MACLENNAN-LSE
POLY PRUFE WATERPROOF COATING
0845 658 7777
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# Maclennan-LSE Traffic Deck System

Waterproofing and Anti-Slip Surfacing System For Car parks Decks & Walkways

## System Description

Traffic Deck TD40 Rapid Curing Liquid Applied/Spray Applied Waterproof/Wearing Surface for Exposed Concrete Car Decks.

A high build (4mm) waterproof, protective coating system for vehicular and pedestrian use. The system combines a seamless coating with speed of application even at low temperatures, it is non-solvented and odourless

## Submittals

1. Submit British Board of Agrement certificate no. 03/3990.
2. Submit a representative sample of the system.
3. Submit copies of manufacturers Technical Data Sheets and Material Safety Data Sheets (SDS) for all products
4. Submit Hyperlast ISO 9001 Material Quality Assurance certification.
5. Submit “Approved Applicator” certification from manufacturer.
6. Upon completion of the contract submit all required warranty documentation, including Daily Record Sheets and a Satisfaction Certification of Project Completion from the client.
7. Upon completion of the contract the manufacturer shall submit “Maintenance and Repair Recommendations”.

## Quality Assurance:

A. The materials manufacturer shall be Quality Certified to ISO 9001.

B. The applicator must be fully trained and approved by the manufacturer.

C. Daily Record Sheets as provided by the manufacturer must be recorded and maintained on a daily basis in accordance with the warranty requirements. This documentation must be made available to Hyperlast throughout the duration of the works.

D. If Hyperlast is required to provide an on-site supervisor, the client must request this in writing, indicating the number of days and separate work phases, before the Traffic Deck applicator provides his quote.

E. Applicator must at all times have available a job specific manual, which will include the Specification, Technical Data and the Material Safety Data Sheet (MSDS) information.

F. Proposed suppliers of an “or equal” system shall be required to meet all the attributes of the Traffic Deck TD40 system.

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### Quality Assurance (continued)

1. British Board of Agrement Certificate.
2. Complete system DFT 4mm.
3. Instant setting spray applied, Elastomeric basecoat membrane DFT 1mm.
4. Traffic Coat DFT 0.80mm
5. Epoxy Sealer/Primer with silica sand
6. System to be completely non-solvented and odorless.
7. System must have a single source 10 year manufacturer's NDL warranty.
8. Cracks up to 1.5mm do not require pretreatment.
9. Cracks over 1.5mm do not require routing or sealant.
10. No reinforcing sheets or flashings required.

### Delivery, Storage, Handling

A. Materials shall be delivered in original sealed containers, clearly marked with manufacturers name, product name, batch number and date of manufacture.

B. Materials should be stored upright in a safe manner in accordance with the manufacturer's recommendations as indicated on the relevant Technical Data Sheets. Ensure all fillers and aggregates are kept dry.

C. Operatives should at all times observe the requirements for wearing protective clothing as outlined in the relevant products' Safety Data Sheets.

### Delivery, Storage, Handling (continued)

The applicator should also work in accordance with local health and safety requirements.

D. Materials and packaging should be disposed of in accordance with applicable rules and regulations of local authorities having jurisdiction.

### Project Conditions

A. Protection of adjacent areas from overspray or other system-related contamination shall be the responsibility of the applicator. Provide windbreaks where necessary.

B. Install materials in accordance with manufacturers Technical Data Sheets, SDS or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction.

C. Unless otherwise approved by the manufacturer, application can proceed while air and substrate temperatures are between 0ºC and 40ºC providing the substrate is at least 3ºC above the dew point and rising.

D. The General Contractor shall ensure that adequate protection is provided for the duration of the contract to prevent damage or contamination to the system by others negligence.

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## Warranty

**Upon completion of the work, the Contractor must supply the owner with a single source 10-year NDL manufacturer's warranty.**

## Materials

A. Primer – E4 Primer.

1. The E4 Primer is a high build, non-solvented two-component epoxy resin primer.
2. The E4 Primer is broadcast to refusal with a dry sand (0.3-0.6mm), as approved by the manufacturer.

B. Low Temperature, Fast Cure Primer – E4FC (if required) If faster application is required, or if temperatures range between 0°C – 7°C, E4FC Primer should be applied as per E4.

C. Basecoat Membrane – Flex 2000 SG The Flex 2000 SG is a spray applied two-component, non-solvented and rapid curing membrane that can be overcoated within 2 hours at temperatures as low as 0ºC. The Flex 2000SG waterproof membrane shall have a DFT of 1mm minimum.

D. Traffic Coat – Grip 1000

1. The Grip 1000 is a two-component, rapid-curing, hand-applied, non-solvented protective coat that can be trafficked within 4 hours of application at 20ºC.
2. The Grip 1000 is broadcast to rejection with the chosen dry skid resistant aggregate as approved by the manufacturer. Typically the DFT of the traffic coat including aggregate shall be 2mm. (typically sieve size 0.4-0.8mm Crystallized Quartz sand, colored aggregate or 1mm Bauxite).

Top Coat PUV (SEE PAGE 4)

## Inspection

A. The Client and Applicator shall inspect and approve the prepared substrate prior to application of the primer coat.

B. Random tests for adequate tensile strength of the substrate can be conducted (using an Elcometer Adhesion Tester) on the substrate by the applicator at a minimum frequency 1 per 500m2. For smaller areas, a minimum of three tests shall be conducted and the results recorded. The minimum tensile bond strength of the concrete shall be 1.52mPa.

## General Preparation

A. New concrete shall have cured for a minimum of 28 days or meet the requirements of ASTM D4263-83.

B. Substrates to be coated must be firm, dry and load bearing, free of loose and brittle particles, laitance and contaminants that would impair adhesion

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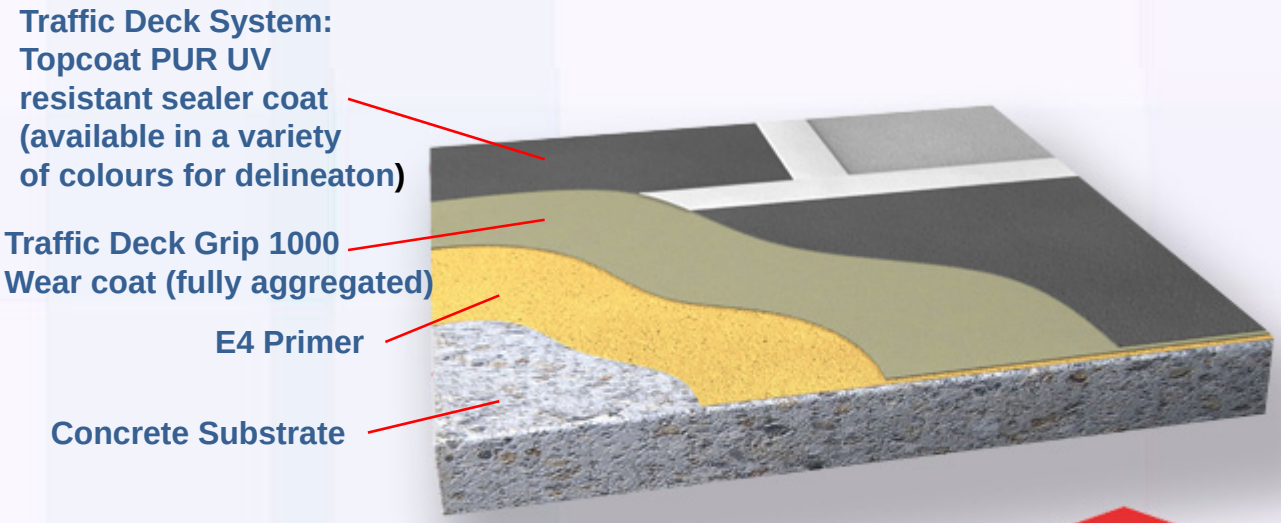


E. Topcoat PUV clear or coloured. The Topcoat PUV is a one-component, polyurethane sealer, that is applied in two coats using a medium pile roller or low pressure airless spray. The DFT of the topcoat shall be 0.25mm.

1. The Topcoat PUV can be applied to the aggregated Grip 1000 Traffic Coat after 2 hours @ 20°C.
2. The Topcoat PUV shall be applied evenly in two coats using a medium pile roller at a rate of approximately 450gms/m2. The second coat of Topcoat PUV must be applied to the first coat within 8 hrs. Topcoat PUV can be walked on in 4 hrs. @ 20ºCF.

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## Accessories

A. P2 Primer – quick curing, Flex, concrete, metal primer.
B. Flex 3000 HA – hand-applied membrane.
C. Cilbond 41 Primer – aluminum, copper primer.
D. Grip 4000 – for heavy wear, tight turn ramps.
E. Grip 3000, 9000 – levelling screed.
F. Aggregates - as per project requirements and approved by manufacturer.
G. Plural component spray machine complete and capable of providing material at 3000 psi and 75º C, as approved by the manufacturer.



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### General Preparation (continued)

B. such as dirt, oil, grease, algae, rubber skid marks, old coatings and other substances.

C. The substrate shall be abrasively cleaned by shotblasting in accordance with ASTM D4259-88, section 8. Preparation by mechanically abrading in accordance with ASTM 4259-88, section 6 is acceptable subject to manufacturer's approval. There should be an "open" concrete surface in accordance with ICRI surface profiles CSP 3-6.

D. The surface profile is not to exceed 3mm (peak to valley). Minor surface area deterioration of 3mm or greater shall be repaired to minimize excessive material usage. Thin surface repair materials must be compatible with the Traffic Deck system and approved for use by the Client and Manufacturer.

E. Edges and other areas inaccessible to the enclosed shot blasting equipment should be prepared by using hand held surface scabbling/planing or scarifying tools with vacuum attachment. Open grit blasting and hot compressed air are other surface preparation techniques that can be considered.

F. The same procedure for surface preparation shall be applied to vertical surfaces. Blowholes and voids exceeding 6mm shall be identified and filled with a repair mortar using E4 Primer and sand.

F. (continued)This repair mortar must then be primed as specified (Section 3.03 A) to ensure a fully aggregated surface is provided for the Flex membrane. Very porous walls (such as block work or brick may require two coats of E4 Primer applied as specified (Section 3.03 A6).The Grip 1000 is broadcast to rejection with the chosen dry skid resistant aggregate as approved by the manufacturer. Typically the DFT of the traffic coat including aggregate shall be 2mm. (typically sieve size 0.4-0.8mm Crystallized Quartz sand, coloured aggregate or 1mm Bauxite).

G. Pre-cast concrete panels should not contain oil based release agents. Large craters or imperfections should be filled with a mortar mix of E4 Primer and sand. The concrete surface should be lightly abraded with a diamond disc angle grinder. Pre-cast decks must be shot blasted to expose some of the aggregate and leave a textured surface.

H. Where the termination point of the system on horizontal surfaces does not meet a wall or curb, a straight 6mm square groove saw cut should be formed.

I. After surface preparation, all cracks should be identified and cleaned; the edges of the crack must be tested for loose, friable concrete.



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### General Preparation (continued)

I. (continued) Cracks up to 1.5mm do not require basecoat membrane “stripe coat” Cracks over 1.5mm do not require saw cut.

J. After surface preparation all expansion/movement joints should be inspected at the edges and any loose concrete removed and repaired. If either edge of joint is not the same height, the higher edge should be “planed”, to form a smoother transition as the system will wear prematurely at the higher leading edge.

K. Metal upstands, flashings, and drains, must be mechanically abraded back to clean metal, (SSPC – SP3 standard minimum), and solvent wiped.

L. Ensure all drains are masked out during work to prevent clogging with resin or aggregate.

M. Where the deck meets an outside wall, no cant strip or sealant is required.

### Installation

A. Primer

1. The E4 or E4FC Primer shall be applied evenly at an overall coverage rate of 40m2/kit (10 kg). The spread rates achieved shall be recorded on the Daily Record Sheets. On concrete that is very porous or rougher than specified (Sect. 3.02C) the consumption rates of E4 Primer will increase.
2. The primer should be worked into the surface to seal all pores using a suitable medium pile roller or double blade foam rubber squeegee and back-rolled.If the concrete is rough or uneven, care must be taken to prevent “puddles” of primer by using a long sleeved roller to remove the excess.
3. A dry crystallized quartz sand (0.3-0.6mm) shall be cast onto the wet primer until the primer is fully filled. Consumption of silica sand shall be approximately 0.5kg/m2. Ensure there are no “shiny” areas, indicating the epoxy is not fully filled.
4. The excess silica sand must be completely removed before application of the Flex 2000SG membrane layer. Stiff bristled brooms or mechanical sweepers must be used to remove poorly bonded sand. If after removal of the aggregate, “shiny” spots do appear, these areas must be re-primed and sanded to refusal.
5. If the concrete is rougher than specified (Section 3.02 C), it can be smoothed by making a repair mortar using E4 Primer and sand. Levelling – approx. 1 part epoxy/ 3 parts sand, by weight. Patching – approx. 1 part epoxy/ 5 parts sand, by weight. Repairs up to 6mm – use size 0.3mm-0.4mm sand.6mm to 50mm – use size 0.4mm–0.8mm sand.



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**Installation** (continued)

5. (continued) This mortar must then be primed as specified (Section 3.03 A) to ensure a fully aggregated surface is provided for the Flex membrane. Proprietary thin surface repair materials must be compatible with the Traffic Deck system and approved for use by the Client and Manufacturer.
6. If the concrete is holding excessive moisture or if the moisture has no other means of escape (i.e. metal shuttering or cladding), Traffic Deck can still be applied. In this instance the surface must be dry and two coats of E4 Primer must be applied. The first coat is applied at a rate of 40m2/ kit (10 kg), and no sand is added. The second coat is applied at a rate of 42m2/ kit (10 kg), and dry silica sand is added as per specification. When applying E4 Primer on to an excessively damp concrete, a small trial area should be coated first to ensure E4 Primer cures properly. Remedial action should be taken to allow excess moisture to leave the substrate. The metal cladding or shuttering must be vented.

B. Basecoat Membrane – Spray Applied

1. The Flex 2000 SG shall be spray applied using a suitable plural component spray machine at a rate of 420m2/kit (420 kg). If the concrete is rougher than specified (Section 3.02 C), it can be repaired as specified (Section 3.03 A5).
1. (continued) the consumption of Flex 2000 SG elastomeric membrane will increase.
2. The Flex 2000 SG shall be applied evenly in a methodical manner, closely monitoring the volume of material used against the area covered. This information shall be recorded on the Daily Record Sheets.
3. Whenever the Flex basecoat membrane is applied in sections, each application must overlap the previous one by a minimum 100mm to a neat straight line. Flex SG membrane can be applied directly to Flex SG membrane within 2 hours minimum and 24 hours maximum. Flex HA membrane can be applied directly to Flex HA membrane within 4 hours minimum and 48 hours maximum.
4. If these times are exceeded, Flex basecoat membrane must be “stripe coated” with a 100mm wide band of P2 primer using a shorthaired roller at a rate of 180 linear metres/ kit (0.75 kg). The P2 primer must be fully filled with dry, silica sand (0.4-0.8mm). Ensure there are no “shiny” areas, indicating the primer is not fully filled. The excess silica sand must be completely removed before application of the Flex basecoat membrane.

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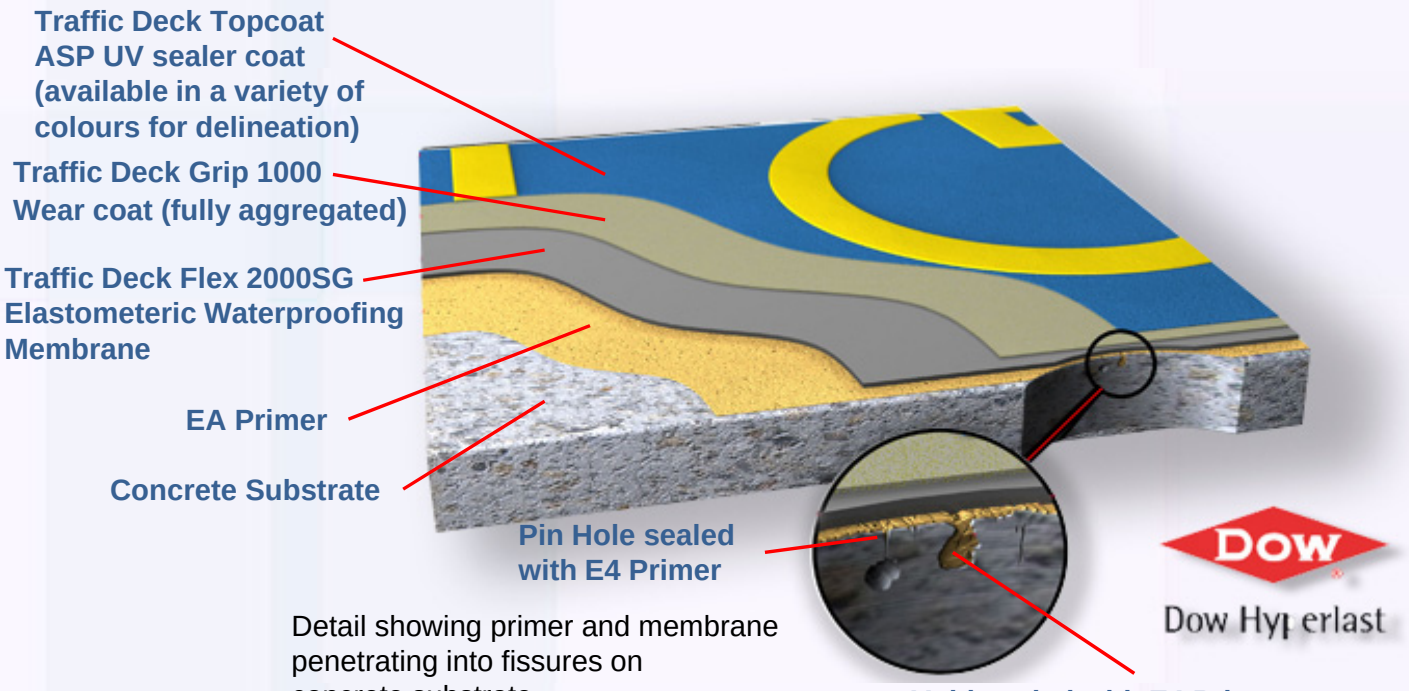


Detail showing primer and membrane penetrating into fissures on concrete substrate

### C. Traffic Coat

1. The Grip 1000 should be applied to the Flex 2000 SG membrane after 2 hours and within a maximum of 48hours.
2. The Grip 1000 shall be applied evenly using a 3mm serrated squeegee and must be back-rolled with a medium pile roller (12mm nap) at a rate of 18m2/ kit (15 kg) and allowed to level.
3. The chosen dry aggregate (typically size 0.4-0.8mm) shall be cast onto the wet resin, vertically and to refusal then allowed to cure. Consumption rate for the aggregate shall be approximately 4-5kg/m2. Ensure there are no “shiny”
3. (continued) areas, indicating the Traffic Coat is not fully aggregated.
4. The excess aggregate can be removed from the substrate after approximately 2 hours (at 20ºC) by using stiff bristled brooms and suitable mechanical blowing equipment or an industrial vacuum.

### D. Traffic Coat – High Wear Areas

1. Areas of high wear, such as steep or circular ramps, turning circles, or high traffic locations will require a further application of the Grip 1000 Traffic Coat at a rate of 15m2/ kit (15 kg)
2. The chosen dry aggregate (typically size 0.4-0.8mm) shall be cast onto the wet



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Traffic Coat (continued)

2. (continued) resin, vertically and to refusal then allowed to cure. Consumption rate for the aggregate shall be approximately 5 - 6kgs/m2.

E. Topcoat PUV clear or coloured

1. The Topcoat PUV can be applied to the Grip 1000 Traffic Coat after 2 hours.
2. The Topcoat PUV shall be applied evenly in two coats using a medium pile roller (6mm nap) or airless spray and back rolled at a rate of approximately of 325gms/m2 for the 1st coat and 125gms/m2 for the 2nd coat. Spread rates will vary depending on aggregate size and type.

F. Detailing

1. Cracks/Cold Joints up to 1.5mm: Preparation as per section 3.02 I. Apply Traffic Deck system in accordance with specification.
2. Cracks/Cold Joints over 1.5mm: Preparation as per section 3.02 I. After priming apply “stripe coat” of Flex 2000 SG basecoat membrane at 1mm DFT into and 50mm either side of the crack. When the deck is sprayed, these areas will receive another 1mm DFT (total 2mm DFT). No saw cut or routing is required.
3. Expansion Joints: Preparation as per section 3.02 J. Apply primer to edge of expansion joint. Apply Flex 2000 SG basecoat membrane and Grip 1000 Traffic Coat on the primed surface to.
3. (continued) edge of joint The system must not be applied directly into the joint recess or onto the expansion joint material where it covers the joint opening. The manufacturer on a case-by-case basis shall approve the detailing of Traffic Deck to Mechanical Joints.
4. Upstands and Flashings: Preparation as per section 3.02 K. Prime with E4 or Cilbond 41 Primer (depending on substrate). After priming to required height (usually 100mm), apply a “stripe coat” of Flex 2000 SG basecoat membrane vertically to the same height at 1mm DFT. When the deck is sprayed, these areas will receive another 1mm DFT (total 2mm DFT). Apply Grip 1000 Traffic Coat, as specified, vertically to the same height.
5. Metal Drains: Preparation as per section 3.02 K. Prime with Cilbond 41 or E4 Primer as specified and in accordance with the data sheet. After priming apply a “stripe coat” of Flex 2000 SG basecoat membrane to the primed surface at 1mm DFT. When the deck is sprayed, these areas will receive another 1mm DFT (total 2mm DFT). Apply Grip 1000 Traffic Coat as specified only to the edge of the drain (not into the drain). The manufacturer on a case-by-case basis shall approve the detailing of Traffic Deck to drains that are not metal.

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### Detailing (continued)

6. Termination groove on horizontal surfaces: Prepare as per section 3.02. Prime surface and apply Flex 2000 SG basecoat membrane to the edge of the termination groove only. Apply Grip 1000 Traffic Coat into termination groove.