

DEGAFLOOR PATCH REPAIR PRODUCT FOR HIGHWAYS

DEGAFILL

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 Degafill, a cold-applied thermosetting material, incorporating MMA resin, fillers, and aggregates, for use as a patch repair product for potholes and other similar defects occurring in bituminous and concrete (suitably primed) surfaces on non-Strategic Road Network (SRN) roads.

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 or primed concrete 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 First issue: 8 October 2021



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.

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British Board of Agrément

Bucknalls Lane
Watford
Herts WD25 9BA

©2021

tel: 01923 665300
clientservices@bbacerts.co.uk
www.bbacerts.co.uk

Requirements

In the opinion of the BBA, Degafill, 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, March 2019.
- Design Manual for Roads and Bridges (DMRB), CM 231 – Pavement surface repairs, March 2020.

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* of this Certificate.

Technical Specification

1 Description

1.1 Degafill is a cold, hand-applied patch repair product, comprising a base MMA resin and quartz aggregate, and broadcast with emery aggregate graded 1-3 mm.

1.2 Also for use with Degafill is Degafloor 115 Primer, for the priming of concrete substrates.

2 Manufacture

2.1 The product is manufactured by a batch blending technique.

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 the manufacturer have been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by BSI.

3 Delivery and site handling

3.1 The product is supplied in pre-weighed kits consisting of the resin component (Part A, 5.5 kg), resin activator (Part B, 0.3 kg), aggregate component (Part C, 15 kg) and scatter aggregate (Part D, 2 kg).

3.2 The packaging is labelled with the product name, health and safety and information and batch coding traceable to the date of production.

3.3 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 Degafill.

Design Considerations

4 Use

4.1 Degafill is satisfactory for use in minor routine or reactive repairs of potholes and other similar defects found in bituminous surfaces. The product is also suitable for repair of defects in concrete surfaces, where the substrate is first primed with Degafloor 115 Primer. 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 Polished Stone Value (PSV) and Aggregate Abrasion Value (AAV) less than or equivalent to Degafill (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 ≥ 1.5 mm
- an initial SRV (Skid Resistance Value) ≥ 60
- 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 *Department for Transport – Specification for the Reinstatement of Openings in Highways (SROH), Fourth Edition* provides additional guidance on categorising Local Authority Sites.

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 the sites have satisfactory resistance to trafficking and satisfactory bond characteristics classified as type 2, 3 and 4 as defined in the SROH.

7.2 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)
- on sites classified as higher than type 2 as defined in the SROH

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 installed in accordance with this Certificate and where the substrate and adjacent surface are generally sound, the product will 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 Degafill must follow best practice. For the purposes of this Certificate, installation must be in accordance with the Certificate holder's Installation Method Statement.

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 when the air substrate temperature is between 5 and 35 °C.

11 Preparation of the road surface

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

11.2 For concrete surfaces, the defect must be primed with Degafloor 115 Primer by rolling, brushing or other suitable means. The primer must be left to dry for a minimum of 15 minutes prior to installation of the product.

12 Installation

12.1 The resin component (Part A) is mixed thoroughly with a high torque drill fitted with a helical spiral mixing blade until homogeneous.

12.2 Three resin activator bags (Part B) are added and mixed until fully incorporated. The aggregate component (Part C) is then added and mixed until consistency is achieved.

12.3 The mixed Degafill is poured into the defect to be repaired and then levelled off and smoothed over with a trowel.

12.4 A full bag of the scatter aggregate (Part D) is immediately scattered over the surface, ensuring that all of the wet resin is completely covered.

12.5 A minimum of 15 minutes should be allowed for the system to cure before any excess drop-on aggregate is swept away.

12.6 On completion, the installer must 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
- tensile bond strength (to both asphalt and concrete)
- initial and retained texture depth
- initial and retained SRV

- PSV and AAV of aggregates.

13.2 An installation trial was carried out to assess the practicability of the installation. The results of the trial concluded that the product can be satisfactorily installed.

13.3 A performance in use survey, site trials and visual inspections were carried out to assess the product's performance in service. The results from the inspections confirmed satisfactory performance.

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 EN 1097-8 : 2020 *Tests for mechanical and physical properties of aggregates – Determination of the Polished Stone Value*

BS EN 12697-22 : 2020 *Bituminous mixtures – Test methods – 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 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 ISO 9001 : 2015 *Quality management systems – Requirements*

Department for Transport Traffic Signs Manual, Chapter 8

Department for Transport – Specification for the Reinstatement of Openings in Highways (SROH), Fourth Edition, February 2019.

Design Manual for Roads and Bridges (DMRB), CM 231 – Pavement surface repairs, March 2020.

Potholes and Repair Techniques for local highways, ADEPT, March 2019.

TRL Report 176 : 1997 Laboratory tests in 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.