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H A P A S

**Roads and Bridges
Agrément Certificate
No 01/H051**

*Third issue**

Designated by Government
to issue
European Technical
Approvals

CEMEX THIN SURFACING SYSTEMS FOR HIGHWAYS

This Certificate is issued under the Highway Authorities' Product Approval Scheme (HAPAS) by the BBA in conjunction with the Highways Agency (acting on behalf of the overseeing organisations of the Department for Transport; the Scottish Executive; the Welsh Assembly Government; the Department for Regional Development, Northern Ireland), the County Surveyors' Society, the Local Government Technical Advisers' Group, and industry bodies. HAPAS Agrément Certificates are normally each subject to a review every five years.

Product



• THIS CERTIFICATE RELATES TO CEMEX THIN SURFACING SYSTEMS FOR HIGHWAYS, COMPRISING EITHER PENETRATION GRADE BITUMEN WITH CELLULOSE FIBRES, OR POLYMER-MODIFIED BINDER WITH LIMESTONE FILLER AND GRADED FINE AND COARSE AGGREGATES.

- The systems are used in conjunction with either a bitumen emulsion tack coat to BS 434-1 : 1984 or a polymer-modified bond coat.
- The systems are installed only by contractors approved by Certificate holder using conventional paving equipment.

These Front Sheets must be read in conjunction with the accompanying Detail Sheets, which provide information to particular systems.

HAPAS Requirements — Detail Sheet 1

1 Requirements

The Highways Technical Advisory Committee (HiTAC) and HAPAS Specialist Group 3 (Thin Surfacing) have agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of Thin Surfacing Systems with the *Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways*. In the opinion of the BBA, the CEMEX Thin Surfacing Systems for Highways, when manufactured and laid in accordance with the provisions of this Certificate, can be designed to meet the relevant requirements and can achieve the Performance Levels given in Table 1 of the relevant Detail Sheet.

Regulations

2 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 section: 4 *Manufacture, quality control, delivery 4.3 and site handling of these Front Sheets.*

Technical Specification

3 Description

3.1 CEMEX Thin Surfacing Systems for Highways comprise a series of mixtures principally consisting of either a blend of penetration grade bitumen with cellulose fibres, or a polymer modified binder limestone filler and graded fine and coarse aggregates. The systems are used in conjunction with either a bitumen emulsion tack coat or a polymer-modified bond coat.

3.2 The choice of aggregates, types and size used will depend on site specific details, including location, and contractual requirements for Polished Stone Value (PSV), texture depth and/or other properties. Reference should be made to the appropriate Detail Sheet for information on a particular system.

4 Manufacture, quality control, delivery and site handling

4.1 The systems are manufactured, controlled and delivered in accordance with a BBA agreed Quality Plan which includes requirements for:

- binder
- aggregate selection
- plant suitability
- method of production and process control
- inspection and testing of finished product
- delivery vehicles.

4.2 Tack and bond coats may be delivered to site either in bulk by tanker or in 200 kg drums.

4.3 The system components, are not classified under the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP3). Standard material safety data sheets for hot asphalts apply.

Installation

5 General

CEMEX Thin Surfacing Systems for Highways are installed by contractors approved by the Certificate holder in accordance with their Installation Methods which include requirements for:

- limitations in respect of weather
- equipment
- substrate preparation
- joints
- installation procedures
- maintenance and repairs
- storage, handling and delivery
- on-site quality control and records.

6 Maintenance and repair

Motorways, trunk roads and other major repairs

6.1 The damaged area is removed by planing, to provide a length of at least 15 m for resurfacing. The planed area is resurfaced using material to the same specification using the techniques described under the *Installation* part of this Certificate.

Minor repairs

6.2 Minor repairs can be carried out by cutting out the damaged section and replacing it with a material of suitable specification agreed between the Certificate holder and the purchaser.

6.3 Where possible a diamond patch reinstatement shall be used. A minimum of 0.25 m in excess of the damaged area shall be replaced.

6.4 Joints must be saw cut, cleaned and painted with a thick uniform coating of hot bitumen.

Additional information

The management systems of CEMEX UK Materials Ltd have been assessed by SGS Yarsley International Certification Services as meeting the requirements of BS EN ISO 9001 : 2000, and also Sector Scheme No 14 *For the Quality Assurance of the Production of Asphalt Mixes*, Certificate Nos Q51349, Q51293, Q51345, Q1347, Q13002, Q50737, Q51283, Q5265, Q53355 and Q50352.

Bibliography

BS 434-1 : 1984 *Bitumen road emulsions (anionic and cationic) — Specification for bitumen road emulsions*

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

Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways, July 2004

Conditions of Certification

7 Conditions

7.1 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.

7.2 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.

7.3 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;

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

(d) remain in accordance with the requirements of the Highway Authorities' Product Approval Scheme.

7.4 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.

7.5 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, CEMEX Thin Surfacing Systems for Highways are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 01/H051 is accordingly awarded to CEMEX UK Materials Ltd.

On behalf of the British Board of Agrément

Date of Third issue: 31st January 2006

Chief Executive

**Original Certificate issued on 8th August 2001. This amended version issued to include a change of Certificate holder's name, contact details, amended product name and new Conditions of Certification.*

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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.



CEMEX UK Materials Ltd

VIATEX 14 mm THIN SURFACING SYSTEM FOR HIGHWAYS

Product



- THIS DETAIL SHEET RELATES TO THE VIATEX 14 mm THIN SURFACING SYSTEM FOR HIGHWAYS.
- The system is for use as a thin road surfacing laid at nominal thicknesses between 25 mm and 50 mm, covering the Classification Type C as defined in Table 1 of the Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways.

This Detail Sheet must be read in conjunction with the Front Sheets which give additional information on the HAPAS Requirements, Regulations and Conditions of Certification.

Technical Specification

1 Description

1.1 Viatex 14 mm Thin Surfacing System for Highways comprises a mixture consisting of a blend of 50 pen grade bitumen, limestone filler, cellulose fibres and graded fine and coarse aggregates (basalt, gritstone, quartzite, granite and hornfels).

1.2 The system is used in conjunction with either K1-40, K1-60 or K1-70 tack coat conforming to BS 434-1 : 1984, or Colbond 50 and 65, or Polybond 50 and 65 bond coats.

Design Data

2 General

2.1 Viatex 14 mm Thin Surfacing System for Highways is satisfactory for use as a thin surfacing system on highways.

2.2 The system is suitable for use on existing bituminous or concrete surfaces at a minimum temperature of 0°C, measured on a rising thermometer, provided the substrate is free from standing water or ice and that the minimum specified rolling temperature can be maintained.

2.3 The system, when manufactured and laid in accordance with the provisions of this Detail Sheet, can be designed to achieve the Performance Levels given in Table 1.

Table 1 Performance Levels achieved on trial installation⁽¹⁾

Test parameter	Performance Level ⁽²⁾	Requirement
Texture depth untrafficked (mm)	3	≥ 1.5
after two years of trafficking (mm)		≥ 1.0
Wheel tracking rate (mean/max individual) (mm h ⁻¹)	3	≤ 5.0/≤ 7.5
rut depth (mean/max individual) (mm)		≤ 7.0/≤ 10.5

(1) Mixture using 50 pen bitumen and cellulose fibres.

(2) Performance Levels are defined in Appendix B of the Guidelines Document.

3 Durability

3.1 The system has been used in the United Kingdom since 1995 and available evidence suggests that it will provide a durable surface course suitable for use on all classes of road.

3.2 A monitored installation leading to HA Type Approval showed that, when laid at a nominal thickness of 37 mm on a road of Stress Level 1⁽¹⁾ and estimated traffic level of over 1000 cv/l/d⁽²⁾, the product will meet the Performance Level 3⁽³⁾ requirement for initial and retained texture.

(1) Site Stress Levels are defined in Appendix C of the Guidelines Document.

(2) Traffic levels (cv/l/d) are defined as commercial vehicles/lane/day.

(3) Performance levels are defined in Appendix B of the Guidelines Document.

Technical Investigations

The following is a summary of the technical investigations carried out on the Viatex 14 mm Thin Surfacing System for Highways.

4 Tests

Mandatory laboratory and road tests

4.1 A series of tests was carried out on a mixture based on quartzite aggregate, 50 pen bitumen, cellulose fibres and K1-40 bond coat laid on the Avon ring road. The results of the tests are given in Tables 2 and 3.

Table 2 Mandatory laboratory tests carried out on the coarse aggregate, cores taken from the Avon ring road installation trial or on laboratory prepared samples of the same mixture recipe

Test	Method	Mean result ⁽¹⁾	Performance level
Coarse aggregate properties			
PSV	BS 812-114	66	n/a
AAV	BS 812-113	5.8	n/a
Wheel tracking at 60°C ⁽²⁾			
rate (mm h ⁻¹)	Appendix A.1 Guidelines Document	0.9	3
rut depth (mm)		2.7	
Sensitivity to water retained stiffness (ITSM _{c3}) ⁽³⁾ (%)			
	Appendix A.2 Guidelines Document	94	n/a
Torque bond strength at 20±2°C on 102 mm diameter cores (kPa)			
	Appendix A.3 Guidelines Document	747 ⁽⁴⁾	n/a

- (1) Mixture using, 50 pen bitumen, cellulose fibres, quartzite aggregate and K1-40 bond coat.
 - (2) Mean core thickness = 40 mm.
 - (3) Retained indirect stiffness modulus at 20±0.5°C after three water conditioning cycles carried out on laboratory-prepared samples.
 - (4) Interface shear.
- n/a = not applicable.

Table 3 Mandatory checks and tests carried out on the Avon ring road installation

Test	Method	Mean result	Requirement
Initial texture depth sand patch (mm)	BS 598-105	1.6	≥ 1.50
Visual observations		Good uniform surface with no significant faults or abnormalities noted	

4.2 Noise measurements made on an installation on the A19 indicate that Viatex 14 mm can reduce noise levels generated by vehicle tyres acting on the road surface. The results are given in Table 4.

Table 4 Test on A19 road installation

Test	Method	Mean result ⁽¹⁾
Noise RSI _H [dB(A)] ²	Statistical pass-by method Guidelines Document Appendix A.8	-2.7 ⁽³⁾
Age of site when tested (years)		2

- (1) Mixture using 50 pen bitumen, cellulose fibres and gritstone aggregate.
- (2) The minimum speed Road Surface Influence (RSI_H) is a measure of the difference in noise, that could be expected if compared against a theoretical hot-rolled asphalt surface with 2 mm texture depth. A negative result indicates a reduction in noise level. Noise levels will vary according to specific site conditions and system characteristics including texture, age of installation and voids content.
- (3) Mean result of two measurements, -2.4 and -2.9.

4.3 Noise levels will be affected by site specific conditions, including location and the condition of the existing road, and therefore the RSI_H values determined for the A19 road trial installation may not be reproduced on other installations.

4.4 Sensitivity to water test data relating to Viatex 14 mm mixture based on gritstone and granite was examined. The results are given in Table 5.

Table 5 Test on the mixture using 50 pen bitumen, cellulose fibres and either gritstone or granite aggregates

Test	Method	Mean result
Sensitivity to water retained stiffness (ITSM _{c3}) ⁽¹⁾ (%)		
gritstone	Appendix A.2 Guidelines Document	118
granite		78

- (1) Retained indirect stiffness modulus at 20±0.5°C after three water conditioning cycles carried out on laboratory-prepared samples.

4.5 Supporting test data for sensitivity to water on a mixture using either basalt or hornfels aggregates indicate satisfactory performance.

4.6 Wheel tracking test data on laboratory-prepared samples, prepared at a depth of 50 mm, indicate that Performance Level 3 for wheel tracking can be maintained.

5 Investigations

5.1 An installation trial was carried out to assess the practicability of the installation and on-site quality control procedures. A visual inspection of the site concluded that it was free from significant abnormalities. Results from the installation confirmed that it complied with the contractual requirements.

5.2 A user/specifier survey relating to existing sites that were at least two years old was carried out to confirm the system's performance in use.

5.3 The manufacturing process was examined by inspection of a typical coating plant, including the methods adopted for quality control, and details were confirmed of the quality and composition of materials used. The inspection confirmed that the plant operated in accordance with the requirements of the Quality Plan and Quality System agreed with the BBA.

Bibliography

BS 434-1 : 1984 *Bitumen road emulsions (anionic and cationic) — Specification for bitumen road emulsions*

BS 598-105 : 2000 *Sampling and examination of bituminous mixtures for roads and other paved areas — Methods of test for the determination of texture depth*

BS 812-113 : 1990 *Testing aggregates — Method for determination of aggregate abrasion (AAV)*

BS 812-114 : 1989 *Testing aggregates — Method for determination of the polished-stone value*

Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways, July 2004



On behalf of the British Board of Agrément

Date of Second issue: 31st January 2006

Chief Executive

**Original Detail Sheet issued 8th August 2001. This revised version includes new Certificate holder's name, increase in upper thickness and reference to additional tack and bond coats.*

Electronic Copy

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.



CEMEX UK Materials Ltd

VIATEX 10 mm THIN SURFACING SYSTEM FOR HIGHWAYS

Product



- THIS DETAIL SHEET RELATES TO THE VIATEX 10 mm THIN SURFACING SYSTEM FOR HIGHWAYS.
- The system is for use as a thin road surfacing laid at nominal thicknesses between 18 mm and 30 mm, covering the Classification Types B and C as defined in Table 1 of the Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways.

This Detail Sheet must be read in conjunction with the Front Sheets which give additional information on the HAPAS Requirements, Regulations and Conditions of Certification.

Technical Specification

1 Description

1.1 Viatex 10 mm Thin Surfacing System for Highways comprises a mixture consisting of a blend of 50 pen grade bitumen, limestone filler, cellulose fibres and graded fine and coarse aggregates (basalt, gritstone, quartzite, granite and hornfels).

1.2 The system is used in conjunction with either K1-40, K1-60 or K1-70 tack coat conforming to BS 434-1 : 1984, or Colbond 50 and 65, or Polybond 50 and 65 bond coats.

Design Data

2 General

2.1 Viatex 10 mm Thin Surfacing System for Highways is satisfactory for use as a thin surfacing system on highways.

2.2 The product is suitable for use on existing bituminous or concrete surfaces at a minimum temperature of 0°C, measured on a rising thermometer, provided the substrate is free from standing water or ice and that the minimum specified rolling temperature can be maintained.

2.3 The product, when manufactured and laid in accordance with the provisions of this Detail Sheet, can be designed to achieve the Performance Levels given in Table 1.

Table 1 Performance Levels achieved on trial installation⁽¹⁾

Test parameter	Performance Level ⁽¹⁾	Requirement
Texture depth untrafficked (mm)	1	≥1.0
after two years of trafficking (mm)		≥0.7
Wheel tracking rate (mean/max individual) (mm h ⁻¹)	3	≤5.0/≤7.5
rut depth (mean/max individual) (mm)		≤7.0/≤10.5

(1) Performance Levels are defined in Appendix B of the Guidelines Document.

3 Durability

The product has been used in the United Kingdom since 1997 and shares common elements with Viatex 14 mm including the same penetration grade bitumen, aggregate sources and bond coat. The available evidence suggests that it will provide a durable surface course for use on classes of road where the Performance Level 1 for texture is required.

Technical Investigations

The following is a summary of the technical investigations carried out on the Viatex 10 mm Thin Surfacing System for Highways.

4 Tests

Mandatory laboratory and road tests

4.1 Sensitivity to water test data relating to Viatex 10 mm mixture based on gritstone and hornfels, was examined. The results are given in Table 2.

Table 2 Test on the mixture using 50 pen bitumen, cellulose fibres and either gritstone or hornfels aggregate

Test	Method	Mean result
Sensitivity to water retained stiffness (ITSM _{0.3}) ⁽¹⁾ (%)	Appendix A.2 Guidelines Document	
gritstone		110
hornfels		111

(1) Retained indirect stiffness modulus at 20±0.5°C after three water conditioning cycles carried out on laboratory-prepared samples.

4.2 Supporting test data for sensitivity to water on a mixture using either basalt or granite aggregate indicate satisfactory performance.

4.3 Torque bond test data relating to Viatex 10 mm cores taken from Barrow Road, Sheffield was also examined. The result is given in Table 3.

Table 3 Test on the mixture using 50 pen bitumen, cellulose fibres and K1-40 bond coat

Test	Method	Mean result
Torque bond strength at 20±2°C on 100 mm diameter cores (kPa)	Appendix A.3 Guidelines Document	508

4.4 Texture depth measurements were made on installation of Viatex 10 mm. The results are given in Table 4.

Table 4 Texture depth measurements

Test	Method	Mean result ⁽¹⁾
Texture depth untrafficked (mm)	BS 598-105	1.1
after two years of trafficking (mm)		1.0

(1) Measurements carried out on Viatex 10 mm laid at a nominal thickness of 27 mm on the A639, a road of Stress Level 1 and estimated traffic level of 1630 cv/l/d.

5 Investigations

5.1 A user/specifier survey relating to existing sites that were at least two years old was carried out to confirm the system's performance in use.

5.2 The manufacturing process was examined by inspection of a typical coating plant, including the methods adopted for quality control, and details were confirmed of the quality and composition of materials used. The inspection confirmed that the plant operated in accordance with the requirements of the Quality Plan and Quality System agreed with the BBA.

Bibliography

BS 434-1 : 1984 *Bitumen road emulsions (anionic and cationic) — Specification for bitumen road emulsions*

BS 598-105 : 2000 *Sampling and examination of bituminous mixtures for roads and other paved areas — Methods of test for the determination of texture depth*

Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways, July 2004



On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'G. A. Cooper'.

Date of Second issue: 31st January 2006

Chief Executive

*Original Detail Sheet issued 8th August 2001. This revised version includes new Certificate holder's name, additional tack and bond coats, and reference to Performance Level 1.

Product



• THIS DETAIL SHEET RELATES TO THE VIAPAVE 10 mm AND 14 mm THIN SURFACING SYSTEMS FOR HIGHWAYS.

• The systems are for use as a thin surface course laid at nominal thicknesses between 18 mm and 30 mm for Viapave 10 mm, and 25 mm to 50 mm for Viapave 14 mm, covering the Classifications B and C defined in Table 1 of the Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways.

This Detail Sheet must be read in conjunction with the Front Sheets which give additional information on the HAPAS Requirements, Regulations and Conditions of Certification.

Technical Specification

1 Description

1.1 Viapave 10 mm and 14 mm Thin Surfacing Systems for Highways each comprise a mixture consisting of a blend of an approved polymer modified binder, limestone filler and graded fine and coarse aggregates.

1.2 The system is used in conjunction with either K1-40, K1-60 or K1-70 tack coat conforming to BS 434-1 : 1984, or Colbond 50 and 65, or Polybond 50 and 65 bond coats.

Design Data

2 General

2.1 Viapave 10 mm and 14 mm Thin Surfacing Systems for Highways are satisfactory for use as a thin surfacing system on highways.

2.2 The systems are suitable for use on existing bituminous or concrete surfaces at a minimum temperature of 0°C, measured on a rising thermometer, provided the substrate is free from standing water or ice and that the minimum specified rolling temperature can be maintained.

2.3 The systems, when manufactured and laid in accordance with the provisions of this Detail Sheet, can be designed to achieve the Performance Levels given in Table 1.

Table 1 Performance Levels achieved on trial installations

Test parameter	Performance Level achieved ⁽¹⁾	Requirement
Texture depth untrafficked (mm)	3	≥1.5
after two year trafficking (mm)		≥1.0
loss between first and second year (%)		≤40
Wheel tracking rate (mean/max individual) (mm h ⁻¹)	3	≤5.0/≤7.5
rut depth (mean/max individual) (mm)		≤7.0/≤10.5

(1) Performance Levels are defined in Appendix B of the Guidelines Document.

3 Durability

3.1 The systems have been used in the United Kingdom since 1996 and available evidence suggests that they will provide a durable surface course suitable for use on all classes of road.

3.2 A monitored installation leading to HA Type Approval, showed that Viapave 10 mm, when installed at a nominal thickness of 18 mm on a road of Stress Level 2⁽¹⁾, and estimated Traffic Level of 770 cv/l/d⁽²⁾, will meet Performance Level 3⁽³⁾ requirement for retained texture.

3.3 The results of this trial, when assessed in accordance with Appendix C of the Guidelines Document, indicate that Viapave 10 mm and 14 mm can be designed and laid to meet Performance Level 3⁽³⁾ for texture depths on sites with Traffic Levels of C_{max}:

Site Stress Level 1 and 2	>5000 cv/l/d ⁽²⁾
Site Stress Level 3	>2500 cv/l/d ⁽²⁾
Site Stress Level 4 ⁽⁴⁾	≤2500 cv/l/d ⁽²⁾

(1) Site Stress Levels are defined in Appendix C of the Guidelines Document.

(2) Traffic Levels (cv/l/d) are defined as commercial vehicles/lane/day.

(3) Performance Levels are defined in Appendix B of the Guidelines Document.

(4) TRL report limits the use of Viapave Stress Level 4 roads with a maximum traffic level of 2500 cv/l/d.

Technical Investigations

The following is a summary of the technical investigations carried out on the Viapave 10 mm and 14 mm Thin Surfacing Systems for Highways.

4 Tests

Mandatory laboratory and road tests

4.1 A series of tests was carried out on a Viapave 10 mm system laid on the B1393, Epping. The results of the tests are given in Tables 2 and 3.

Table 2 Mandatory laboratory tests carried out on the B1393, Epping installation trial or on laboratory-prepared samples of the same mixture recipe

Test	Method	Result	Performance Level
Coarse aggregate properties ⁽¹⁾			
PSV	BS 812-114	65	n/a
AAV	BS 812-113	8.9	n/a
Sensitivity to water retained stiffness (ITSM ₂₃) (%) ⁽¹⁾	Appendix A.2 draft Guidelines Document	94	n/a

(1) Retained indirect tensile stiffness modulus at 20±0.5°C after three water conditioning cycles carried out on laboratory-prepared samples.

n/a = Not applicable.

Table 3 Mandatory checks and tests carried out on the B1393, Epping installation

Test	Method	Mean result	Performance Level
Texture depth (sand patch) (mm)			
initial (untrafficked)	BS 598-105	1.8	≥1.50
after 28 months (trafficked)		1.4	≥1.20
Visual observations		Good uniform surface with no significant faults or abnormalities noted	

4.2 Wheel tracking test results from laboratory-prepared samples show that Viapave 10 mm and Viapave 14 mm can be designed to meet Performance Level 3 for rate of rutting and rut depth. Test results for Viapave 10 mm are given in Table 4.

Table 4 Wheel tracking with a mean thickness of 30 mm

Test	Method	Mean result	Performance Level
Wheel tracking at 60°C			
rate (mm h ⁻¹)	Appendix A.1 Guidelines Document	2.59	3
rut depth (mm)		3.88	

4.3 Torque bond test data relating to Viapave 10 mm cores taken from an installation on the A15 Sleaford to Lincoln is given in Table 5.

Table 5 Torque bond results for Viapave 10 mm using a K1-60 bond coat

Test	Method	Mean result
Torque bond strength at 20±2°C on 100 mm diameter cores (kPa)	Appendix A.3 Guidelines Document	1158 ⁽¹⁾

(1) Interface held.

4.4 Wheel tracking test data on laboratory-prepared samples, prepared at a depth of 50 mm, indicate that Performance Level 3 for wheel tracking can be maintained on Viapave 14 mm.

4.5 A series of additional tests was carried out on the Viapave system to evaluate the suitability of the various constituents proposed for use in the system. The results, when assessed in accordance with the Guidelines Document, showed that Performance Levels detailed in Tables 1 to 5 can be maintained.

5 Investigations

5.1 A user/specifier survey relating to existing sites that were at least two years old was carried out to confirm the products performance in use.

5.2 Viapave 10 mm and 14 mm share common aggregates and bond coats with Viatex 10 mm and 14 mm. Test data relating to Viatex 10 mm and 14 mm, where applicable, has been used as supporting evidence to complete the technical investigations on Viapave 10 mm and 14 mm.

Bibliography

BS 434-1 : 1984 *Bitumen road emulsions (anionic and cationic) — Specification for bitumen road emulsions*

BS 598-105 : 2000 *Sampling and examination of bituminous mixtures for roads and other paved areas — Methods of test for the determination of texture depth*

BS 812-113 : 1990 *Testing aggregates — Method for determination of aggregate abrasion (AAV)*

BS 812-114 : 1989 *Testing aggregates — Method for determination of the polished-stone value*

Guidelines Document for the Assessment and Certification of Thin Surfacing Systems for Highways, July 2004



On behalf of the British Board of Agrément

Date of Second issue: 31st January 2006

Chief Executive

**Original Detail Sheet issued 11th December 2002. This revised version includes new Certificate holder's name, increase in upper thickness and reference to additional tack and bond coats.*

Electronic Copy

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contact the Certificate holder (see
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Certificate, including validity and
scope, tel: Hotline 01923 665400,
or check the BBA website.