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HAPAS Certificate
15/H239
Product Sheet 1

VIAFIX PERMANENT COLD LAY SURFACING MATERIALS

VIAFIX 6 MM AND 10 MM

This HAPAS Certificate Product Sheet(1) is issued by the British Board of Agrément (BBA), supported by Highways England (HE) (acting on behalf of the Overseeing Organisations of the Department for Transport; Transport Scotland; the Welsh Government and the Department for Infrastructure, Northern Ireland), the Association of Directors of Environment, Economy, Planning and Transport (ADEPT), the Local Government Technical Advisers Group and industry bodies. HAPAS Certificates are normally each subject to a review every three years.
(1) Hereinafter referred to as 'Certificate'.

This Certificate relates to Viafix 6 mm and 10 mm for use as a permanent cold-lay surfacing material (PCSM) in any position in footways, footpaths, cycle tracks and as a permanent cold-lay surface course (PCSC) in Type 3 and 4 carriageways.

CERTIFICATION INCLUDES:

- factors relating to compliance with HAPAS requirements
- factors relating to compliance with Regulations where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Performance — the products meet the PCSM and PCSC requirements of the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials (PCSMs)* (see section 6).

Durability — the results of tests and an assessment of the products in-service performance indicates that they can be used as a first-time reinstatement of openings in footways, footpaths and cycle tracks (PCSM), and as a surface course in Type 3 and 4 carriageways (PCSC) (see section 8).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

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Requirements

In the opinion of the BBA, Viafix 6 mm and 10 mm, when assessed in accordance with the *Guideline for the Approval and Certification of Permanent Cold-Lay Surface Materials (PCSMs)* and used in accordance with the provisions of this Certificate, are suitable for use as a permanent cold-lay surface course (PCSC) in footways, foot paths and cycle tracks and as a surface course in Type 3 and 4 carriageways as defined in the *New Roads and Street Works Act 1991 : Specification for the Reinstatement for Openings in Highways*.

Regulations

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.1, 3.2 and 3.5) of this Certificate.

Technical Specification

1 Description

1.1 Viafix 6 mm and 10 mm are bituminous, permanent cold-lay surfacing materials (PCSM) consisting of basalt and granite coarse aggregate, sand fines and Vialit Reactive Binder.

1.2 Vialit Reactive Binder comprises penetration bitumen and bio-derived oils, with proprietary modifiers and reactive agents. Vialit Reactive Binder does not contain solvents.

1.3 The production process is controlled in accordance with a Quality Plan agreed by the BBA. Quality control checks are carried out on the incoming materials, during production and on the finished products.

1.4 Ancillary items used with the products include:

- Vialit Reactive Primer — for preparing concrete and asphalt substrates, and joint preparation
- bitumen emulsions conforming to BS EN 13808 : 2013 — base preparation on concrete or asphalt substrates.

2 Manufacture

2.1 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control being operated by the manufacturer are being maintained.

2.2 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001: 2015 by the Certification body of TUV SUD Landesgesellschaft Osterreich GmbH (Certificate Q1530231).

3 Delivery and site handling

3.1 The products can be supplied pre-packaged, ready to use, or in a two-pack format for mixing on-site. Details as given in Table 1.

Table 1 Packaging details

Product type		Package type	Weight per item (kg)	Quantity per pallet
Pre-packaged		Tubs	25	40
		Foil bags	14	72
Two-pack	Component A	Plastic bags	25	40
	Component B	Tubs	3	10

3.2 The products packaging is stamped with the products name and aggregate size (6 or 10 mm), weight, storage information, handling and usage instructions plus health and safety information. In addition, there is a batch number for traceability to the date of production.

3.3 Ancillary products used with Viafix 6 mm and 10 mm should be supplied and stored in accordance with the manufacturer's instructions.

3.4 The products will have a storage life of at least nine months, when stored in accordance with the manufacturer's instructions.

3.5 The Certificate holder has taken the responsibility of classifying and labelling the products under the *CLP Regulation (EC) No 1272 / 2008 on the classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s). Material Safety Data Sheets and COSHH risk assessments for the works should be deposited with the purchaser and be maintained on site.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Viafix 6 mm and 10 mm.

Design Considerations

4 Use

Viafix 6 mm and 10 mm are satisfactory for use as a PCSM and a PCSC in accordance with the *New Roads and Street Works Act 1991* : *Specification for the Reinstatement of Openings in Highways* (SROH), Fourth Edition, February 2019, Appendix A2.4.

5 Practicability of installation

The products are designed to be installed by a competent installer experienced with these types of products and approved by the Certificate holder.

6 Performance

The results of two-year performance trials and tests to determine the air voids content, resistance to permanent deformation and indirect stiffness modulus of Viafix 6 mm and 10 mm were satisfactory and comply with the requirements of the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials* (PCSMs), see section 12 of this Certificate and Table 2 for *Laboratory performance tests and requirements*.

7 Maintenance

The products are not subject to any routine maintenance requirements but any damage should be repaired (see section 9).

8 Durability

The products have been used in the UK since 2003. The results of two-year performance trials and a survey of users indicate that the products can be used as a PCSM, in any position, in all reinstatements in footways, footpaths, cycle tracks and as a PCSC in all reinstatements in Type 3 and 4 roads, in accordance with the SROH.

Installation

9 Preparation of the substrate

9.1 All surfaces to be repaired must be clean and free from loose material, oil, grease, standing water and any other contamination.

9.2 The substrate and vertical edges must be prepared in accordance with relevant requirements of the SROH.

10 Application

10.1 For the two-pack products, the method and process controls for on-site mixing are supplied with the individual components. The ratio of mixing is 100 kg of component A to 3 kg of component B or 4:1.

10.2 For both the pre-packaged and the two-pack version, sufficient Viafix must be placed in the opening allowing a 30% surcharge of material to take account of compaction.

10.3 Water can be applied to the compacted surface, or the pre-packaged material whilst still in the tubs. The water should be applied uniformly at a rate of between 0.5–1.0 litre per 25 kg.

10.4 The material is then compacted to the surrounding level using a suitable compactor/roller in accordance with the Certificate holder's instructions, Section S10 and Appendix A8, Compaction Requirements of the SROH.

Technical Investigations

11 Tests

11.1 Laboratory performance tests were carried out on the products in accordance with the requirements of the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials (PCSMs)*. The results were satisfactory, see Table 2.

Table 2 Laboratory performance tests and requirements

Test	Requirements	Method
Air voids content (%)(1)		
carriageway and footway	2–10	
footway, footpath and cycle track	2–12	
Elastic stiffness at 20°C (MPa)(2)		
10 mm	880	Guideline Document (Table A.1)
6 mm	660	
Resistance to permanent deformation(3) at 30°C (microstrain)		
10 mm	<20000	
6 mm	<20000	

(1) Measurements recorded on cores removed and tested at six months.
(2) 160/220 Pen hot laid equivalence.
(3) 3600 load applications.

Approval trials

11.2 A two-year performance trial using the products with basalt and granite aggregate in Type 3 and 4 carriageways was conducted. Visual and surface profile assessments of the surface were made in accordance with the Guideline Document, Table A.2, and reported as satisfactory.

12 Investigations

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

12.2 Supporting results for wheel tracking were supplied by the manufacturer. The results are listed in Tables 3 and 4.

Table 3 Wheel tracking results for 10 mm Viafix (from two-year performance trial)

Test	Mean results		Method
	45°C	60°C	
Wheel tracking			BS 598-110
rate (mm h^{-1})	0.3(1)	0.5(2)	
rut depth (mm)	1.9	2.6	

(1) Two cores tested. Mean depth of cores = 55 mm.
(2) Two cores tested. Mean depth of cores = 56 mm.

Table 4 Wheel tracking results for 10 mm Viafix at 3, 10 and 19 days

Test	Mean results(1)			Method
	3	10	19	
Wheel tracking at 60°C				BS EN 12697-22(2)
WTS_{Air} (mm/1000 cycles)	0.37	0.06	0.05	
rut depth (mm)	4.8	1.7	2.3	

(1) Four cores tested. Mean depth of all cores tested = 59 mm.
(2) Small device procedure B.

Bibliography

BS 598-110 : 1998 *Sampling and examination of bituminous mixtures for roads and other paved areas— Methods of test for the determination of wheel-tracking rate and depth*

BS EN 12697-22 : 2003 *Bituminous mixtures — Test methods for hot mix asphalt — Wheel tracking*

BS EN 13808 : 2013 *Bitumen and bituminous binders — Framework for specifying cationic bituminous emulsions*

Guideline for the Approval and Certification of Permanent Cold-lay Surfacing Materials (PCSMs), September 2010

New Roads and Street Works Act 1991 Specification for the Reinstatement of Openings in Highways : Code of Practice, Third Edition (England), April 2010

13 Conditions

13.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

13.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

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

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

13.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

13.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

13.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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