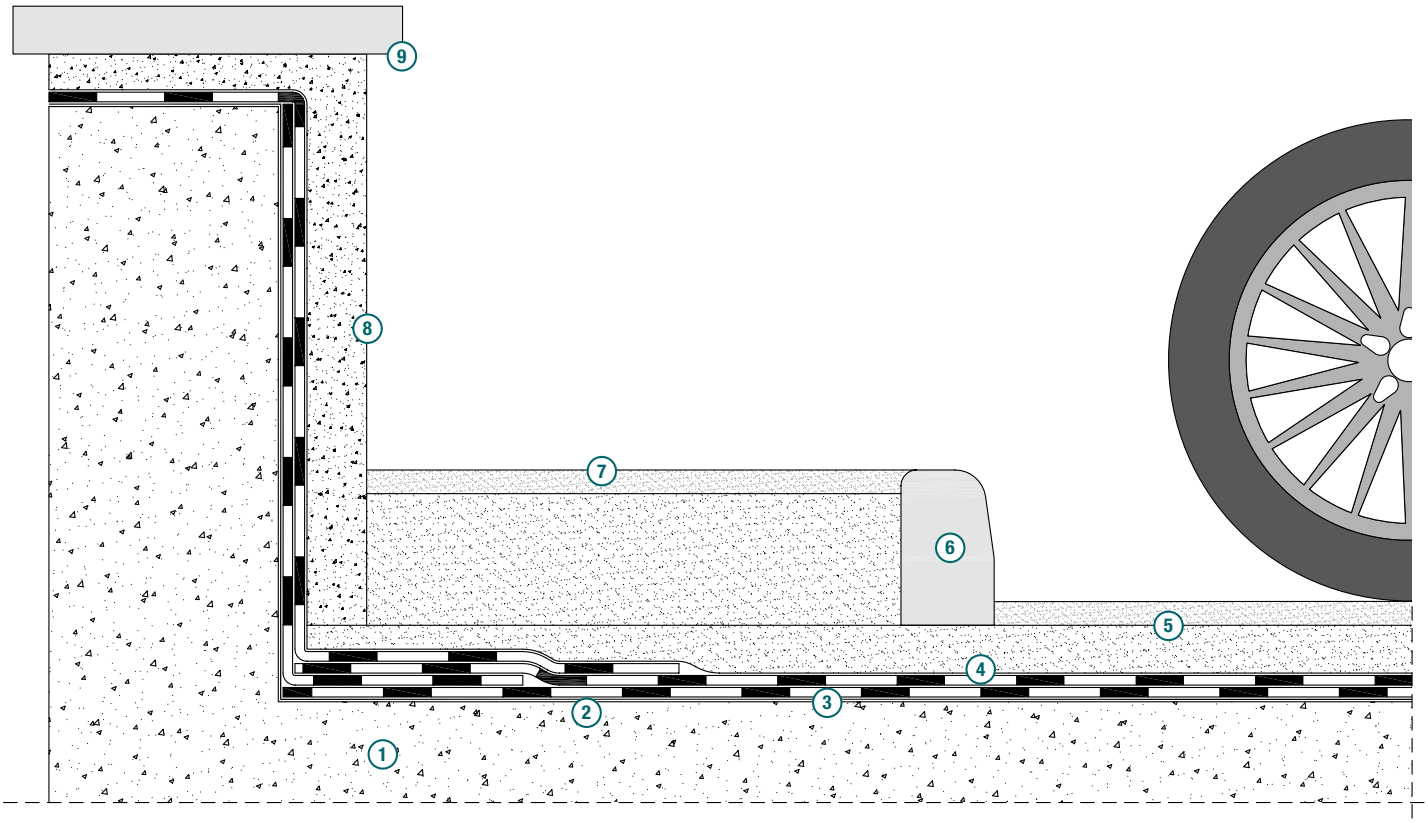
One particular field of application of the Polyglass waterproofing membranes covered herein is the waterproofing of parking decks, on which the bituminous surfacing (binder course) is laid directly on top of the waterproofing membranes.
In this specific case, we need to bear in mind that the build-ups may be more complicated. Indeed, parking decks can be complex in geometry and can include insulation and accommodate services of various kinds on their surface.
Whatever the case, the build-up must comprise a dual layer of polymer distilled bitumen membranes. Consequently, it is advisable to employ the services of a Polyglass engineer to determine what type of waterproofing system will best serve your individual needs, with an in-depth look at any and all details that the deck might feature.
A number of build-ups without insulation are given below by way of example, including details likely to be encountered as standard.

BUILD-UP

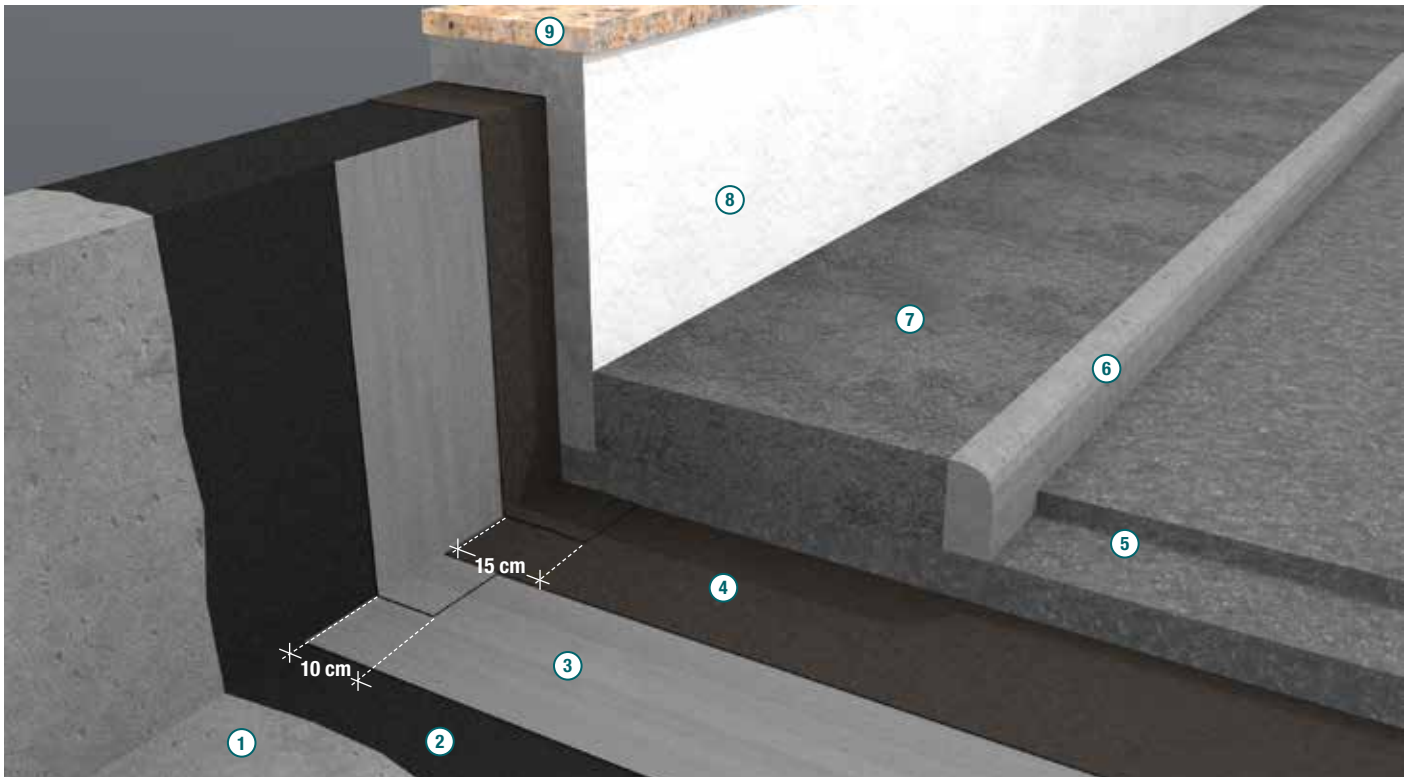


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers - **3.** POLYGLASS deck waterproofing membrane (first layer) - recommended thickness: 5 mm - **4.** POLYGLASS deck waterproofing membrane (second layer) - recommended thickness: 4 mm - **5.** Road surfacing - Binder course and wearing course per design.

DECK EDGE DETAIL - VERTICAL TURN-UP

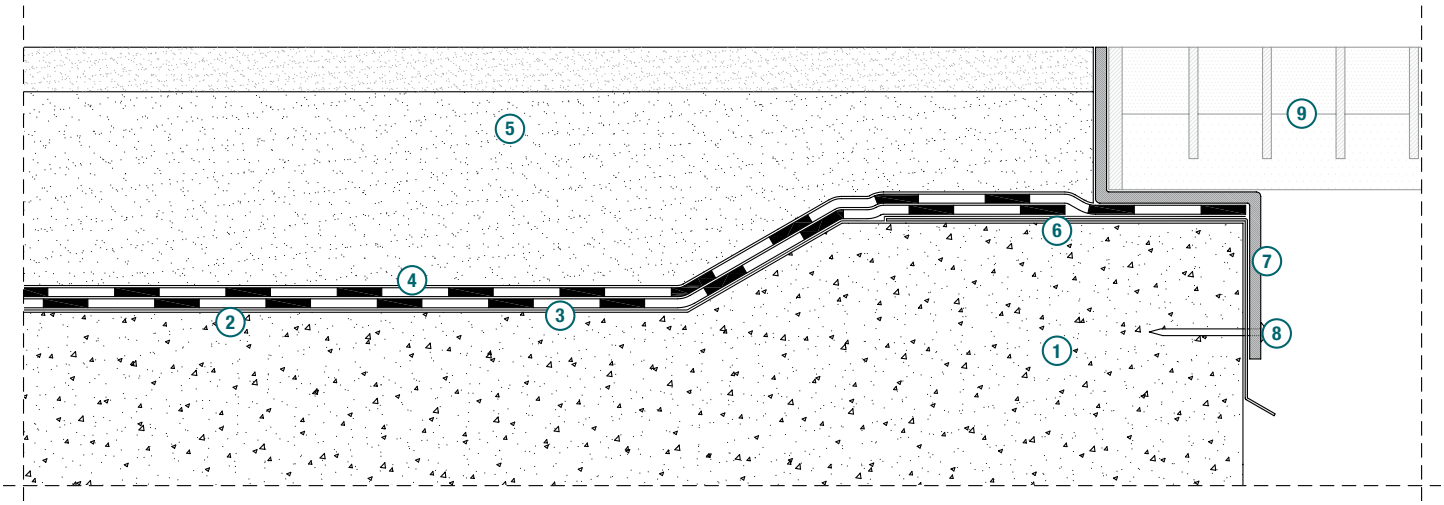


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers - **3.** POLYGLASS deck waterproofing membrane (first layer) - **4.** POLYGLASS deck waterproofing membrane (second layer) - **5.** Road surfacing - Binder course and wearing course per design - **6.** Protective kerb - **7.** Pavement - **8.** Turn-up protected with mesh and plaster - **9.** Finishing detail.



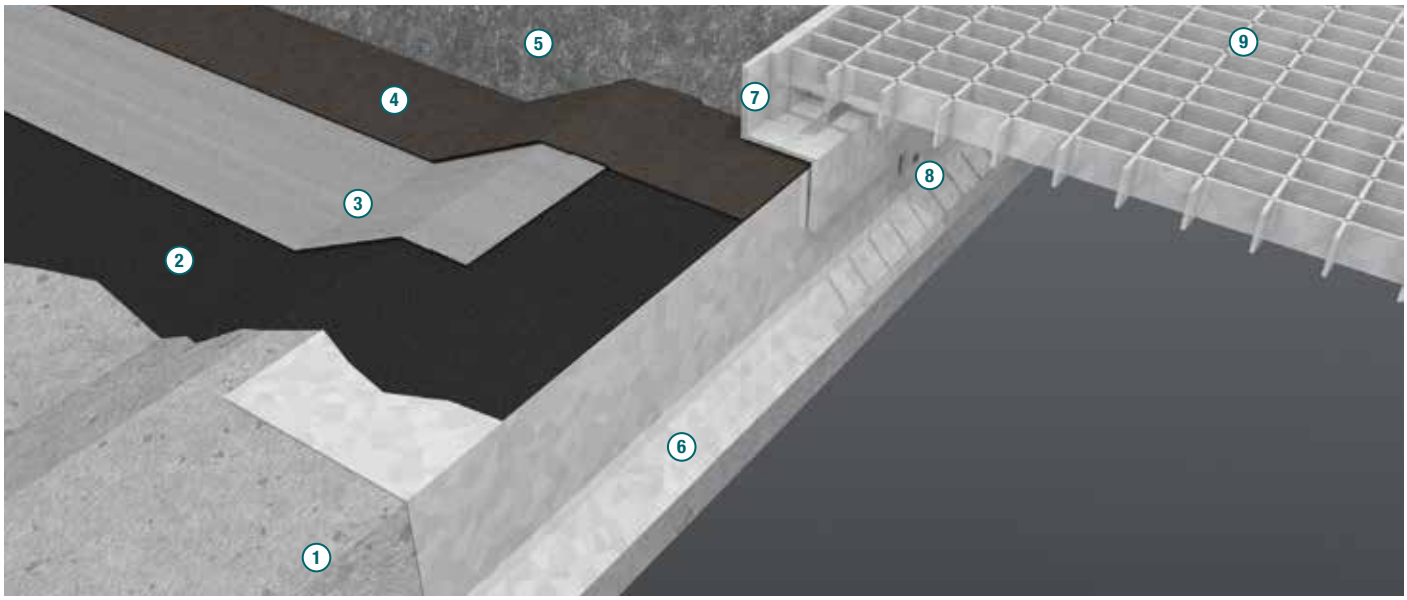
PARKING DECKS

DECK GRATE DETAIL

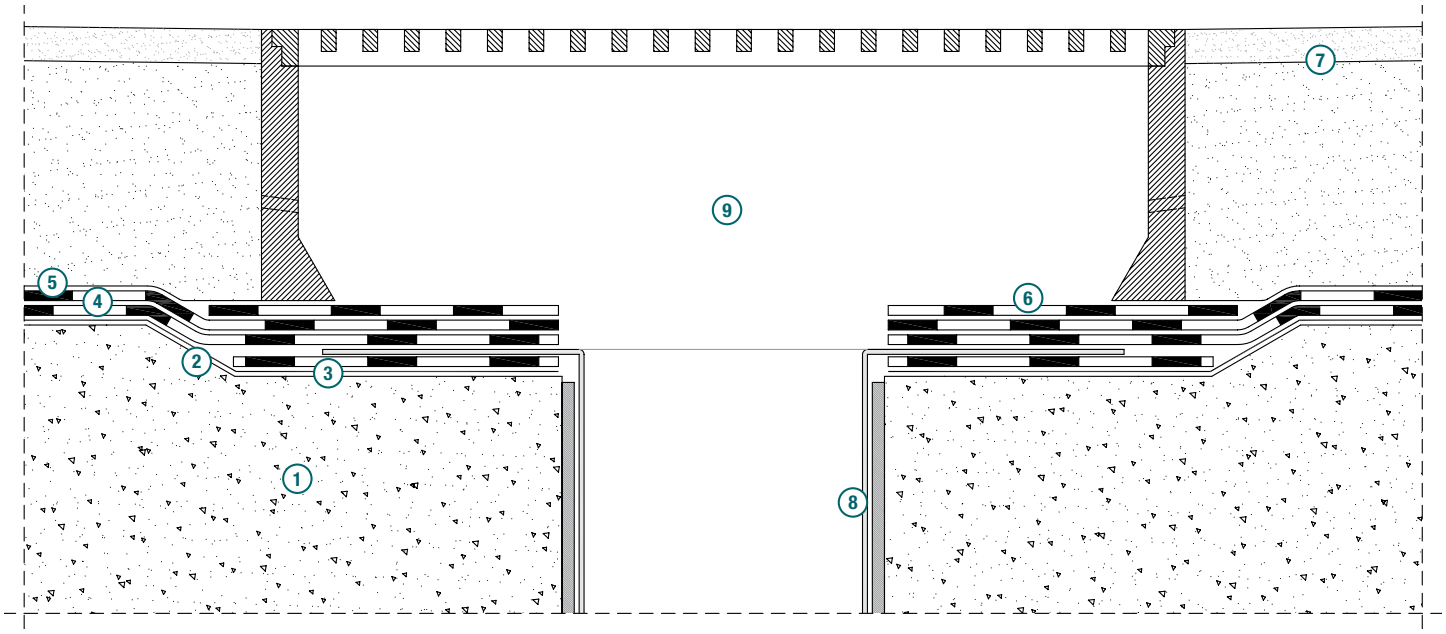


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers - **3.** POLYGLASS deck waterproofing membrane (first layer) - **4.** POLYGLASS deck waterproofing membrane (second layer) - **5.** Road surfacing - Binder course and wearing course per design - **6.** Lower flashing - **7.** Upper flashing in stainless steel or galvanized steel **8.** Mechanical fixing - **9.** Metal grate suitable for vehicle/pedestrian traffic.

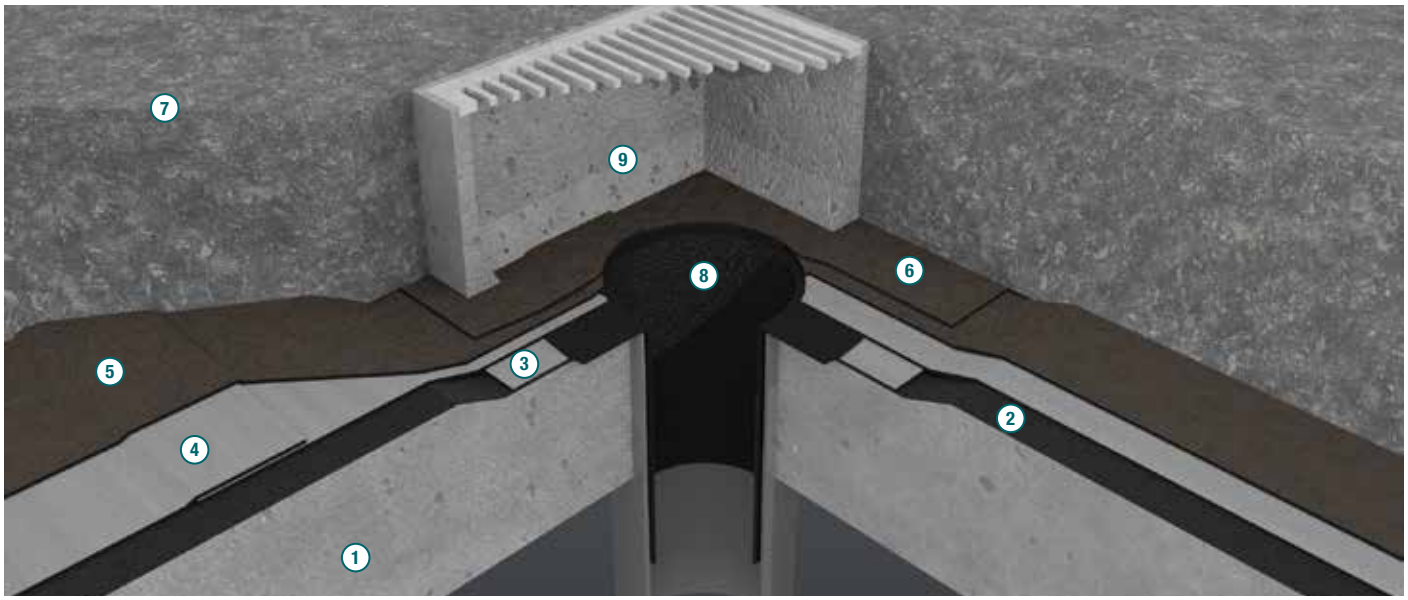
* It is the job of the Designer to determine the correct size for the metal grate based on the intended use of the deck.



DECK DRAIN DETAIL

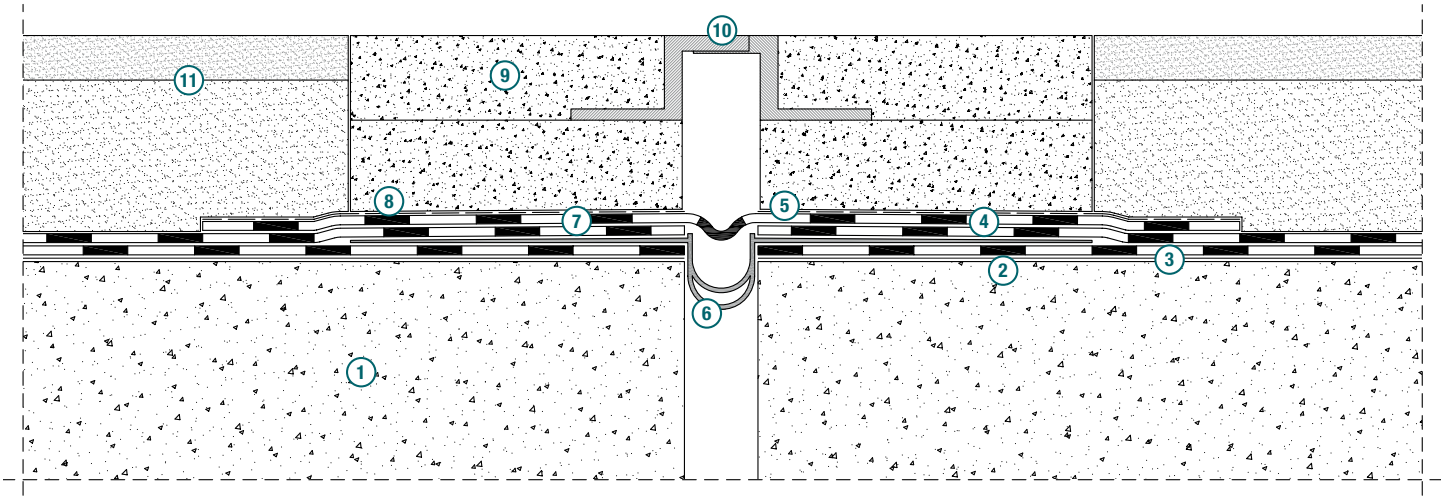


1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers - **3.** POLYGLASS reinforcing waterproofing membrane - **4.** POLYGLASS deck waterproofing membrane (first layer) - **5.** POLYGLASS deck waterproofing membrane (second layer) - **6.** POLYGLASS protective waterproofing membrane - **7.** Road surfacing - Binder course and wearing course per design - **8.** Outlet - **9.** Frame and grate suitable for vehicle traffic.

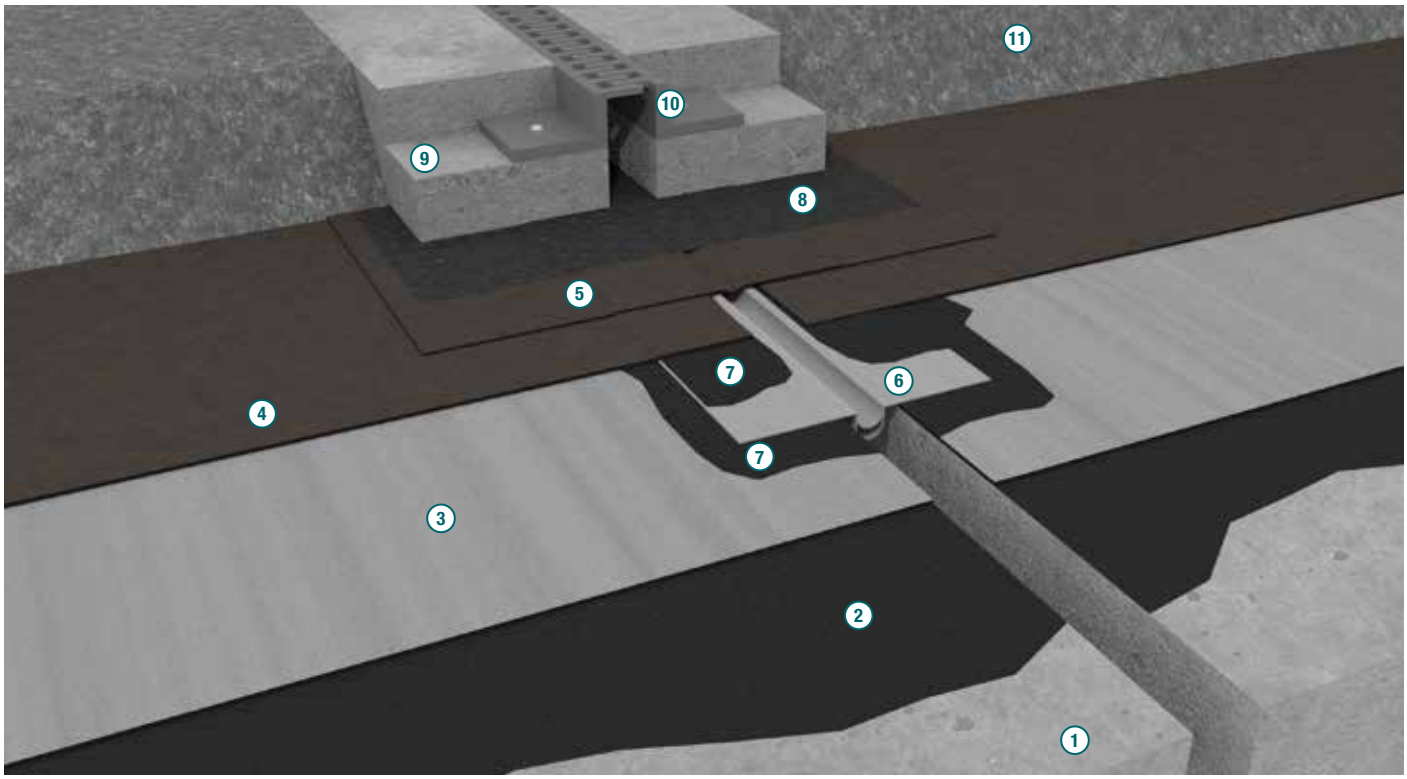


PARKING DECKS

DECK EXPANSION JOINT DETAIL



1. Substrate - Reinforced concrete slab - **2.** POLYPRIMER HP 45 Professional or IDROPRIMER bituminous primers - **3.** POLYGLASS deck waterproofing membrane (first layer) - **4.** POLYGLASS deck waterproofing membrane (second layer) - **5.** POLYGLASS elastomeric waterproofing membrane to cover joint - **6.** OMEGA expansion joint (the joint's flanges are bonded to the membrane underneath with hot bitumen) - **7.** Hot bitumen for bonding the joint's flanges - **8.** Dual separating layers with POLYCART C 500 feltpaper - **9.** Concrete nosing for anchoring expansion joint **10.** Expansion joint - **11.** Road surfacing - Binder course and wearing course per design.



INSTALLATION INSTRUCTIONS

SUBSTRATE PREPARATION

Concrete substrates must be even, smooth, sound, clean and dry in order for the waterproofing system to be applied correctly. The deck must be given a suitable gradient to encourage rainwater to run off correctly, as specified by the designer. In some cases, specific preparation work may be required to bring substrates up to scratch.

Deck cleaning with compressed air.

Site organisation.

APPLICATION OF ADHESION-PROMOTING PRIMERS

To stop dusting and boost the bitumen membranes' bond strength, once substrates have been suitably prepared, they must be coated by roller, block brush or airless spray equipment with a bituminous or epoxy primer to promote adhesion. All surfaces to be treated must be clean, perfectly dry, free of loose parts and oily or greasy residues. The waterproofing membranes can only be laid once the primer has dried completely and, in any case, no earlier than 24 hours after priming.

Bituminous primer.

Epoxy primer

INSTALLATION INSTRUCTIONS

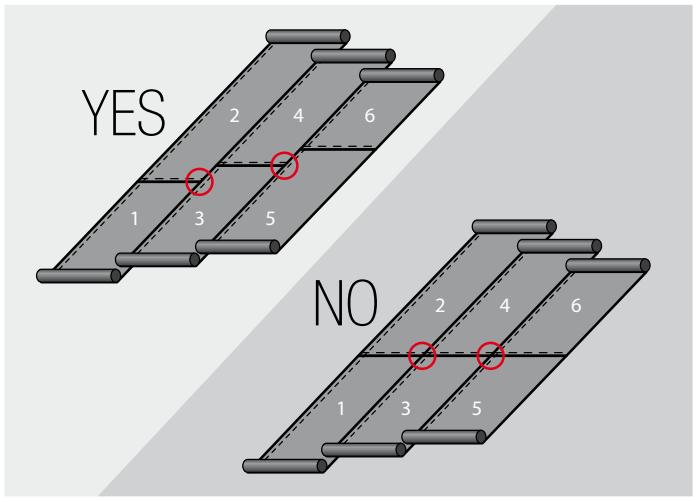
INSTALLING WATERPROOFING MEMBRANES

Polymer bitumen membranes are applied using a heat-welding process whereby they are torched onto the substrate by heating the underside correctly with a specific propane torch. The membranes must be laid with a suitable overlap. Side laps must be at least 100 mm, while end laps must be at least 150 mm. The rolls must be laid in a staggered pattern so as to avoid four sheets overlapping at any one point (end laps).

Membrane from Reoxthene line being torched on.

Membrane from professional line being torched on.

Correct staggered application of membranes.



Incorrect laying.

STORAGE PROCEDURES

Keep the product in a dry place out of sunlight. Do not stack pallets on top of each other and, in any case, store the rolls upright. Contact with solvents or organic liquids can damage the product. Do not install with excessively high or low temperatures and, whatever the case, be careful not to puncture the product in any way (footwear with spikes or studs, leaving anything with a small surface area sitting on top, sharp objects).

PULL-OUT TESTS

To check the level of adhesion of the waterproof layer, pull-out tests can be performed directly on site using a suitable portable tensile tester.

Pull-out test being performed.

Pull-out test completed.

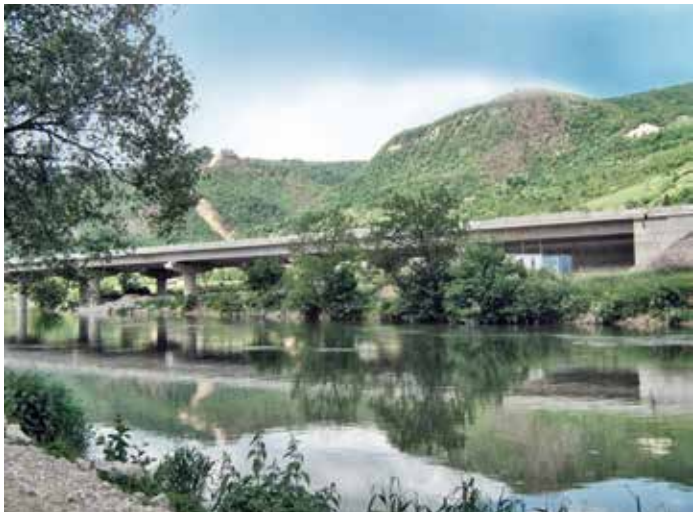
LAYING THE BITUMINOUS BINDER

Once the waterproofing system has been installed, the binder course is hot applied, to the thickness specified by the designer, directly on top of the membrane. This course must be applied taking extra care not to damage the waterproofing system. Installation is completed with any detail work (vertical turn-ups; connection of membranes to drains and structural joints, if any), ensuring that the structure is fully waterproofed.

Laying of the binder course.

Compacting and finishing of the bituminous binder course.

REFERENCES



NOTES

ENG - 09/22

POLYGLASS SPA
Registered Office - Viale Jenner, 4 - 20159 Milano
Head Office - Via Giorgio Squinzi, 2 - 31047 Ponte di Piave (TV)
Tel. +39 04227547 - Fax +39 0422854118
www.polyglass.com - info@polyglass.it