

HAPAS

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HAPAS Certificate

11/H171

Product Sheet 1

INSTARMAC POTHOLE REPAIR PRODUCT FOR HIGHWAYS

ULTRACRETE PPR

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 Ultracrete PPR, used for the repair of potholes and other similar defects found within bituminous surfaces on non-trafficked and trafficked highways.

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

Surface characteristics — the product has satisfactory surface texture and skid resistance properties (see section 6).

Mechanical resistance and bond strength — the product has satisfactory resistance to trafficking and loadings (see section 7).

Durability — the product is suitable to ensure a safe level repair of a bituminous surface as part of routine (planned) and reactive (unplanned) maintenance works (see section 9).



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: 12 February 2021

Originally certificated on 14 March 2011

Hardy Giesler
Chief Executive Officer

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

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

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Requirements

In the opinion of the BBA, Ultracrete PPR, when manufactured and installed in accordance with the provisions of this Certificate, will provide a satisfactory repair to the road surface.

Additional requirements of the overseeing organisations can be found in:

- *Potholes and Repair Techniques for local highways*, ADEPT, May 2010
- Design Manual for Roads and Bridges (DMRB), CM 231 - Pavement surface repairs.

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

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 and 3.5) of this Certificate.

Technical Specification

1 Description

1.1 Ultracrete PPR is a bituminous based, cold, hand-applied patch repair product, comprising 0/6 mm close graded granite aggregate and Ultracrete proprietary bitumen, a blend of penetration bitumen to BS EN 12591 : 2009, polymers and chemical additives.

1.2 Also for use with Ultracrete PPR is Ultracrete SCJ Seal and Tack, a spray-applied sealant for priming and sealing surfaces prior to installation.

2 Manufacture

2.1 The products are manufactured using conventional asphalt production methods.

2.2 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.

2.3 The management systems of Instarmac Group Plc have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by National Quality Assurance Ltd (Certificate 6987/1).

3 Delivery and site handling

3.1 The product is supplied in pre-packed, ready-to-use 25 kg polythene bags or plastic tubs. The packaging is stamped with the product name, coding traceable to the date of production, health and safety information and installation instructions.

3.2 Ultracrete SCJ Seal and Tack is supplied in 750 ml spray cans.

3.3 Ultracrete PPR and SCJ Spray and Tack must be stored in cool, well-ventilated, dry conditions, protected from frost and high temperatures.

3.4 When stored correctly in the sealed container, the product will have a storage life⁽¹⁾ of at least three months in bags or six months in plastic tubs.

(1) Information provided by the Certificate holder.

3.5 The Certificate holder has taken the responsibility of classifying and labelling the system components 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).

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ultracrete PPR.

Design Considerations

4 Use

4.1 Ultracrete PPR is satisfactory for use in minor routine or reactive repairs of potholes and other similar defects found in bituminous surfaces. Potholes are defined for the purpose of this Certificate as irregular shaped defects with a total area less than 1 m² and a depth greater than 15 mm. They are not continuous or whole width defects.

4.2 The product must only be installed where the adjacent surface has a texture depth and aggregate PSV and AAV less than or equivalent to Ultracrete PPR (see section 6).

4.3 The product will satisfactorily fill a single pothole. It will not delay or stop the deterioration of the adjacent surface.

5 Practicability of installation

The product is designed to be installed by operatives who have completed training provided by the Certificate holder.

6 Surface characteristics

6.1 An assessment of the surface characteristics on existing installations, and laboratory testing of raw materials, indicate that the product has the following properties:

- an initial texture depth of ≥ 1.1 mm
- an initial SRV of ≥ 88
- a PSV of aggregate ≥ 60
- an AAV of aggregate ≤ 5 .

6.2 The properties listed in section 6.1 should be compared to those of the existing adjacent surface to be repaired to ensure the product is compatible as detailed in section 4.2.

6.3 If the properties of the existing adjacent surface are unknown, Section S2 of the *New Roads and Street Works Act 1991 : Specification for the Reinstatement of Openings in Highways* (SROH) provides additional guidance on categorising Local Authority sites. For the motorway and trunk road network, additional guidance can be found within the relevant parts of MCHW, Volume 1 and the DMRB, CM 231 - *Pavement surface repairs*.

7 Mechanical resistance and bond strength

7.1 Results of visual inspections on new and existing sites and information received from users of the product confirm that they have satisfactory resistance to trafficking and satisfactory bond characteristics on sites classified as type 2, 3 and 4 as defined in the SROH.

7.2 In common with deferred set asphalts, the product may be susceptible to minor deformation, scuffing, marking, and de-bonding if used when a combination of the following apply:

- in areas of excessive turning, braking or static loads (eg within the wheel track)
- when air and road temperatures are high (typically greater than 20°C) immediately following installation
- when the complete depth of the repair is greater than 40 mm
- on sites classified higher than type 2 as defined in SROH
- where installation methods are other than best practice (see section 10).

7.3 An evaluation of the rate of cure of the product indicates that it is susceptible to scuffing and marking as identified in 7.2 but that this will reduce following installation. The rate of cure is dependent on the volume of traffic and ambient conditions.

8 Maintenance

The product is not subject to any routine maintenance requirements, but any damage should be repaired.

9 Durability

9.1 For planned routine maintenance work where best practice installation is followed (see section 10) and where the substrate and adjacent surface are generally sound, the product has suitable properties to remain in place for at least 12 months.

9.2 For reactive (immediate/emergency/unplanned) repairs with minimum preparation and installation (see section 11) the expected durability will be reduced.

Installation

10 General

10.1 To ensure that the optimum performance and durability is achieved, installation of Ultracrete PPR must follow best practice. For the purposes of this Certificate this is considered to be in accordance with either:

- BS 434-2 : 2006, Clause 13.2, or
- Design Manual for Roads and Bridges (DMRB), CM 231 - *Pavement surface repairs*.

10.2 Traffic management must be in accordance with the latest issue of the *Department for Transport Traffic Signs Manual*, Chapter 8, or as agreed between the overseeing organisation and the installer.

10.3 The product can be installed, compacted and trafficked immediately when air and road temperatures are between -5°C and 40°C.

11 Preparation of the road surface

Routine repairs

11.1 The area to be repaired should be marked out and the edges saw cut back to sound material. The prepared area should be regular in shape. For high-speed roads, BS 434-2 : 2006 recommends a diamond shape.

All repairs

11.2 All surfaces must be swept clean and be free from ice, loose material, oil, grease, and standing water or other contaminants that may affect the bond to the existing surface.

11.3 Ultracrete SCJ must be spray-applied to all the surfaces in accordance with the Certificate holder's instructions.

11.4 Reactive maintenance should be carried out in accordance with Figure 1.

Figure 1 Installation process



12 Laying and compaction — all repairs

12.1 The product must be applied in uniform lifts of between 15 and 40 mm, allowing approximately 50% surcharge per lift to allow for compaction.

12.2 The product must be fully compacted and finished level with the adjoining surface using suitable compaction equipment. Compaction must cease before migration of binder to the surface or crushing of aggregates is observed.

12.3 On completion, the installer should visually inspect the finished surface for uniformity and any discernible faults, and remedy if necessary.

Technical Investigations

13 Investigations

13.1 An assessment of test data was made relating to:

- wheel track rut rate and rut depth to BS 598-110 : 1998
- tensile bond strength to TRL Report 176, Appendix J
- air voids to BS EN 12697-8 :2018, Procedure B
- initial and retained texture depth to BS EN 13036-1 : 2010
- initial and retained SRV by pendulum to TRL Report 176, Appendix E
- PSV and AAV of aggregates to BS EN 1097-8 : 2020.

13.2 An installation trial was carried out to assess the practicability of the installation in accordance with the Certificate holder's instructions and best practice methods identified in section 10. The results of the trial concluded that the product can be satisfactorily installed and compacted.

13.3 A performance in use survey, site trials and visual inspections were carried out to assess the product's performance in service. The responses and results from the inspections confirmed that the expectation of users was being achieved, and that satisfactory performance on sites, representative of those identified in sections 6 and 9, were met.

13.4 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.

Bibliography

BS 434-2 : 2006 *Bitumen road emulsions — Code of practice for the use of cationic emulsions on roads and other paved areas*

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 1097-8 : 2020 *Tests for mechanical and physical properties of aggregates — Determination of the polished stone value*

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

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

BS EN 12697-8 : 2018 *Bituminous mixtures — Test methods- Determination of void characteristics of bituminous specimens*

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*

Design Manual for Roads and Bridges (DMRB) : *CM 231 - Pavement surface repairs*

New Roads and Street Works Act 1991 : Specification for the Reinstatement of Openings in Highways : Code of Practice Fourth Edition (England), (February 2019)

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

14 Conditions

14.1 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.

14.2 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.

14.3 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.

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

14.5 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.

14.6 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.