

## Tarmac Trading Ltd

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### Agrément Certificate

16/5376

Product Sheet 1 Issue 3

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## TARMAC TRADING GROUDED MACADAMS

### ULTICRETE HEAVY DUTY SURFACING

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Ulticrete Heavy Duty Surfacing, a grouted macadam surface course, for use as a heavy-duty industrial surfacing in locations such as warehouses, cargo handling areas, bus depots and airport hard standings and maintenance areas.

(1) Hereinafter referred to as 'Certificate'.

#### The assessment includes

##### Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

##### Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

##### Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



#### KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

The BBA has awarded this Certificate to the company named above for the product described herein. This 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 Third issue: 1 August 2024

Originally certified on 6 December 2016

Hardy Giesler  
Chief Executive Officer

*This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.*

*The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).*

*Readers MUST check that this is the latest issue of this Agrément Certificate by either 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.*

#### British Board of Agrément

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## SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

### Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Ulticrete Heavy Duty Surfacing, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



#### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>B5(2)</b>	<b>Access and facilities for the fire service</b>
<b>Requirement:</b>	<b>H6(2)</b>	<b>Solid waste storage</b>
<b>Requirement:</b>	<b>M1</b>	<b>Access and use</b>
<b>Requirement:</b>	<b>M2</b>	<b>Access to extensions to buildings other than dwellings</b>
<b>Comment:</b>		The product will contribute to satisfying these Requirements. See section 1 of this Certificate.
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship</b>
<b>Comment:</b>		The product is acceptable. See sections 8 and 9 of this Certificate.



#### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)(2)</b>	<b>Fitness and durability of materials and workmanship</b>
<b>Comment:</b>		The product is acceptable. See sections 8 and 9 of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards - construction</b>
<b>Standard:</b>	<b>2.12</b>	<b>Fire and rescue service access</b>
<b>Comment:</b>		The product will contribute to satisfying this Standard, with reference to clauses 2.12.0 <sup>(1)(2)</sup> , 2.12.2 <sup>(1)(2)</sup> and 2.12.3 <sup>(1)(2)</sup> . See section 1 of this Certificate.
<b>Standard:</b>	<b>3.25</b>	<b>Solid waste storage</b>
<b>Comment:</b>		The product will contribute to satisfying this Standard, with reference to clauses 3.25.1 <sup>(1)</sup> and 3.25.3 <sup>(1)</sup> . See section 1 of this Certificate.
<b>Standard:</b>	<b>4.1</b>	<b>Access to Buildings</b>
<b>Comment:</b>		The product will contribute to satisfying this Standard, with reference to clause 4.1.4 <sup>(1)(2)</sup> . See section 1 of this Certificate.
<b>Regulation:</b>	<b>12</b>	<b>Building standards - conversion</b>
<b>Comment:</b>		All comments given for the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).  
(2) Technical Handbook (Non-Domestic).



#### The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(1)(a)(i)(ii)</b>	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>	<b>(iii)(iv)(b)(i)</b>	The product is acceptable. See sections 8 and 9 of this Certificate.

<b>Regulation:</b>	<b>37</b>	<b>Facilities and access for the Fire and Rescue Service</b>
<b>Regulation:</b>	<b>62</b>	<b>Solid waste storage</b>
<b>Regulation:</b>	<b>91</b>	<b>Access and use</b>
<b>Regulation:</b>	<b>92</b>	<b>Access to extensions</b>
<b>Comment:</b>		The product will contribute to satisfying these Regulations. See section 1 of this Certificate.

## Fulfilment of Requirements

The BBA has judged Ulticrete Heavy Duty Surfacing to be satisfactory for use as described in this Certificate. The product has been assessed as a grouted macadam surface course, for use as a heavy-duty industrial surfacing in locations such as warehouses, cargo handling areas, bus depots and airport hard standings and maintenance areas.

## ASSESSMENT

### Product description and intended use

The Certificate holder provided the following description for the product under assessment. Ulticrete Heavy Duty Surfacing consists of:

- a 0/10 mm open-graded surface course asphalt support layer comprising a penetration-grade bitumen to BS EN 12591 : 2009.
- coarse and fine aggregates to BS EN 13043 : 2002 graded to give a controlled proportion of air voids to accommodate the proprietary cementitious grout
- a grout that comprising a proprietary grout powder consisting of Portland cement, plasticisers and fine mineral aggregate mixed with potable water.

#### Ancillary Items

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

- a machine-applied polymer-modified bond coat conforming to BS EN 13808 : 2013 to reduce water ingress and enhance adhesion to the substrate.
- Tack coat C40B4 to BS EN 13808 : 2013 that can be hand applied by lance where machine spraying is not possible.

#### Applications

The product can be applied to a bituminous or concrete substrate provided the underlying layers of the pavement are stable and have sufficient load-spreading capabilities to support the imposed loading of the surface course during the installation and expected service life.

Construction joints are not required for the product. However, where it is laid over an existing concrete surface, any existing joints must be retained in the new surface to reduce the likelihood of reflective cracking.

The choice of aggregate type will depend on site-specific details, including location and contractual requirements for polished stone value (PSV), texture depth and other properties.

## Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessment is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

### 1 Mechanical resistance and stability

Data were assessed for the following characteristics.

#### 1.1 Strength and stability

1.1.1 The result of strength and stability tests are given in Table 1.

*Table 1 Strength and stability*

Product assessed	Assessment method	Requirement	Result
Ulticrete Heavy Duty Surfacing	Wheel tracking to BBA SG3 Appendix A1 at 60°C	Value achieved to PD 6691 : 2022, Table D2	Class 2
	Torque bond strength at 20°C (kPa) to BBA SG3 Appendix A3	≥200 kPa	Pass
	Initial texture depth to BS EN 13036-1 : 2010	Value achieved	0.6 mm

1.1.2 On the basis of data assessed, the product is able to sustain the abrasion and loading likely to be encountered in service and is suitable for heavily stressed sites requiring very high rut resistance.

### 2 Safety in case of fire

Not applicable.

### 3 Hygiene, health and the environment

Not applicable.

### 4 Safety and accessibility in use

Data were assessed for the following characteristics.

4.1.1 The result of a skid resistance test is given in Table 2.

*Table 2 Skid resistance*

Product assessed	Assessment method	Requirement	Result
Ulticrete Heavy Duty Surfacing	Initial skid resistance to BS EN 13036-4 : 2011	Value achieved	56

4.1.2 On the basis of data assessed the product has satisfactory skid resistance.

### 5 Protection against noise

Not applicable.

### 6 Energy economy and heat retention

Not applicable.

### 7 Sustainable use of natural resources

Not applicable.

## 8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

8.2 Specific test data were assessed as given in Table 3.

Product assessed	Assessment method	Requirement	Outcome
Ulticrete Heavy	Retained texture depth to BS EN 13036-1 : 2010	Value achieved	0.5 mm
Duty Surfacing	Torque bond strength at 20°C (kPa) to BBA SG3	≥200 kPa	Pass
Appendix A3			
	Erosion index at 45°C after scuffing to TRL Report 176		
	control	0	Pass
	after diesel immersion	≤3	Pass
	after freeze/thaw	≤3	Pass
	Compressive strength to EN 196-1 : 2005	Value achieved	76.3 N·mm <sup>2</sup>
	Flexural strength to EN 196-1 : 2005	Value achieved	11.5 N·mm <sup>2</sup>
	Indirect Tensile Stiffness Modulus (ITSM) to BS EN 12697-26 : 2018	Value achieved	103%

8.2.1 A visual inspection was made of existing sites, which confirmed satisfactory performance in service.

### 8.3 Service life

Under normal service conditions, the product will have a service life in excess of conventional asphalt surfacing, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

## PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

## 9 Design, installation, workmanship and maintenance

### 9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance specified in this Certificate.

9.1.2 The product does not require expansion joints and can accommodate the limited movement to be expected in a flexible pavement construction.

9.1.3 Where abnormal chemical spillage is expected, the advice of the Certificate holder must be sought, but such advice is outside the scope of this Certificate.

### 9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions.

9.2.3 To achieve the performance declared in the Certificate, the system must be installed only by the Certificate holder.

9.2.4 The Ulticrete 0/10 mm asphalt support layer is installed in accordance with the Certificate holder's installation guide, incorporating requirements for the transport, laying and compaction of asphalt mixtures as described in BS 594987 : 2015.

9.2.4.1 A polymer-modified bond coat must be applied at a minimum target rate of spread for bond coats of not less than  $0.2 \text{ kg}\cdot\text{m}^{-2}$  of residual binder on newly laid asphalt and  $0.35 \text{ kg}\cdot\text{m}^{-2}$  on planed, milled and existing asphalt and concrete substrates.

9.2.4.2 The asphalt support layer must be applied at a nominal target layer thickness of 40 mm. The minimum compacted thickness at any point is 30 mm and the maximum is 50 mm.

9.2.4.3 The asphalt support layer must not be laid in ambient temperatures below  $5^{\circ}\text{C}$  on a falling thermometer, or if standing water, ice or snow is present

9.2.4.4 Construction joints are not required for the system. However, where it is laid over an existing concrete surface, any existing joints must be retained in the new surface to reduce the possibility of reflective cracking.

9.2.4.5 Cut joints must not be painted.

9.2.4.6 The rolling temperature should be between  $135$  and  $160^{\circ}\text{C}$ .

9.2.4.7 The asphalt support layer must not be opened to traffic prior to the application of the grout.

9.2.4.8 The grout is applied by the Certificate holder in accordance with their installation guide, which includes recommendations for:

- spread rates of the grout
- limiting weather conditions
- compaction
- support coat requirements.

9.2.4.9 The grout can be mixed on-site using a combined mixer/pump unit, or off-site supplied in bulk and discharged through a tanker.

9.2.4.10 The grout must not be applied in ambient temperatures below  $5^{\circ}\text{C}$  on a falling thermometer, or less than  $3^{\circ}\text{C}$  on a rising thermometer. If the ambient temperature is forecast to rise above  $25^{\circ}\text{C}$  or the asphalt support layer temperature is greater than  $27^{\circ}\text{C}$ , on-site technical support is required to control flow and viscosity.

9.2.4.11 The grout can only be applied when the asphalt support layer has been compacted and has cooled to a maximum temperature of  $30^{\circ}\text{C}$ .

9.2.4.12 The grout is applied to the asphalt support layer and spread with brooms and squeegees. Grout movement through the receiving course is aided by pooling the grout on the surface and allowing a head of pressure, forcing the material into the receiving course.

9.2.4.13 Penetration of the grout is achieved by adding grout until surface voids are no longer visible and air bubbles have stopped rising to the surface. The receiving course is deemed to be fully penetrated when no further grout can be forced into the voids and surplus grout remains on the surface.

9.2.4.14 The grout spread rate is calculated by measuring the square metre coverage versus the tonnage of grout.

9.2.4.15 The curing time for the grout varies with ambient conditions, but the following minimum periods before use by different types of traffic must be observed:

- pedestrians — 7 hours
- cars and light traffic — 24 hours
- lorries, standing loads, possibility of oil spillage — 48 hours.

9.2.4.16 Where exceptional loads (eg point loading from trailer jockey wheels or stands) or chemical spillage are expected, longer curing periods may be necessary. The Certificate holder's advice must be sought in these situations, but such advice is outside of the scope of this Certificate.

### 9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information and a site visit to witness an installation in progress. To achieve the performance described in this Certificate, installation of the Ultracrete Heavy Duty Surfacing must be carried out by the Certificate holder.

### 9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 Where conditions are very severe (eg areas where steel-wheeled or tracked vehicles regularly turn or reverse), localised damage may take place. This must be repaired promptly by patching, under the guidance of the Certificate holder.

9.4.2.2 Where major damage has occurred, the damaged area is removed by planing to the full depth of the affected layer. The planed area is reinstated using material to the same specification, unless otherwise agreed with the purchaser, using the procedures identified in section 9.2.

9.4.2.3 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.

## **10 Manufacture**

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 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.

## **11 Delivery and site handling**

11.1 The Certificate holder stated that the asphalt support layer is delivered to site in bulk.

11.2 The grout is delivered premixed in 25 kg sacks and must be stored in a dry location at temperatures below 25°C or in bulk in IBCs for decanting on-site.

11.3 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate.

## ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

### 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 of classifying and labelling the product and/or components under the *GB CLP Regulation* and *CLP Regulation (EC) No 1272/2008 - classification, labelling and packaging of substances and mixtures*. Users must refer to the relevant Safety Data Sheet(s).

### Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI (Certificate FM 503516).



## Bibliography

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

BS EN 12591 : 2009 *Bitumen and bituminous binders — Specifications for paving grade bitumens*

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

BS EN 13036-4 : 2011 *Road and airfield surface characteristics — Test methods — Method for measurement of slip/skid resistance of a surface — The pendulum test*

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

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

BS EN 12697-26 : 2018 *Bituminous mixtures — Test methods — Stiffness*

EN 196-1 : 2005 *Methods of testing cement — Determination of strength*

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

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

TRL Report 176 : 1997 *Laboratory tests on high-friction surfaces for highways*

BBA Guideline document for the assessment of thin surfacing systems for highways

## Conditions of Certificate

### Conditions

1 This Certificate:

- relates only to the product 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.

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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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