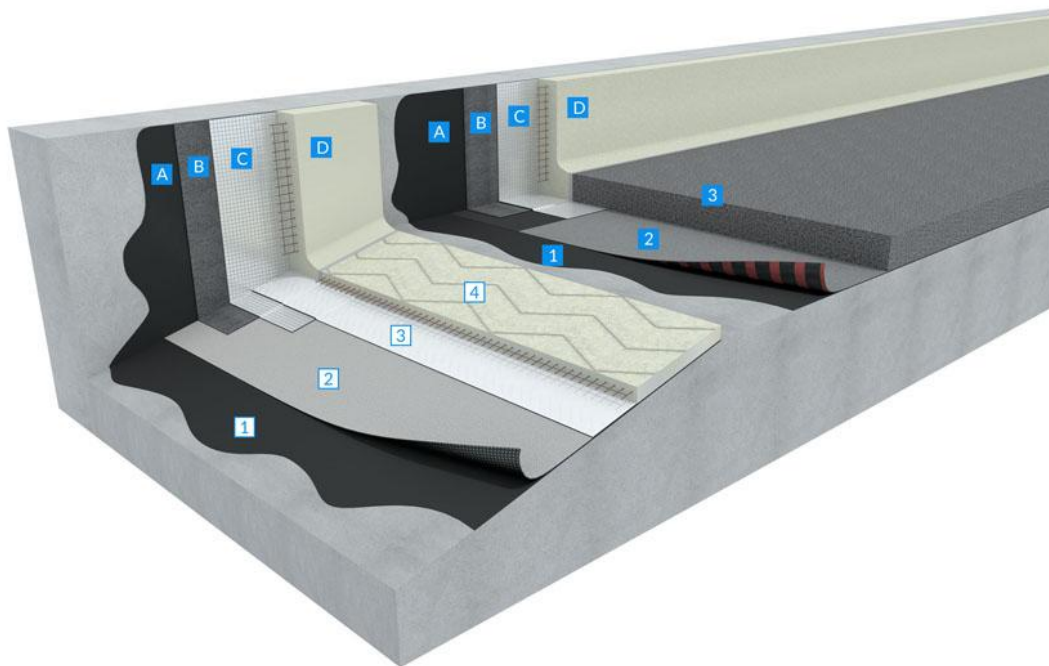


Car park decks - bitumen concrete finish
Single layer SBS bitumen waterproofing system:
Heat activated THERMOSOLO® GS

Substrate & Use of roof	Finishing	Standard warm roof /Inverted roof
Concrete Vehicle accessible terraces / car parks of the buildings: retail and commercial buildings, supermarkets, residences, leisure and hospitality, airports, etc.	Macadam/bituminous concrete	Without thermal insulation



- **Substrate**

The load bearing structure (concrete) must comply with all associated national standards and regulations, ensuring that the load bearing capacity is sufficient for any additional loads imposed upon the construction. It is important to consider the possibility of future deflection of the construction when designing roof drainage.

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- **Preparation:** The bearing elements and substrates must comply with local technical standards.
After proper cleaning of the area, a complete control shall be carried out by the Contractor. Slope and planarity shall be carried out with the following tolerances:
 - **Slope:** Allowable slopes:
2% slope 5%: flat roofs, traffic suitable for pedestrians and car parks.
Slope 5%: access ramps; some slopes may reach 18%.
 - **Levels:**
Tolerances for planarity shall be:
 - 10 mm with a 2 m straight edge.
 - 5 mm with a 200 mm straight edge.
 - **Surface:**
Prepare substrate surfaces thoroughly prior to application of new roofing materials. This is particularly important for refurbishment applications. Providing a smooth, even, sound, free of dust, grease and oil, foreign chemicals, curing compound, clean and dry substrate minimises the likelihood that underlying deficiencies will cause premature deterioration or even failure of the new roofing system.
Concrete or masonry:
Masonry bearing elements and substrates in compliance with local technical standards
Are not accepted: slope screeds of lightweight concrete.
- **Upstands/Parapets:**
Siplast Primer: cold-applied, quick drying, universal elastomeric bitumen primer. Approx. coverage approx. 0.30 litre/m² on concrete (depending on concrete porosity, please consult the supplier's technical documentation).
Paradiene 35 S R4: Polyester-reinforced modified SBS elastomeric bitumen membrane with thermofusible film faced and sanded underside. Used as a first layer membrane for parapets, fully torched.
Paradial S: 3.5 mm thick at the selvedge (thickness without aluminium foil self-protection), composite reinforced modified SBS elastomeric bitumen cap sheet protected by embossed thermo-stable aluminium foil. It is used as a cap-sheet layer for vertical upstands waterproofing works and in a two-layer system for non-accessible roofs. Thermo-fusible film on the underside, nominal width 70 mm at longitudinal selvedge. Fully torched on top of the Paradiene 35 S R4. Or alternative to Paradial S, **Verinox S** to be applied (torched on top of the Paradiene 35 S R4), in this case no need for upstand protection.
Verinox S: stainless steel-faced, composite reinforced, 3,5 mm thick, modified SBS elastomeric bitumen cap sheet, thermo-fusible film on the underside. Fully torched on top of the Paradiene 35 S R4.

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Protection of upstands/parapets : Wire meshed cement mortar.

- **Waterproofing**

Siplast Primer: cold-applied, quick drying, universal elastomeric bitumen primer. Approx. coverage approx. 0.30 litre/m² on concrete (depending on concrete porosity, please consult the supplier's technical documentation).

Thermosolo® GS: Polyester-reinforced, 4 mm thick, modified SBS elastomeric bitumen cap sheet with heat-activated adhesive stripes for partial bonding, designed for single-layer systems. Surfaced with granules, the underside is fitted with a distinctive pattern (patented system) of heat-activated adhesive strip, called Syntan® technology which has a special adhesive pattern on the bottom face to enable free movement of vapor and to facilitate partial bonding. Torchable selvedge with thermo fusible film of nominal width: 90 mm. Torched onto Siplast Primer.

*Mixed-use terraces for light vehicle access with planted areas (such as podiums with green areas): Thermosolo GS is replaced by the system of **Perfader + Preflex + Graviflex**.*

Waterproofing for Access Ramp: slope from 5% to 18%

- **Siplast Primer** applied horizontally (the main area) and vertically (upstands)
- Single layer of **PARAFOR PONT** fully torched on the main area (for upstands: torched **Paradiene 35 S R4** as underlayer and **Paradial S** as cap sheet onto Paradiene 35 S R4)
- Separation layer: **Canopia Filtre** (200 g/m² non-woven polyester fleece) + **Topfoil** (PE sheet) loosely-laid
- reinforced concrete

PARAFOR PONT: polyester-reinforced, 4 mm thick, modified SBS elastomeric bitumen top layer membrane, surfaced with white ceramic granules and fitted with perforated thermofusible film on the underside.

- **Protection**

Bituminous concrete: complying with local technical standards and scope of application. The nominal thickness of the bitumen concrete depends on the type of vehicles and the intensity of the traffic.

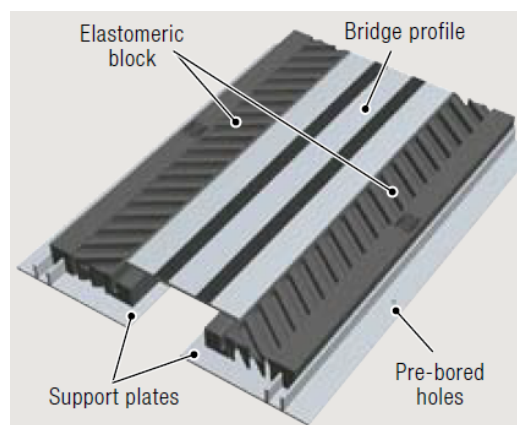
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- **Expansion Joints for car parks**

PARADYL System: Protection system on the waterproofing of flat expansion joints for light vehicles traffic (loads $\leq 2t$ per axle) and suitable for parking areas with occasional access for fire fighting vehicles and trucks. Paradyl flat expansion joint, built in compliance with the Paradyl ATEX in association with the Neodyl system.



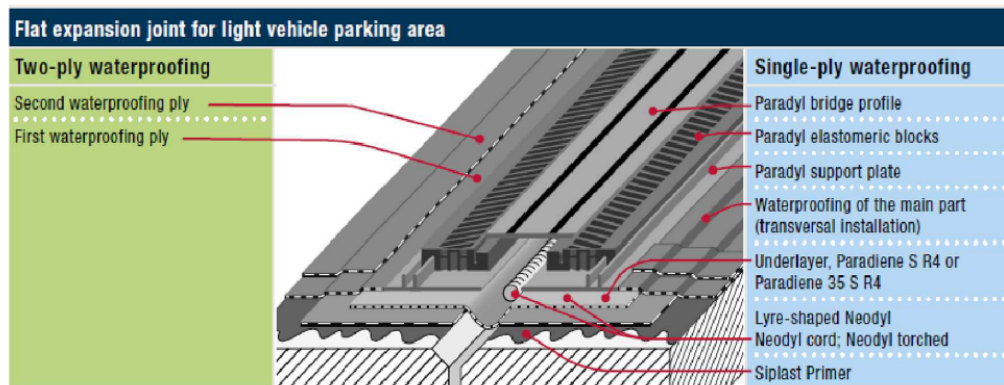
The flat joint seal is protected by PARADYL system: supporting plates of pultruded resin, supplemented by vulcanised elastomeric blocks with differentiated deformability, fitted onto the support plates plus installation of the pultruded resin covering bridge, fitted onto the elastomeric blocks.



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Installation: Installing the Paradyl joint requires a careful preparation of the substrate that is to be flat (flattening down when necessary with resin mortar, planing, etc.). For the installation, refer to the installation manual that comes with each kit of 1m:

- o **SIPLAST PRIMER** applied on concrete on both sides of the expansion joint opening.
- o **PARADIENE 35 S R4** (polyester reinforced modified SBS elastomeric membrane), fully torched on SIPLAST PRIMER on both sides of the expansion joint opening
- o **NEODYL**, non-reinforced SBS joint with 1000% of elongation is fully torched above PARADIENE 35 S R4 bridging the expansion joint opening
- o **NEODYL Cord** (Butyl cord) is placed in the V-shaped joint.



- **Details**

All details shall be finalised before roofing works start:

Rainwater drains shall be well located, in sufficient numbers and ready to receive waterproofing membranes.

Expansion joints shall be located at the highest roof points, on reinforced concrete curbs chamfered as shown on drawings.

All pipes, cables and other penetrations shall be in place. Provision for proper waterproofing of roof equipment and machinery shall be made.

All parapets shall be in place, with provision for groove or counter flashing at an acceptable height (150 mm above finished roof level).

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