



## Grace Construction Products Ltd

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**Agrément  
 Certificate  
 No 04/4173**

Designated by Government  
 to issue  
 European Technical  
 Approvals

### SERVIDEK/SERVIPAK TRAFFICKED DECK WATERPROOFING SYSTEM

Membrane d'étanchéité  
 Wasserdichtung


## Product



- THIS CERTIFICATE RELATES TO THE SERVIDEK/SERVIPAK TRAFFICKED DECK WATERPROOFING SYSTEM, COMPRISING A TWO-COMPONENT, LIQUID-APPLIED, POLYMER-MODIFIED BITUMEN WATERPROOFING MEMBRANE AND PROTECTION BOARDS.
- The system is for use as a waterproofing layer on trafficked decks subject to vehicular and pedestrian traffic.
- The system must be overlaid with a suitable wearing surface. The wearing surface is outside the scope of this Certificate.
- The system is manufactured and marketed by the Certificate holder.

continued

## Regulations

1 The Building Regulations 2000 (as amended) (England and Wales)	
 <p>Requirement: B4(2)            Comment:</p>	<p>External fire spread            When used on decks with an asphalt or concrete wearing surface, the deck may be deemed to be of designation EXT.F.AA. See section 11 of this Certificate.</p>
<p>Requirement: C2(a)(b)            Comment:</p>	<p>Resistance to moisture            The system can enable a structure to satisfy this Requirement. See section 9 of this Certificate.</p>
<p>Requirement: Regulation 7            Comment:</p>	<p>Materials and workmanship            The system comprises acceptable materials. See sections 12.1 and 12.2 of this Certificate.</p>

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continued

• *This is not a Roads and Bridges or HAPAS Certificate and the system has not been assessed under these schemes.*

## 2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, the Servidek/Servipak Trafficked Deck Waterproofing System, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation:	10	Fitness of materials and workmanship
Standard:	B2.1	Selection and use of materials, fittings, and components, and workmanship
Comment:		The product can contribute to a construction meeting this Standard. See the <i>Installation</i> part of this Certificate.
Standard:	B2.2	Selection and use of materials, fittings, and components, and workmanship
Comment:		The product is an acceptable material. See sections 12.1 and 12.2 of this Certificate.
Regulation:	12	Structural fire precautions
Standard:	D9.1	Fire spread from an adjoining building
Comment:		When used on decks with an asphalt or concrete wearing surface, the deck may be considered to be of designation EXT.F.AA. See section 11 of this Certificate.
Regulation:	17	Resistance to moisture
Standard:	G3.1	Resistance to precipitation — Resistance to precipitation
Comment:		The system can enable a structure to satisfy the requirements of this Standard. See section 9 of this Certificate.

## 3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, the Servidek/Servipak Trafficked Deck Waterproofing System, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The system comprises acceptable materials. See sections 12.1 and 12.2 of this Certificate.
Regulation:	C4	Resistance to ground moisture and weather
Comment:		The system can enable a structure to meet this Regulation. See section 9 of this Certificate.
Regulation:	E5	External fire spread
Comment:		When used on decks with an asphalt or concrete wearing surface, the deck may be deemed to be of designation EXT.F.AA. See section 11 of this Certificate.

## 4 Construction (Design and Management) Regulations 1994 (as amended)

### Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: *6 Delivery and site handling (6.3 to 6.6) and 8 Precautions during application.*

## Technical Specification

### 5 Description

5.1 The Servidek/Servipak Trafficked Deck Waterproofing System comprises a liquid-applied, polymer-modified bitumen waterproofing membrane protected with Servipak preformed protection boards.

5.2 Components of the system include:

- Servidek — a two-component, liquid-applied, polymer-modified bitumen, elastomeric waterproofing membrane
- Servipak — a range of protection boards comprising bitumen bond aggregates, laminated between asphalt paper. The boards are available in sizes of:
  - Servipak 3 — 1 m x 2 m x 3 mm thick
  - Servipak 6 — 1 m x 2 m x 6 mm thick
  - Servipak 12 — 1 m x 1 m x 12 mm thick
- Armourtape — a 1.5 mm thick, bitumen-based tape for sealing joints between Servipak boards, available in rolls of 10 m length by 75 mm wide
- Primer B2 — a bitumen-based primer for priming Servipak joints prior to applying Armourtape available in 5 litre and 25 litre drums.

5.3 The components are manufactured either by batch processes and/or proprietary laminating techniques and a series of quality control checks is conducted on each batch, and on the finished products.

### 6 Delivery and site handling

6.1 The liquid components of the system are delivered to site in labelled, sealed containers, and where appropriate, in the specified mix proportions.

6.2 During winter months, the Part B component must be protected by insulated packaging.

6.3 The pack weights and types are given in Table 1.

Table 1 Pack weights

Component	Pack weight (kg)	Pack type
Servidek (22.5 litre)		
Part A	20.4	bucket
Part B	4.5	bucket
Servidek (3 litre)		
Part A	2.7	bucket
Part B	0.6	bucket
Servipak 3 board	8	pallet
Servipak 6 board	18	pallet
Servipak 12 board	22	pallet
Armourtape	25	carton
Primer B2		
5 litre	5	can
25 litre	25	drum

6.4 Each container includes a label bearing the batch number, use-by date and quantity. The packaging also includes health and safety information.

6.5 The Servidek components and Primer B2 are classified under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3) and all containers bear the appropriate hazard warnings. Flashpoints and hazard classifications are given in Table 2.

Table 2 Flashpoint and hazard classification

Component	Flashpoint (°C)	Classification
Servidek		
Part A	N/A	Irritant
Part B	N/A	N/A
Primer B2	25	Harmful, flammable

6.6 The containers must be kept tightly sealed and all components must be stored under cool and dry conditions, away from other chemicals and sources of ignition. All containers should be protected from frost when stored externally.

6.7 When correctly stored in accordance with the Certificate holder's instructions, the components of the system will have a storage life of at least 12 months. The Certificate holder's product data sheets should be consulted for details.

## Design Data

### 7 General

7.1 The Servidek/Servipak Trafficked Deck Waterproofing System applied to a concrete deck laid in accordance with BS 8110-1: 1997 is satisfactory for use as a waterproofing layer for trafficked decks subject to vehicular and pedestrian traffic.

7.2 The system must be overlaid with a suitable wearing course. Suitable materials include asphalt, concrete, paving slabs and block pavers.

7.3 The system may also be applied to steel substrates that are free of rust, scale, oil and other contaminants.

### 8 Precautions during application

Contact with the liquid components of the system may cause irritation to the skin and eyes and must be avoided. The Certificate holder's instructions and the relevant working procedures must be observed at all times.

### 9 Resistance to water and water vapour



Tests confirm that the Servidek/Servipak Trafficked Deck Waterproofing System is an effective barrier against the passage of

water and water vapour. It is flexible and can accommodate the movement due to cracking permitted by BS 8110-1 : 1997 and satisfies the requirements of:

## **England and Wales**

Approved Document C, Requirement C2, Section 5.1

## **Scotland**

Regulation 17, Standard G3.1

## **Northern Ireland**

Regulation C4.

## **10 Ability to accommodate movement**

The Servidek/Servipak Trafficked Deck Waterproofing System can be used with a range of expansion joint systems. The Certificate holder should be consulted for suitable products and designs.

## **11 Properties in relation to fire**



When used on decks with a suitable asphalt or concrete overlay, the deck may be deemed to be of designation EXT.F.AA as described in the national Building Regulations.

## **12 Durability**



12.1 The Servidek/Servipak Trafficked Deck Waterproofing System is durable and should remain effective provided it is not damaged during subsequent resurfacing.

12.2 Available evidence indicates that the system should have a service life of at least ten years.

## **Installation**

### **13 General**

13.1 Installation of the Servidek/Servipak Trafficked Deck Waterproofing System must be carried out by trained and certified applicators in accordance with the Certificate holder's instructions and this Certificate.

13.2 The system must be applied only to concrete or steel substrates that are clean and free from ice, frost, laitance, oil or other contaminants that could impair the adhesion of the system. Damp surfaces are acceptable but any surface water must be removed.

13.3 In the event that concrete curing compounds or membranes have been used that could impair the adhesion of the system to the concrete, an adhesion test should be carried out to determine if removal is necessary. The advice of the Certificate holder should be sought.

13.4 The system should only be applied when ambient air temperature is between 4°C and 35°C

and the substrate temperature is above the dew-point.

13.5 If an anti-corrosive coating is used on the steel, a test should be carried out to ensure adhesion of the system is not adversely affected.

### **14 Preparation**

14.1 Concrete structures should be designed and built in accordance with BS 8110-1 : 1997.

14.2 New concrete should be well compacted and trowelled to produce a dense finish that should be lightly textured using a wooden float.

14.3 Existing concrete surfaces should, if required, be levelled and screeded to form a uniform surface.

14.4 The maximum deviation in surface profile shall be 10 mm over a 3 m length and any abrupt irregularities over 3 mm should be removed or filled with a high-strength repair mortar. The advice of the Certificate holder should be sought for suitable repair materials.

14.5 Steel surfaces must be grit blasted to ensure that all rust, scale, oil, grease and other contaminants are removed before the system is applied.

### **15 Application**

15.1 The Servidek components must be thoroughly mixed by decanting the Part B component into the Part A component and stirring with a timber paddle in a folding motion until a homogeneous mix, free from streaks, is obtained. The use of a power mixer is not permitted.

15.2 If the ambient temperature is below 10°C, mixing of the components will be made easier if the components are stored at a temperature of approximately 20°C for several hours. Under no circumstances should the materials be heated directly.

15.3 The working life of the mixed material is approximately 20 minutes at a temperature of 20°C. One unit should be mixed at a time and applied immediately.

15.4 The mixed material should be poured onto the prepared substrate and spread, using a squeegee, to achieve a coverage rate of between 10 m<sup>2</sup> to 12 m<sup>2</sup> for the 22.5 litre unit and with a minimum film thickness of 1.8 mm.

15.5 Servipak protection boards must be laid while the Servidek compound is still wet. Servipak should be laid progressively to minimise applicator trafficking until the Servidek has fully cured. The joints between the Servipak boards should be dry and primed with Primer B2 in 100 mm wide bands with a brush or roller and allowed to dry before applying self-adhesive Armourtape centrally over the joint. Where gaps occur between boards, these must be filled with Servidek compound prior

to applying Armourtape over the joints. Careful application of heat will assist in promoting adhesion of the Armourtape at low temperatures.

15.6 The Servipak boards are fully bonded by rolling with a heavy, hand roller. Armourtape must be firmly rolled with a lap roller along its length and at junctions to ensure continuity.

15.7 Where Servipak boards abut details (such as parapet, pipe bays or abutments) they should be pre-measured, and accurately cut to size by scoring with a sharp knife and breaking.

15.8 It is advisable to seal the exposed edge of the Servipak boards at the end of each working period to prevent the ingress of moisture overnight, by tooling the Servidek compound against the exposed edge of the Servipak boards.

### Day joints

15.9 A minimum 50 mm leading edge of Servidek compound should be left to enable subsequent overlapping. Work should commence the following day, ensuring the edge is clean and dry and overlapped with fresh Servidek compound.

15.10 Exposed edges of Servipak protection board should be sealed using Servidek compound.

### Wearing surface

15.11 The minimum cure time for Servidek is four hours at 20°C, after which a suitable traffickable overlay should be applied as soon as possible. The advice of the Certificate holder should be sought for suitable overlays and cure times at other temperatures.

15.12 Where asphalt is used, it should be laid at a temperature between 135°C and 185°C.

### Repairs

15.13 Damage to the system, ie cuts and perforations, can be repaired by cutting out and replacing the damaged area with fresh material to the same specification.

15.14 A square should be marked around the damaged area ensuring a minimum 50 mm overlap onto undamaged material.

15.15 The damaged Servipak protection board is then removed by cutting around the marked area to approximately 50% of its depth, making sure that the Servidek compound underneath is not damaged, and separating it from the Servidek using a heated spatula or trowel.

15.16 Fresh Servidek compound is then applied to the entire exposed area, ensuring at least 50 mm overlap onto the existing undamaged Servidek compound, and a patch of Servipak protection board laid over the fresh Servidek compound.

15.17 The repair joints should then be primed and Armourtape is then applied to lap the Servipak joints.

15.18 Where extensive damage or contamination has occurred, it is necessary to remove all damaged Servidek and Servipak from the deck before applying fresh material. In this case the Certificate holder should be consulted for advice.

15.19 The overlay must be reinstated once the repair to the system has been completed.

## Technical Investigations

The following is a summary of the technical investigations carried out on the Servidek/Servipak Trafficked Deck Waterproofing System.

### 16 Tests

The results of characterisation tests carried out by the BBA are summarised in Table 3.

Table 3 General physical properties

Test (unit)	Method <sup>(1)</sup>	Results
Weight per unit area (kgm <sup>-2</sup> )	Direct measurement	
Servipak 3		4
Servipak 6		9
Water absorption (%)	BD 47	
Servidek		3.3
Water vapour permeability (gm <sup>-2</sup> day <sup>-1</sup> )	BS 3177 (25°C/75% RH)	
Servidek		4.3

(1) Test documents are detailed in the *Bibliography*. Numbers in the table refer to sections/parts of the various documents.

### 17 Investigations

17.1 An assessment was made of BBA test data leading to the issue of BBA Certificate Nos 75/R008, 82/R020 and 86/1597 relating to:

- pot life
- resistance to water penetration
- resistance to static loading
- resistance to chisel impact
- resistance to chloride ion penetration
- resistance to cracking
- tensile bond strength.

17.2 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials.

## Additional Information

The management systems of Grace Construction Products Ltd have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2000 by the British Standards Institution, Certificate No FM 11258.

## Bibliography

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 8110-1 : 1997 *Structural use of concrete — Code of practice for design and construction*

BS EN ISO 9001 : 2000 *Quality management systems — Requirements*

BD 47/94 *Waterproofing and Surfacing of Concrete Bridge Decks, Appendix B Certification Test Requirements for Waterproofing Systems on concrete Bridge Decks*

## Conditions of Certification

### 18 Conditions

18.1 This Certificate:

- (a) relates only to the product that is named, described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) is valid only within the UK;
- (d) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (e) is copyright of the BBA;
- (f) is subject to English law.

18.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

18.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabrication including all related and relevant processes thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine; and

(c) are reviewed by the BBA as and when it considers appropriate.

18.4 In granting this Certificate, the BBA is not responsible for:

- (a) the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the actual works in which the product is installed, used and maintained, including the nature, design, methods and workmanship of such works.

18.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, the Servidek/Servipak Trafficked Deck Waterproofing System is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 04/4173 is accordingly awarded to Grace Construction Products Ltd.

On behalf of the British Board of Agrément

Date of issue: 7th January 2005

A handwritten signature in black ink, appearing to read 'P. C. Newson'.

Chief Executive

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**British Board of Agrément**

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For technical or additional information, contact the Certificate holder (see front page).  
For information about the Agrément Certificate, including validity and scope, tel: Hotline 01923 665400, or check the BBA website.