

VIALIT PERMANENT COLD LAY SURFACING MATERIALS

REPHALT 6 MM AND 10 MM

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

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Rephalt 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.

AGRÉMENT 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 five-yearly review.



KEY FACTORS ASSESSED

Performance — the product meets the PCSM and PCSC requirements of the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials PCSM's* (see section 5).

Durability — the results of tests and an assessment of the product in-service performance indicates that it 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 7).

The BBA has awarded this Agrément Certificate to the company named above for the product described herein. The product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément



Date of Second issue: 20 December 2010

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Greg Cooper

Originally certificated on 13 August 2009

Head of Approvals — Materials

Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

HAPAS Requirements

Requirements

The Highways Technical Advisory Committee (HiTAC) has agreed with the BBA the aspects of performance to be used by them in assessing the compliance of Permanent Cold-Lay Surfacing Materials with the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials (PCSMs)*.

In the opinion of the BBA, Rephalt 6 mm and 10 mm, when manufactured and laid in accordance with the provisions of this Certificate, will meet the relevant performance requirements.

Regulations

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 2 *Delivery and site handling* (2.1 to 2.5) of this Certificate.

Technical Specification

1 Description

1.1 Rephalt 6 mm and 10 mm are bituminous, cold-lay surfacing materials consisting of basalt and granite coarse aggregate, sand fines and Vialit reactive binder.

1.2 Vialit reactive binder comprises penetration bitumen and biological 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 product.

1.4 Ancillary items used with the product include:

- Vialit Reactive Primer — for preparing concrete and asphalt substrates, and joint preparation
- bitumen emulsions conforming to BS EN 13808 : 2005 – base preparation on concrete or asphalt substrates.

2 Delivery and site handling

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

Product type	Package type	Weight per item (kg)	Quantity per pallet
Pre-packaged	Tubs	25	24, 32
	Foil bags	14	72
Two-pack	Component A Plastic bags	20, 25	50, 40
	Component B Tubs	3	10

2.2 The product packaging is stamped with the product name and aggregate size (6 mm 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.

2.3 Ancillary products used with Rephalt will be supplied and stored in accordance with the manufacturer's instructions.

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

2.5 The product components are not classified under *The Chemicals (Hazard information and Packaging for Supply) Regulations 2009* (CHIP4) and should be handled in accordance with the manufacturer's Material Safety Data Sheets. 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 Rephalt 6 mm and 10 mm.

Design Considerations

3 Use

Rephalt 6 mm and 10 mm are satisfactory for use as a PCSM and a PCSC in accordance with Appendix A2.4 of the *New Roads and Street Works Act 1991 : Specification for the Reinstatement of Openings in Highways (SROH)*, Third Edition, April 2010.

4 Practicability of installation

The product is designed to be installed by a competent installer experienced with this type of product.

5 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 Rephalt 6 mm and 10 mm were satisfactory and complies with the requirements of the *Guideline for the Approval and Certification of Permanent Cold-Lay Surfacing Materials (PCSMs)*, see section 11 of this Certificate and Table 2 for *Laboratory performance tests and requirements*.

6 Maintenance

The product is not subject to any routine maintenance requirements but any damage should be repaired (see section 8).

7 Durability

The product has been used in the UK since 2003. The results of two-year performance trials and a survey of users indicate that the product 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

8 General

Rephalt 6 mm and 10 mm must be installed and repaired in accordance with the manufacturer's instructions, this Certificate and the relevant requirements of the SROH.

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 product, 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 for the 25 kg and 5:1 for the 20 kg bags.

10.2 For both the pre-packaged and the two-pack version, sufficient Rephalt 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 system 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⁾		Guideline document (Table A.1)
carriageway and footway	2-10	
footway, footpath and cycle track	2-12	
Elastic stiffness at 20°C (MPa) ⁽²⁾		
10 mm	880	
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 product 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 requirements, Table A.2, and reported as satisfactory.

12 Investigations

12.1 The manufacturing process for the product was assessed including the methods adopted for quality control. Details were obtained of the quality and composition of materials used.

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

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

Test	Mean results		Method
	45°C	60°C	
Wheel tracking rate (mm h ⁻¹)	0.3 ⁽¹⁾	0.5 ⁽²⁾	BS 598-110
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 Rephalt 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.

Additional Information

Österreichische Vialit Gesellschaft mbH, named Vialit Asphalt GmbH & Co KG has been assessed and registered as meeting the requirements of ISO 9001 : 2008 by TÜV Landesgesellschaft Österreich GmbH, Certificate No Q1530231.

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 : 2005 *Bitumen and bituminous binders — Framework for specifying cationic bituminous emulsions*
- ISO 9001 : 2008 *Quality management systems — Requirements*
- 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 granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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 and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

13.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.
- remain in accordance with the requirements of Highways Authorities' Product Approval Scheme.

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

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

13.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does 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; 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. 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 manufacture, supply, installation, use and maintenance of this product/system.