XAIS-PTS Product Assessment Certificate

Product Acceptance Scheme in accordance with Manual for Contract Documents for Highway Works, Specification for Highway Works (MCHW SHW) Volume 1 Sub-Clause 104.15 and 104.16

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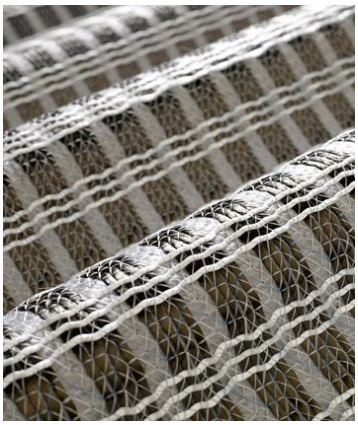
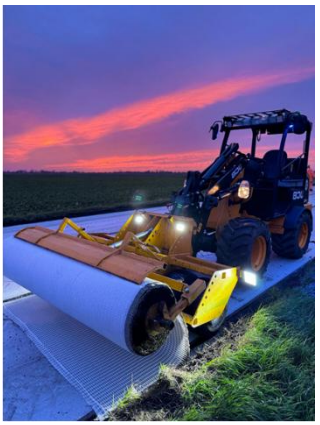
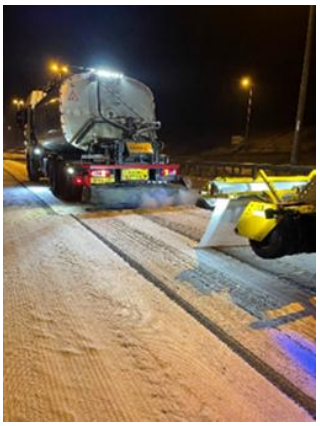
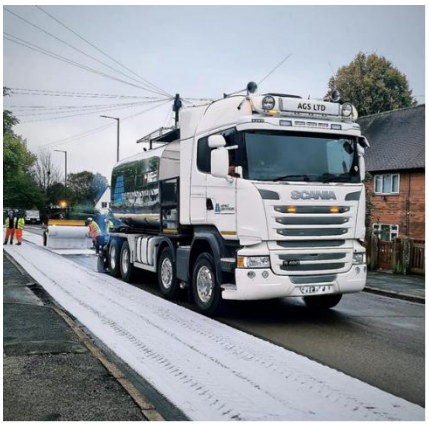
UK Approved Body (UKAB)
Product Area 23 Road Construction Products

Product Names: SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 & SOLMAX MIRAGRID® PGM-B100/200

Product Family: Geosynthetic: Installation and End Product Performance in accordance with MCHW SHW Sub Clause 936

Certificate Reference: PA936 001

XAIS-PTS Ltd has awarded this ***Product Assessment Certificate*** to the Company named above for the products described herein. These products have been assessed by XAIS-PTS Ltd as being fit for their intended use provided, they are manufactured, installed, and used as set out in this Certificate.

The issue of this Certificate under Specialist Group XAIS-PTSSG 936 Geosynthetics: Installation and End Product Performance, which sets out Guidelines and Criteria for the assessment, has been authorised by the XAIS-PTS Technical

On behalf of XAIS-PTS Ltd
Signature

R Edwards Managing Director

Date First Issued: 10.06.22

Date of revision issue: 18.06.25

Certificate Valid until: 09.06.28

Product Name: SOLMAX MIRAGRID® PGM-G 100/100 & SOLMAX MIRAGRID® PGM-G 100/200
Product Family: Geosynthetic: Installation and End Product Performance in accordance with MCHW SHW Sub Clause 936

This Product Assessment Certificate is issued by XAIS-PTS Ltd under XAIS-PTS Product Acceptance Scheme (XAIS-PTSPAS), in accordance with MCHW SHW Sub-Clause 104.15 and 104.16, supported by XAIS-PTS Technical Supervisory Panel (XAIS-PTSTSP) which includes representation from National Highways (NH), Association of Directors of Environment, Economy Planning and Transport (ADEPT), Road Surface Treatments Association (RSTA), Mineral Products Association (MPA), HAUC (UK) SROH Working Group, HAUC (UK) SROH Innovations Working Group and Transport Scotland.

Sub-clause 104.16 (e) requires that *"The scheme must have a technical supervisory panel that provides technical oversight on the operation of the scheme and formally consents to the issue of assessment and certification requirements of the specialist groups developing the assessment and certification requirements. This panel must include a balanced representation of key end users, recognized industry experts and those responsible for the highways on which such products will be used or installed"*.

XAIS-PTSPAS Product Assessment Certificates are each subject to a review every three years, with annual interim surveillance.

PRODUCT APPLICATIONS

- SOLMAX MIRAGRID® PGM-G100/100, PGM-G100/200, SOLMAX MIRAGRID®, PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 & PGM-B100/200 are produced in accordance with EN15381 under FPC certificate No 0799-CPR-22.
- EN 15381:2008 Geotextiles and geotextile-related products —Characteristics required for use in pavements and asphalt overlays — Functions: Reinforcement (R) | Stress relief (STR) | Sealing (B)
- SOLMAX MIRAGRID® PGM-G100/100, PGM-G100/200, SOLMAX MIRAGRID®, PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 & PGM-B100/200 geosynthetic are intended to suppress reflection cracking in asphalt surfacing
- To deliver a level of performance whereby the surface course shall not have more than 10% of the reflection cracking that was present before the installation, for a minimum period of 5 years in accordance with MCHW SHW Clause 936.

KEY FACTORS ASSESSED

As part of the assessment process of SOLMAX MIRAGRID® PGM-G 100/100, PGM-G100/200, PGB-G 100/100 E, PGM-B 100/100 & PGM-B 100/200 the following key factors were reviewed in line with BS EN 9001:2015 Section 8.3 Design and Development.

- ISO 9001: 2015 Quality Management System – BSI Certificate No FS615335 Expiry date 02.09.2027
- Compliance with BS EN ISO 9001: 2015 Section 8.3 'Design and Development of Products and Services'
- Certificate of Conformity of the Factory Production Control in respect of BS EN 15381: 2008 - No 0799-CPR-22
- Declaration of Performance PGM-G100/100 2023-12-05
- Declaration of Performance PGM-G100/200 2023-12-05
- Declaration of Performance PGM-G100/100 E 2023-12-05
- Declaration of Performance PGM-B100/100 2023-12-05
- Declaration of Performance PGM-B100/200 2023-12-05
- Installation Method Statement (IMS) as detailed in the Quality Plan.
- Review of supporting documents and test data
- Client Internal Procedures and Processes & Clients Management Systems Manual- Client Document Reference
- On site documentation, As Built Manual
- Training Matrix
- Safety Data Sheet(s)
- Technical Data Sheet(s)
- Case Studies
- Research and Development Studies
- SCANNER prior to treatment & SCANNER at 5 years post-treatment

1. GENERAL REQUIREMENTS

- The Product is manufactured in accordance with BS EN 15381:2008 requirements and is intended to suppress reflection cracking in asphalt surfacing when installed in accordance with MCHW SHW Clause 936 and as specified in its Quality Plan and Factory Production Control (FPC) requirements
- The Product is installed by the Certificate Holder (or by a Contractor approved by the Certificate Holder) in accordance with MCHW SHW Clause 936, RSTA CoP, the Installation Method Statement and internal procedures and processes

2. MANUFACTURE

SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 and SOLMAX MIRAGRID® PGM-B100/200 geosynthetics are manufactured in accordance with BS EN 15381:2008 and its Certificate of Conformity of the Factory Production Control (FPC certificate No 0799-CPR-22 for production of materials, Certification body Kiwa GmbH Notified Body No 0799) in compliance with the Construction Products Regulation 2011 (Retained EU Law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020

- SOLMAX MIRAGRID® PGM-G100/100, PGM-G100/200 and PGM-G100/100 E are geosynthetics composed of glass filaments, knitted in a flat orientation on a mechanically bonded continuous filament nonwoven made from 100% UV stabilized polypropylene. They are manufactured in accordance with the Quality Plan for the manufacture of the geosynthetic and internal procedures and processes. All material is supplied with a test certificate and DoP.

- SOLMAX MIRAGRID® PGM-B-100/100 and PGM-B 100/200 are geosynthetics composed of basalt filaments, knitted in a flat orientation on a mechanically bonded continuous filament nonwoven made from 100% UV stabilized polypropylene. They are manufactured in accordance with the Quality Plan for the manufacture of the geosynthetic and internal procedures and processes. All material is supplied with a test certificate and DoP.

3. TECHNICAL SPECIFICATION

SOLMAX MIRAGRID® PGM-G100/100 is a geosynthetic with the following performance characteristics (as stated in the Declaration of Performance (DoP) Nos: PGM-G100/100 2023-12-05)

DoP No.: MIRAGRID® PGM-G 100/100-2023-12-05

1. Product Type: MIRAGRID® PGM-G 100/100 E

2. Intended use: Reinforcement (R) + Stress relief (STR) + Sealing (B)

3. Declared performance:

Essential characteristics		Performance		Test standard *)
		Mean value	Tolerance	
Tensile strength	kN/m	100 / 100	-5 / -5	EN ISO 10319
Elongation	%	3 / 3	±1.5 / ±1.5	EN ISO 10319
CBR puncture strength	[kN]	0.8	-0.16	EN ISO 12236
Cone drop test (hole ø)	[mm]	42	+8	EN ISO 13433
Asphalt retention Ra	[kg/m²]	0.7	±0.3	Texas D.O.T. Item 3099
Durability: Has passed the following test: Resistance to weathering EN 12224 (acc. EN 15381:2008 Annex B.1): see test report OFI number 18.01744 from 2019-03-11 and need to be installed within 2 weeks; after the installation on the road surface the product need to be covered within 1 day following the manufacturers installation guidelines. Predicted to be durable pH > 9 Has passed the following test: Resistance to liquids EN 14030; method B: see test report OFI number 18.01744 from 2019-03-11 Has passed the following test: Melting point to EN ISO 3146: see test report OFI number 18.01744 from 2019-03-11				Annex B of harmonised technical specification

3. TECHNICAL SPECIFICATION cont.

SOLMAX MIRAGRID® PGM-G100/200 is a geosynthetic with the following performance characteristics (as stated in the Declaration of Performance (DoP) Nos: PGM-G100/200 2023-12-05)

DoP No.: MIRAGRID® PGM-G 100/200-2023-12-05

1. Product Type: MIRAGRID® PGM-G 100/200

2. Intended use: Reinforcement (R) + Stress relief (STR) + Sealing (B)

3. Declared performance:

Essential characteristics		Performance		Test standard *)
		Mean value	Tolerance	
Tensile strength	kN/m	100 / 200	-5 / -15	EN ISO 10319
Elongation	%	3 / 3	±1.5 / ±1.5	EN ISO 10319
CBR puncture strength	[kN]	1.3	-0.26	EN ISO 12236
Cone drop test (hole ø)	[mm]	30	+6	EN ISO 13433
Asphalt retention Ra	[kg/m²]	1.1	±0.4	Texas D.O.T. Item 3099
Durability: Has passed the following test: Resistance to weathering EN 12224 (acc. EN 15381:2008 Annex B.1): see test report OFI number 18.01744 from 2019-03-11 and need to be installed within 2 weeks; after the installation on the road surface the product need to be covered within 1 day following the manufacturers installation guidelines. Predicted to be durable pH > 9 Has passed the following test: Resistance to liquids EN 14030; method B: see test report OFI number 18.01744 from 2019-03-11 Has passed the following test: Melting point to EN ISO 3146: see test report OFI number 18.01744 from 2019-03-11				Annex B of harmonised technical specification

SOLMAX MIRAGRID® PGM-G100/100 E is a geosynthetic with the following performance characteristics (as stated in the Declaration of Performance (DoP) No: PGM-G100/100 E 2024-12-05). PGM-G 100 E requires less bond coat for sufficient bonding and this can be reduced from 1.1 – 1.3 kg/m² (reference SOLMAX MIRAGRID® ® PGM-G 100) to approximately 0.4– 0.5 kg/m².

DoP No.: MIRAGRID® PGM-G 100/100 E-2023-12-05

1. Product Type: MIRAGRID® PGM-G 100/100

2. Intended use: Reinforcement (R) + Stress relief (STR) + Sealing (B)

3. Declared performance:

Essential characteristics		Performance		Test standard *)
		Mean value	Tolerance	
Tensile strength	kN/m	100 / 100	-5 / -5	EN ISO 10319
Elongation	%	2.5 / 1.7	±1 / ±1	EN ISO 10319
CBR puncture strength	[kN]	1.3	-0.26	EN ISO 12236
Cone drop test (hole ø)	[mm]	30	+6	EN ISO 13433
Asphalt retention Ra	[kg/m²]	1.1	±0.4	Texas D.O.T. Item 3099
Durability: Has passed the following test: Resistance to weathering EN 12224 (acc. EN 15381:2008 Annex B.1): see test report OFI number 18.01744-1 from 2019-02-25 and need to be installed within 2 weeks; after the installation on the road surface the product need to be covered within 1 day following the manufacturers installation guidelines. Predicted to be durable pH > 9 Has passed the following test: Resistance to liquids EN 14030; method B: see test report OFI number 18.01744 from 2019-03-11 Has passed the following test: Melting point to EN ISO 3146: see test report OFI number 18.01744 from 2019-03-11				Annex B of harmonised technical specification

3. TECHNICAL SPECIFICATION cont.

SOLMAX MIRAGRID® PGM-B100/100 is a geosynthetic with the following performance characteristics (as stated in the Declaration of Performance (DoP) Nos: PGM-B100/100 2023-12-05). SOLMAX MIRAGRID®® PGM-B uses high modulus basalt fibres.

DoP No.: MIRAGRID® PGM-B 100/100-2023-12-05

1. Product Type: MIRAGRID® PGM-B 100/100

2. Intended use: Reinforcement (R) + Stress relief (STR) + Sealing (B)

3. Declared performance:

Essential characteristics		Performance		Test standard *)
		Mean value	Tolerance	
Tensile strength	kN/m	100 / 100	-5 / -5	EN ISO 10319
Elongation	%	2.5 / 1.7	±1 / ±1	EN ISO 10319
CBR puncture strength	[kN]	1.3	-0.26	EN ISO 12236
Cone drop test (hole ø)	[mm]	30	+6	EN ISO 13433
Asphalt retention Ra	[kg/m²]	1.1	±0.4	Texas D.O.T. Item 3099
Durability: Has passed the following test: Resistance to weathering EN 12224 (acc. EN 15381:2008 Annex B.1): see test report OFI number 18.01744-1 from 2019-02-25 and need to be installed within 2 weeks; after the installation on the road surface the product need to be covered within 1 day following the manufacturers installation guidelines. Predicted to be durable pH > 9 Has passed the following test: Resistance to liquids EN 14030; method B: see test report OFI number 18.01744 from 2019-03-11 Has passed the following test: Melting point to EN ISO 3146: see test report OFI number 18.01744 from 2019-03-11				Annex B of harmonised technical specification

SOLMAX MIRAGRID® PGM-B100/200 is a geosynthetic with the following performance characteristics (as stated in the Declaration of Performance (DoP) Nos: PGM-B100/200 2023-12-05). SOLMAX MIRAGRID®® PGM-B uses high modulus basalt fibres.

DoP No: MIRAGRID® PGM-B 100/200-2023-12-05-23

1. Product Type: MIRAGRID® PGM-B 100/200

2. Intended use: Reinforcement (R) + Stress relief (STR) + Sealing (B)

3. Declared performance:

Essential characteristics		Performance		Test standard *)
		Mean value	Tolerance	
Tensile strength	kN/m	100 / 200	-5 / -15	EN ISO 10319
Elongation	%	2.5 / 1.7	±1 / ±1	EN ISO 10319
CBR puncture strength	[kN]	1.3	-0.26	EN ISO 12236
Cone drop test (hole ø)	[mm]	30	+6	EN ISO 13433
Asphalt retention Ra	[kg/m²]	1.1	±0.4	Texas D.O.T. Item 3099
Durability: Has passed the following test: Resistance to weathering EN 12224 (acc. EN 15381:2008 Annex B.1): see test report OFI number 18.01744-1 from 2019-02-25 and need to be installed within 2 weeks; after the installation on the road surface the product need to be covered within 1 day following the manufacturers installation guidelines. Predicted to be durable pH > 9 Has passed the following test: Resistance to liquids EN 14030; method B: see test report OFI number 18.01744 from 2019-03-11 Has passed the following test: Melting point to EN ISO 3146: see test report OFI number 18.01744 from 2019-03-11				Annex B of harmonised technical specification

4. REFLECTION CRACKING SURVEY PRIOR TO PREPARATORY WORKS

A SCANNER pre-treatment traffic-speed machine-based crack detection survey was undertaken in 2013 prior to the removal of the pre-existing surface course.

5. PREPARATORY WORKS

SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 & PGM-B100/200 are delivered handled and stored in accordance with the Manufacturer's instructions and the latest version of the AGS Quality Plan.

Preparatory Works are undertaken according to the Installation Method Statement (as detailed within the Quality Plan) and the requirements of MCHW SHW 936

The surface that is to receive the SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic shall be free of surface defects so as not to compromise the performance of the product system to be applied. Where a levelling or regulating course is required, it shall be laid in accordance with the requirements of Clause 907.
Before the bond coat is applied, ironwork shall be masked. Any planings or asphalt deposits on the surface shall be removed and the receiving surface shall be swept free of all loose material.

SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 & PGM-B100/200 require a bond coat for installation, either a paving grade bitumen in accordance with BS EN 12591 or a hot modified bitumen in accordance with BS EN 14023.

The bond coat shall be installed in accordance with the following criteria:

The bond coat shall be applied directly beneath the SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic in accordance with the Quality Plan (The application rate is higher than the minimum application rates given in BS 594987).
The bond coat shall be sprayed through a certified calibrated spray bar at the agreed rate as specified in the Quality Plan or at a rate appropriate to the specific project.
The rate and accuracy of the distribution of the bond coat shall be checked at the commencement of the work by means of a carpet tile test carried out in accordance with BS EN12272-1. This test shall be repeated for each binder distributor used during the work.

Bond coats shall be installed in accordance with the following criteria:

- A bond coat shall be applied directly beneath the geosynthetic in accordance with the Installation Method Statement and in contract specific Appendix 7/1; Higher application rates may be specified on a product specific basis. (Note: in some cases, this bond coat may be part of a composite system including a geosynthetic.)
- The bond coat shall be sprayed through a certified calibrated spray bar at the agreed rate appropriate to the specific project.
- The rate and accuracy of the distribution of the bond coat shall be checked at the commencement of the work by means of a carpet tile test carried out in accordance with BS EN12272-1. This test shall be repeated for each binder distributor used during the course of the work
- Where bitumen emulsions are used, evidence shall be provided by the Contractor that the emulsion will "break" within the time limits likely to be encountered during normal maintenance working windows.

Systems requiring a levelling or regulating course shall be laid in accordance with the requirements of Clause 907, such installations are outside the scope of this certificate.

6. PRODUCT APPLICATION PROCESS

- Installation of SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic is carried out by The Certificate Holder (AGS) in accordance with the Installation Method Statement (as detailed within the Quality Plan) and MCHW SHW Clause 936.
- The Contractor (AGS) shall be registered under National Highways Sector Scheme NHSS 13.
- The Contractor (AGS) shall work in accordance with the design provided to achieve the performance requirements in terms of control of reflection cracking as set out in MCHW SHW Clause 936 and in contract specific Appendix 7/1;
- AGS Method statement includes installation (as detailed within the Quality Plan)
- General installation procedures (AGS SP03 and as detailed within the Quality Plan)
- Limitations in respect to weather and substrate conditions (as detailed within the Quality Plan)
- On site storage and handling of materials (AGS SP procedures and as detailed within the Quality Plan)
- Installation is carried out using appropriate mechanical equipment specifically designed to lay the material under tension.
- On site quality control / assurance procedures and associated documentation (AGS BP03 and as detailed within the Quality Plan).
- The installation of the Product shall be carried out using appropriate mechanical equipment that is designed specifically to lay the material under tension
- Hand-laying may be required in locations such as tight radius bends and on small, restricted sites.
- The Contractor (AGS) shall ensure that the SOLMAX MIRAGRID® PGM-G100/100 or PGM-G100/200 geosynthetic has initial bond such that it is capable of withstanding construction traffic and remains fully adhered to the substrate and the asphalt overlay with no separation.
- The Contractor (AGS) shall measure and record the bond condition as stipulated in the Quality Plan and refer to the RSTA ADEPT Code of Practice for Geosynthetics and Steel meshes.
- Installation shall be planned and carried out such that there is continuity of works and other surfacing operations are not impeded.
- The Contractor's (AGS's) quality plan shall include transverse and longitudinal overlaps.
- The SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic shall be placed sufficiently deep within the bound layers so that it is not removed when the surface course is replaced.

If a surface course is to be placed directly on the SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200, approval by the Overseeing Organisation (a Departure from Standard) will be needed. Installation would be outside of the scope of this Certification.

An audit of the installation was carried out in order to assess the installation procedures as defined in the AGS Quality Plan along with the assessment of CE Marking and Declaration of Performance and on-site quality control procedures – PTS Installation Report Reference PTS102 Stage 3, dated 02.02.22.

7. AFTERCARE

Aftercare shall be carried out in accordance with the Installation Method Statement (as detailed within the Quality Plan) and MCHW SHW Clause 936

- Masking shall be removed after the SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic has been installed and before the surfacing operation commences.
- The SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic shall be overlaid in the same shift, or as soon as is practically possible.

7. AFTERCARE cont.

- The Contractor (AGS) shall undertake remedial action where necessary, which may include nailing, patching, cutting or dusting if there are signs of distress, such as separation, turning damage, bleeding or pickup of the SOLMAX MIRAGRID® PGM-G 100/100, SOLMAX MIRAGRID® PGM-G 100/200, SOLMAX MIRAGRID® PGM-G100 E, SOLMAX MIRAGRID® PGM-B100/100 or SOLMAX MIRAGRID® PGM-B100/200 geosynthetic in order to prevent further damage to the System.

8. AS BUILT MANUAL

The As-Built Manual forms part of the PTS Technical Report (AGS As built Manual A43 Northampton Rd - Silverstone 220322) forms part of the PTS Stage 3 Technical Report), and includes:

i. the product name.
ii. all test results.
iii. a pre-treatment crack map. Where geosynthetics are applied over a new longitudinal joint, a drawing showing the location of the joint shall be submitted. (Note: If a pre-treatment crack map is not provided, all cracks appearing within 5 years will be seen as 'excessive' and require remedial measures (see MCHW SHW Clause 936.19).
iv. variations to the design proposal and those necessitated by local conditions (which need to be agreed prior to installation);
v. a record of installation control carried out;
vi. weather information;
vii. unforeseen problems encountered;
viii. a list of complaints, if any, from the general public or road users;
ix. any other information that the Overseeing Organisation may reasonably require to be included, as previously agreed.

9. REFLECTION CRACKING SURVEY AT 5 YEARS

A five / six-year SCANNER traffic-speed machine-based crack detection survey was undertaken in 2020 /2021 following installation of the geosynthetic. Data analysis of number of all cracks identified, (LMAP_len) and total length of all cracks identified, showed that the level of cracking at 5 years was less than 10% of that present prior to installation.

10. CASE STUDIES

As part of the verification process, the following case studies were reviewed
A617, Millennium Way, Nottinghamshire.
A606, Stamford Road, Oakham.
Haymarket Bus Station, Leicester.

A review of the case studies was carried out in order to assess the performance of previously installed materials: PTS Stage 4 Report. Available on request from the Certificate Holder (AGS).

11. TEST RESULTS

Available on request of the Overseeing Organisation from the Certificate Holder, comprising the verification and on-going validation processes.

12. BIBLIOGRAPHY (/correct at time of initial certificate issue):

BS EN ISO/IEC 9001:2015 Quality Management System Requirements
BS EN ISO 17025:2017 General requirements for the competence of testing and calibration laboratories

BS EN ISO/IEC 17065:2012 Conformity assessment – Requirements for bodies certifying products, processes, and services
BS EN ISO/IEC 17067:2013 Conformity assessment – fundamentals of product certification and guidelines for product certification schemes

Manual of Contract Documents for Highways Works, Volume 1, Specification for Highways, Works, Series 100, Preliminaries, April 2022
Manual of Contract Documents for Highways Works, Volume 1, Specification for Highways, Works Series 900, Road Pavements – Bituminous Bound Materials, July 2021
BS EN 15381:2008 Geotextiles and geotextile-related products. Characteristics required for use in pavements and asphalt overlays
RSTA ADEPT Code of Practice for Geosynthetics and Steel Mesh for Asphalt Reinforcement (Interlayers), Issue 3 May 2023
National Highway Sector Scheme Document 13 Particular Requirements for the Application of ISO 9001:2015 for the Supply and Application of Surface Treatments to Road Surfaces, November 2020
UKPMS User Manual, Volume 2: Visual Data Collection for UKPMS, October 2009 Chapter 8: Detailed Visual Inspection (DVI)

BS EN 12591:2009 Bitumen and Bituminous Binders. Specifications for Paving Grade Bitumens
BS EN 14023:2010 Bitumen and Bituminous Binders. Specification Framework for Polymer Modified Bitumens
BS EN 13808:2013 Bitumen and Bituminous Binders. Framework for Specifying Cationic Bituminous Emulsions
BS EN 12273:2008 Slurry Surfacing. Requirements
BS EN 12272-1:2002 Surface Dressing. Test Methods. Rate of Spread and Accuracy of Spread of Binder and Chippings
BS 1707:2018 Road Surface Dressing, Bond Coats, Seals, Preservatives and Other Sprays Specification for the Method of Test for Binder Sprayers for Accuracy of Spread of Binder (Spray Bar Bench Test)
BS594987:2015+A1:2017 Asphalt for Roads and Other Paved Areas. Specification for Transport, Laying, Compaction and Product Type Testing Protocols

XAIS-PTS SG 936 Guidelines and Criteria Document for the Assessment and Certification of Geosynthetics and Steel Meshes: Installation and End Product Performance to MCHW SHW Clause 936
PTS Clause 936 Pre-Installation and 5-year Compliance Survey Report
As Built Manual
PTS Report Stage 3 Installation Method Statement Audit,
PTS Report Stage 4 Review of Technical Data Relating to Design Inputs Verification and Consolidate Case Studies
PTS Report Stage 5 Review
XAIS-PTS Report – Additional products Nov 2024

CONDITIONS OF CERTIFICATION

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
   - valid only in 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 XAIS-PTS Ltd.
   - XAIS-PTS Product Assessment forms part of the Product Acceptance Scheme as described in MCHW SHW Volume 1 Clause 104.16 and shall be submitted by the Contractor/Certificate Holder to the Overseeing Organisation for Approval.
2. Publications, documents, specifications, legislation, regulations, standards, and the like referenced in this Certificate are those that were current and/or deemed relevant by XAIS-PTS Ltd at the date of issue or reissue of this Certificate.

3. This Certificate will remain valid for an unlimited period, subject to 3 year review to revalidate 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 XAIS-PTS Ltd
   - continue to be checked as and when deemed appropriate by XAIS-PTS Ltd under arrangements that it will determine
   - are reviewed by XAIS-PTS Ltd as and when it considers appropriate.
   - remain in accordance with the requirements of XAIS-PTSPAS. Additional review shall be carried out as necessary should Specification's / Standard's change to ensure compliance.
   - remain in accordance with XAIS-PTS Terms of Business.

4. XAIS-PTS Ltd has used due skill, care, and diligence in preparing this Certificate, but no warranty is provided.

5. In issuing this Certificate, XAIS-PTS Ltd 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
   - individual 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

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.