

HAPAS

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HAPAS Certificate

04/H091

Product Sheet 6 Issue 1

TUFFPAVE THIN SURFACING SYSTEMS FOR HIGHWAYS

ERA 140 TUFFPAVE 6 MM

This Product Sheet⁽¹⁾ is issued by the British Board of Agrément (BBA). The Highways Authorities Product Approval Scheme (HAPAS) is supported by National Highways (NH) (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.

(1) Hereinafter referred to as 'Certificate'.

This Certificate relates to ERA 140 Tuffpave 6 mm, a warm mix asphalt (WMA) for use as a surface course on new and maintenance road construction, in accordance with the *Manual of Contract Documents for Highway Works (MCHW)*, Volumes 1 *Specification for Highway Works (SHW)*, Series 900, Clauses 908 and 942.



The BBA has awarded this Certificate to the company named above for the system described herein. This system has been assessed as complying with the requirements of the BBA HAPAS Certification Scheme according to the assessments set out in this Certificate.

On behalf of the British Board of Agrément

Date of issue: 28 November 2023

Hardy Giesler
Chief Executive Officer

Certificate amended on 4 December 2023 to change front page picture and to add BBA contact details.

This BBA HAPAS Certificate is issued under the BBA's accreditation to ISO/IEC 17065 (UKAS accredited Certification Body Number 0113).

Clauses marked † are additional information outside the scope of accreditation.

Readers MUST check the validity and latest issue number of this BBA HAPAS Certificate by referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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1 Product Description

1.1 The Certificate holder specifies the system under assessment, ERA 140 Tuffpave 6 mm, as a WMA in accordance with BS EN 13108-1 : 2006, consisting of a proprietary polymer modified bitumen to BS EN 14023 : 2010, filler, and fine and coarse aggregates to BS EN 13043 : 2002. The system is for use as thin surface course system in accordance with the requirements of the MCHW⁽¹⁾, Volume 1 SHW, Series 900, Clauses 908 and 942, for a high-speed road and roundabouts on lower-speed roads.

(1) The MCHW is operated by National Highways (NH) (acting on behalf of the Overseeing Organisations of the Department for Transport; Transport Scotland; the Welsh Government and the Department for Infrastructure, Northern Ireland).

1.2 The system is used in conjunction with a spray-applied, bitumen emulsion conforming to BS EN 13808 : 2013, or a proprietary bond coat.

1.3 The following ancillary items are essential to use with the system and have been assessed with the system:

- a binder additive that allows manufacture and installation at lower temperatures according to the MCHW, Volume 1, Series 900, Clause 908, Tables 9/1A and 9/1C respectively.

2 Requirements

Requirements for the system are outlined in the BBA HAPAS Certification Scheme and Technical Specifications Documents, and have been established from the following specification documents:

- the MCHW, Volume 1, Series 900, Clauses 908 and 942.
- the *Design Manual for Roads and Bridges* (DMRB⁽¹⁾)
 - CD 227 *Design for Pavement Maintenance*
 - CD 236 *Surface Course Materials for Construction*
- PD 6691 : 2022 *Guidance on the use of BS EN 13108, Bituminous mixtures — Material specifications*.

(1) The DMRB is operated by the Overseeing Organisations: National Highways (NH), Transport Scotland, the Welsh Government and the Department for Infrastructure (Northern Ireland).

3 Summary of Product Assessment

The system was assessed on the basis of the following characteristics in accordance with HAPAS requirements.

3.1 Physical properties

Table 1 Physical properties

Product assessed	Assessment method	Requirement	Outcome
ERA 140 Tuffpave 6 mm	Visual inspection (SiPT)	Good or Excellent at opening to traffic Good or Excellent 12 months after opening to traffic Good or Excellent 24 months after opening to traffic	Pass
	Bond to substrate to the MCHW, Volume 1, Series 900, clause 951	≥ 400 kPa	Pass
	Resistance to permanent deformation (WTS _{AIR}) to BS EN 12697-22 : 2020	PD 6691 : 2022, Table B.4	Pass
	Sensitivity to water (ITSR _{MIN}) to BS EN 12697-12 : 2018 (Method A)	The MCHW, Volume 1, Series 900, Clauses 908, Table 9/1B ≥ 80	Pass
	Initial Surface macrotexture depth - Upper (D) aggregate size of 6 mm to BS EN 13036-1 : 2010	The MCHW, Volume 1, Series 900, Clause 942, Table 9/12 1.0 – 1.5 mm	Pass
	Surface macrotexture depth - trafficked - Upper (D) aggregate size of 6 mm to BS EN 13036-1 : 2010	The MCHW, Volume 1, Series 900, Clause 942, Table 9/14 > 0.7 mm	Pass

The assessment showed that the system complies with HAPAS requirements for these characteristics.

3.2 Durability

When installed in accordance with this Certificate, the system will provide a durable surface course for new and maintenance road construction, in accordance with the MCHW, Volume 1 SHW, Series 900, Clauses 942.19 and 942.20, and Table 9/12 for high-speed roads and roundabouts on lower-speed roads.

4 Summary of Process Assessment

Manufacturing process and quality control	Complies with HAPAS requirements
Delivery and site handling	Complies with HAPAS requirements
Installation	Complies with HAPAS requirements

4.1 Manufacture

4.1.1 The BBA has undertaken the following tasks for the assessment of system manufacture and has established that the manufacture complies with BBA HAPAS Certification Scheme requirements:

- the BBA has recorded and evaluated the manufacturer's documentation of the methods adopted for quality control procedures and system testing against HAPAS requirements
- the BBA has assessed the quality control operated over batches of incoming materials and formulations against HAPAS Requirements
- the BBA has evaluated the process for management of non-conforming work
- the BBA has audited the production process and verified that it is in accordance with the documented process
- the BBA has checked that equipment has been properly tested and calibrated.

4.1.2 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

† 4.1.3 The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by CPC (Certificate CP/00189).

4.2 Delivery and site handling

† 4.2.1 The Certificate holder states that the system is delivered to site in bulk in insulated vehicles, bond coats may be delivered to site either in bulk by tanker or in 205 litre drums.

4.3 Design

4.3.1 ERA 140 Tuffpave 6 mm can be designed to satisfy or contribute to satisfying the relevant requirements of the MCHW, Volume 1 SHW, Series 900, Clauses 908 and 942 for WMA and high-speed roads and roundabouts on lower-speed roads respectively.

4.3.2 The system is satisfactory for use on bituminous or concrete substrates, provided they are stable and have sufficient loadbearing strength to support the loads imposed during installation and service.

4.3.3 Guidance on evaluating the condition of an existing surface is provided in the DMRB, CD 227 *Design for Pavement Maintenance*, Revision 0 (03/20).

4.3.4 Guidance on appropriate surfacing selection is provided in the DMRB, CD 236 *Surface Course Materials for Construction*, Revision 4.1.0 (12/22).

4.4 Installation

4.4.1 The Certificate holder's instructions for installation of the system were confirmed as meeting the BBA HAPAS Certification Scheme requirements.

4.4.2 To achieve the performance described in this Certificate, the system must be installed in accordance with the Certificate holder's installation procedures, BS 594987 : 2015, the MCHW, Volume 1, Series 900, Clause 908.8 for WMA, and this Certificate.

4.4.3 To achieve the performance described in this Certificate, the system must be applied to bituminous or concrete substrates at a nominal layer thickness of between 25 and 40 mm in depth on roads installed in accordance with the MCHW, Volume 1 SHW, Series 900, Clause 942, Table 9/11.

4.4.4 The substrate must be prepared in accordance with BS 594987 : 2015, Section 5.

4.4.5 Application of the polymer modified bitumen emulsion bond coat must ensure a minimum residual binder content of $0.35 \text{ kg}\cdot\text{m}^{-2}$.

4.4.6 For small areas and detailing, bitumen emulsion tack coat can be applied by appropriate hand-held equipment, to leave a uniform coating.

4.4.7 The emulsion must be allowed to break (change from brown to black) prior to the application of the system.

4.4.8 Machine and hand installation must follow the requirements of BS 594987 : 2015, Sections 6.3, 6.4 and 6.7.

4.4.9 Compaction must follow the requirements of BS 594987 : 2015, Sections 9.2 and 9.3 and the Certificate holder's installation method statement.

4.4.10 The minimum rolling temperature immediately prior to rolling is 100°C.

4.4.11 The substrate must be free from standing water or ice and the minimum rolling temperature must be observed. The systems must not be installed below the minimum ambient temperature of 0°C measured on a rising thermometer.

4.4.12 All joints must be prepared in accordance with the requirements of the MCHW, Volume 1, Series 900, Clauses 903.21 to 903.25, BS 594987 : 2015, Sections 6.8.1 and 6.8.2, and the Certificate holder's installation method statement.

4.4.13 To achieve the performance described in this Certificate, Installation of the system must be carried out by operatives approved by the Certificate holder.

4.5 Maintenance

4.5.1 The Certificate holder advises that the system is not subject to any routine maintenance requirements. However, any damage must be repaired.

4.5.2 Any damaged areas must be cut back to sound material by planing or other suitable means and replaced with a material appropriate to the location, traffic and area of re-statement. Materials must be selected in agreement with the Certificate holder and the purchaser.

5 Fulfilment of Requirements

5.1 The conclusion of this BBA assessment is that ERA 140 Tuffpave 6 mm, when used in accordance with the provisions of this Certificate complies with the BBA HAPAS Certification Scheme requirements.

5.2 In order for the system to continue to meet Scheme requirements, it must be installed, used and maintained as per the manufacturer's instructions and as detailed in the Certificate.

6 Validity of Certificate

Continuing validity of this Certificate is dependent on the following factors:

- continuing compliance with system or process requirements, as described in the HAPAS Scheme document, and the specification documents referred to therein
- ongoing BBA surveillance of factory production control, to verify that the specifications and quality control being operated by the manufacturer are being maintained
- formal triennial Review of the Certificate, and if required, Reissue for required technical or non-technical updates
- compliance with ongoing Certificate obligations by the Certificate holder and manufacturer(s).

† 7 Additional 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.

CLP Regulations

The Certificate holder has taken the responsibility for classifying and labelling the system components under the *GB CLP Regulations* and the *CLP Regulation (EC) No 1272/2008 - Classification and Labelling and Packaging of Substances and Mixtures*. Users must refer to the relevant Safety Data Sheet(s).

UKCA marking

The Certificate holder has taken the responsibility of UKCA marking the system in accordance with Designated Standard EN 13108-1 : 2006.

8 Bibliography

BS 594987 : 2015 + A1 : 2017 *Asphalt for roads and other paved areas — Specification for transport, laying, compaction and product type testing protocols*

BS EN 12697-12 : 2018 *Bituminous mixtures — Test methods for hot mix asphalt — Determination of the water sensitivity of bituminous specimens*

BS EN 12697-22 : 2020 *Bituminous mixtures — Test methods for hot mix asphalt — Wheel tracking*

BS EN 13036-1 : 2010 *Road and airfield surface characteristics — Test methods — Measurement of pavement surface macrotexture depth using a volumetric patch technique*

BS EN 13043 : 2002 *Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas*

BS EN 13108-1 : 2006 *Bituminous mixtures — Material specifications — Asphalt Concrete*

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

BS EN 14023 : 2010 *Bitumen and bituminous binders. Specification framework for polymer modified bitumens*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

CD 227 *Design Manual for Roads and Bridges : Design for Pavement Maintenance, Revision 0, (03/20)*

CD 236 *Design Manual for Roads and Bridges : Surface course materials for construction, Revision 4.1.0, (12/22)*

Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 900 Road pavements — bituminous bound materials (07/21)

PD 6691 : 2022 *Guidance on the use of BS EN 13108, Bituminous mixtures — Material specifications*

9 Conditions of Certification

9.1 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.

9.2 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.

9.3 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.

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

9.5 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 UKCA marking and CE marking.

9.6 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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