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Agrément Certificate
11/H171
Product Sheet 1

INSTARMAC POTHOLE REPAIR PRODUCT FOR HIGHWAYS

ULTRACRETE PPR

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

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

Surface characteristics — the product has satisfactory surface texture and skid resistance properties (see section 5).

Mechanical resistance and bond strength — the product has a satisfactory resistance to trafficking and loadings (see section 6).

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 8).

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

Simon Wroe
Head of Approvals — Materials

Greg Cooper
Chief Executive

Date of First issue: 14 March 2011

Certificate amended on 13 April 2011 with a change to DMRB and MCHW reference.

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 Ultracrete PPR. 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
- Manual of Contract Documents for Highway Works (MCHW)⁽¹⁾, Volume 1, *Specification for Highway Works*, Series 900, Clause 946
- DMRB, Volume 7.

(1) The MCHW is operated by the Overseeing Organisations: The Highways Agency (HA), Transport Scotland, The Welsh Assembly Government and The Department for Regional Development (Northern Ireland).

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, 2.2 and 2.5) 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
- Ultracrete proprietary bitumen, comprising a blend of penetration bitumen to BS EN 12591 : 2009, polymers and chemical additives.

1.2 The production process for Ultracrete PPR 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.

1.3 Ancillary products used with Ultracrete PPR include:

- Ultracrete SCJ Seal and Tack — spray-applied sealant for priming and sealing surfaces prior to installation.

2 Delivery and site handling

2.1 The product is supplied in pre-packed 25 kg plastic containers. The packaging is stamped with the product name, coding traceable to the date of production, health and safety information and installation instructions.

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

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

2.4 When stored correctly in the sealed container the product will have a storage life of at least six months.

2.5 Ultracrete PPR and Ultracrete SCJ Seal and Tack are not classified under *The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009* (CHIP4).

Assessment and Technical Investigations

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

3 Use

3.1 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.

3.2 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 5).

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

4 Practicability of installation

The product must be installed by operatives who have completed training provided by the Certificate holder.

5 Surface characteristics

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

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

5.2 The properties listed in section 5.1 should be compared to those of the existing adjacent surface to be repaired to ensure the product is compatible as detailed in section 3.2.

5.3 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, Volume 7.

5.4 Applying the guidance from the SROH to the characteristics identified in section 5.1, Ultracrete PPR has surface properties suitable for low risk sites, on type 2, 3 and 4 roads, with a posted speed limit less than 56 mph. Low risk sites are listed in SROH as:

- generally straight sections of carriageway
- approaches to and across major/minor road junctions
- bends of 100 m radius or greater
- downhill/uphill sections of 10% gradient or less.

6 Mechanical resistance and bond strength

A visual inspection of BBA witnessed installation site trials, and laboratory testing of resistance to permanent deformation and tensile bond strength confirmed the product has a satisfactory resistance to trafficking.

7 Maintenance

This product is not subject to any routine maintenance requirements but any damage should be repaired (see *Installation* section).

8 Durability

8.1 For planned routine maintenance work where best practice installation is followed (see section 9) and where the substrate and adjacent surface are generally sound, the product has suitable properties to remain in place for at least 12 months.

8.2 For reactive (immediate/emergency/unplanned) repairs with minimum preparation and installation (see section 9) the expected durability will be reduced.

Installation

9 General

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

- BS 434-2 : 2006, Clause 13.2, or
- DMRB, Part 7.4.1.

9.2 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.

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

10 Preparation of the road surface

Routine repairs

10.1 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

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

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

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

Figure 1 Installation process



11 Laying and compaction — all repairs

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

11.2 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.

11.3 On completion the installer should visually inspect the finished surface for uniformity and any discernable faults and remediate if necessary.

Technical Investigations

12 Investigations

12.1 An examination 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 : 2003, Procedure B
- initial and retained texture depth to BS EN 13036-1 : 2002
- initial and retained SRV by pendulum to TRL Report 176, Appendix E
- PSV and AAV of aggregates to BS EN 1097-8 : 2009.

12.2 An installation trial was carried out to assess the practicability of the installation in accordance with the manufacturer's instructions and best practice methods identified in section 9. The results of the trial concluded that the product can be satisfactorily installed and compacted.

12.3 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 5 and 8, were met.

12.4 The manufacturing process was examined, 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 : 2009 *Tests for mechanical and physical properties of aggregates — Determination of the polished stone value*
- BS EN 12591 : 2009 *Bitumen and bituminous binders — Specifications for paving grade bitumens*
- BS EN 12697-8 : 2003 *Bituminous mixtures — Test methods for hot mix asphalt — Determination of void characteristics bituminous specimens*
- BS EN 13036-1 : 2002 *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 : Volume 7, Pavement Design and Maintenance : Section 4, Pavement Maintenance Methods : Part 1, Maintenance of Bituminous Roads*
- Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 900, Road pavements — bituminous bound materials*
- New Roads and Street Works Act 1991 : Specification for the Reinstatement of Openings in Highways : Code of Practice Third Edition (England), April 2010*
- TRL Report 176 : 1997 *Laboratory tests on high-friction surfaces for highways*

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 Highway 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.