

**PAVEMENT TESTING SERVICES (PTS) LIMITED
PTS PRODUCT ASSESSMENT AND CERTIFICATION**

**PRODUCT ACCEPTANCE SCHEME
MCHW SHW VOLUME 1 CLAUSE 104.15 AND 104.16**

**GUIDELINES AND CRITERIA DOCUMENT
PTSSG 936**

**FOR THE ASSESSMENT AND CERTIFICATION OF
GEOSYNTHETICS AND STEEL MESHES:
INSTALLATION AND END PRODUCT PERFORMANCE
TO MCHW SHW CLAUSE 936**

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Acknowledgements

This document is published under the Pavement Testing Services Limited, referred to PTS Ltd herein Product Assessment and Certification Scheme (PTSPAS).

This document has been compiled by members of the PTS Ltd Certification Team as employed by PTS Ltd.

This current version of the PTS Guidelines and Criteria Document PTSSG 936 has been reviewed and endorsed by PTS Technical Supervisory Panel (PTSTSP), it is a living document, developed from the current industry Specification, Codes of Practice, and industry best practice, undergoing editing, and updating to incorporate changes to the industry documents.

The PTSTSP provides technical oversight on the operation of the Scheme, formally consents to the issue of Assessment and Certification requirements of the Specialist Groups (SGs) and includes interested parties within:

- Roads Authorities
- Statutory Undertakers
- Professional Institutions and Trade Bodies
- Patching and Reinstatement Contractors
- Material Suppliers
- System Providers

The criteria to define and quantify reflection cracking from the output of traffic speed reflection crack measurement surveys (using laser crack measuring systems) was developed by PTS Ltd in liaison with National Highways, and the PTSTSP, and meets the requirements of MCHW SHW Clause 936 for assessment purposes.

Terms and Conditions

This Guidelines and Criteria Document must be read, understood, and used as a whole document – it may be misleading or incomplete if read selectively.

The use of, and reproduction of, this Guidelines and Criteria Document is permitted only in accordance with these Terms and Conditions.

References in this Guidelines and Criteria Document to any Act of Parliament, Statutory Instrument, Directive or Regulation, British, European or International Standard, Code of Practice, manufacturers' instructions, or similar publication, are references to such publication in the form in which it was current at the date of the publication of this Guidelines and Criteria Document.

PTS Ltd shall undertake and certify product assessment in accordance with this Guidelines and Criteria Document whilst following its Internal Process W15 – PTS Product Assessment and Certification, available for reference on PTS website, as required in PTS Product Acceptance Scheme in accordance with Manual of Contract Documents for Highway Works (MCHW) Specification for Highway Works (SHW) Volume 1 Clause 104.15 and 104.16 and associated processes and procedures. The test methods and protocols contained in this document are for certification purposes only and are not intended for use on a contractual basis as the Specification.

PTS Ltd makes no warranties, representations, or undertakings in respect of this Guidelines and Criteria Document. In no event will PTS Ltd be liable for any direct or consequential loss or damage arising from its use or use of, or reliance on its content.

Revisions

| Issue | Details / Revision Changes | By | Reviewed / Approved By | Date |
|---------|--|-------|------------------------|-------------|
| Draft 1 | Formation of Guidelines and Criteria Document – DRAFT (for comments) | CD | PTS/RSTA | 09.10.18 |
| Draft 2 | Further development of Guidelines and Criteria Document | CD | PTS | 01.07.19 |
| Draft 3 | Addition detail, further development of Guidelines and Criteria Document with Automated Visual Survey / performance monitoring requirements | JB/VS | PTS/TSP | - |
| Draft 4 | Updated to include reflection cracking criteria using laser-based measurement / general PTS G&C document format changes / added reflection cracking assessment methodology (July 2021 amendment SHW Cl. 936) | JB/VS | PTS/TSP | August 2021 |
| Draft 5 | Specialist Group comments | JB/VS | PTS/SG | 21.01.22 |
| Draft 6 | Design requirements for As Built | JB/VS | PTS/TSP | 18.02.22 |
| Draft 7 | Comment from RSTA 936 (meeting 4) Group (page 31) | JB/VS | PTS/SG | 06.04.22 |
| Draft 8 | Layout design and logo amended following Phenna Group acquisition | VS/JB | PTS/TSP | 29.04.22 |
| 1 | Formal issue of Guidelines Document | VS/JB | PTS/TSP | 29.04.22 |
| 2 | Redesign following Phenna acquisition | VS/JB | PTS/TSP | 01.06.22 |
| 3 | Lantra Schedule of Suppliers, replaced with UKAS cert check website. Amendment to scope wording for clarity of accreditation and cross reference to PTS UKAS schedule. Amendment to logo | VS/JB | PTS | 13.07.23 |

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Scope

The purpose of this Guidelines and Criteria Document is to set out the criteria for the Assessment and Certification of Geosynthetics and Steel Meshes: Installation and End Product Performance under the PTS Assessment and Certification System, in line with PTS Process W15 PTS Product Assessment and Certification as required in PTS Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16.

The scope of assessment and certification under this PTS Guidelines and Criteria document is for the Assessment and Certification of Geosynthetics and Steel Meshes: Installation and End Product Performance only as named on the PTS Application form. The named product(s) must be installed in accordance with the relevant MCHW SHW Clauses, associated standards, sector scheme(s), and Code of Practices. Specific contractual requirements will be taken into consideration as required for any scheme installation trial.

The named product(s) shall be installed/applied in conjunction with an approved spray-applied bond coat (paving grade bitumen in accordance with BS EN 12591 or hot modified bitumen in accordance with BS EN 14023 or bitumen emulsion in accordance with BS EN 13808 or slurry surfacing complying with the requirements of BS EN 12273). The named product must be installed/applied in accordance with the relevant MCHW SHW Clauses, associated standards, sector scheme(s), and Code of Practices. Specific contractual requirements will be taken into consideration as required for any scheme installation trial

For the purpose of this assessment, the object of conformity is defined as the named product, and the associated certification of this named product expressly excludes any ancillary/preparatory treatments/materials used pre-/post-application of the named product.

The assessment and certification process specified within this document shall be structured and implemented to provide assurance to PTS Ltd that the named product(s), when supplied for its intended use and installed or processed post manufacture, shall be in accordance with the manufacturer's instructions and will give the performance and level of safety required by the Specification and be fit for purpose as derived from BS EN ISO IEC 17065.

The Product Assessment shall follow the stages detailed in this document and will be carried out in accordance with the Guidelines and Criteria Document shown in Appendix 1.

For this Guidelines and Criteria Document, appropriate extracts from MCHW SHW Series 900 will be known as the *Specification*.

The adopted test methods, in-situ and laboratory test results shall be derived from UKAS accredited testing laboratories to ISO/IEC 17025, for the relevant sampling and test methods, recognized research bodies and Universities and/or data supplied by the Overseeing Organisation. The content of this Guidelines and Criteria Document is for assessment and certification purposes only of the named product(s) on the PTS Application Form and is not intended for use on a contractual basis as the specification. If other claims are being made by the Applicant relating to performance of a system, additional assessment work may need to be undertaken: such work will be considered and detailed within the issued Certificate under 'Other Investigations'.

The criteria to define and quantify reflection cracking from the output of traffic speed reflection crack measurement surveys (using laser crack measuring systems) was developed by PTS Ltd in liaison with National Highways, and the PTSTSP, and meets the requirements of MCHW SHW Clause 936 for assessment purposes.

All technical references and standards referred to within these Guidelines and Criteria Document are the published versions as referenced in the Bibliography.

The Assessment and Certification requirements for the Product certified under this Scheme shall be developed ensuring due consideration to the requirements of the users of the products and those responsible for the highways on which such products shall be used or installed. PTS Ltd makes no warranties, representations, or undertakings in respect of this Guidelines and Criteria Document. In no event will PTS Ltd be liable for any direct or consequential loss or damage arising from its use or use of, or reliance on its content.

PTS Ltd are an UKAS accredited Certification Body for BS EN ISO/IEC 17065 for product certification, detail as per UKAS Schedule (see website for most current version) and are in process of expanding the UKAS schedule by seeking accreditation for the Product Assessment as part of the Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16 to include additional MCHW SHW clauses.

PTS Ltd as a UK Approved Body (2448) can award UKCA Markings to Products under 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.

PTS Ltd are registered on the UKMCAB (UK Market Approved Body) Database for Technical Assessment as a Technical Assessment Body (TAB) complying with the competencies requirements of MCHW SHW Volume 1 Clause 104.16 (i) and Table 1/1.

The requirement of MCHW SHW Clause 104.15 for a Product Acceptance Scheme is satisfied by PTS's Product Assessment and Certification capability against Guidelines and Criteria as set out in MCHW SHW.

This assessment and certification as carried out under this Guidelines and Criteria Document is valid only within the UK.

Definitions, Abbreviations and Acronyms

| | |
|--------------------------|--|
| Applicant | Company requesting for PTS Ltd to provide assessment and certification |
| CE (Mark) | CE marking is a European regulatory mark. CE marked products are entitled to free movement throughout the European market (EU and EEA). The CE mark confirms the product complies with all relevant product supply law, and its presence together with the Declaration of Performance gives the product to which it is affixed presumption of conformity with a harmonised European standard (hEN). |
| Certificate Holder | Company awarded with PTSPAS Certificate |
| CoP | Code of Practice |
| Corrective Action Report | Detail corrective actions following non-conformance / finding raised during an assessment stage. The report details the cause and extent of the non-conformity, action taken (including action to prevent recurrence) and the corrective action submitted to enable review of effectiveness of correction, its verification and satisfaction close out of the non-conformance or additional action if necessary. |
| COSHH | Control of Substances Hazardous to Health |
| CPR | <p>The EU 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 seeks to remove technical barriers to the trade of construction products in the European single market.</p> <p>The CPR aims to ensure the reliability of information on the performance of construction products. This is achieved through harmonised European product standards using a common technical language and uniform assessment methods.</p> <p>Following EU exit legislation which makes amendments to the regime for construction products post transition period will now apply in England, Wales, and Scotland only. The regime in Northern Ireland will match the EU requirements for construction products.</p> |
| Crack Map | Graphical representation of crack detection survey data for comparative purposes |
| Designated standards | Following UK exit from the EU, all existing harmonised European standards became UK 'designated standards'. This means that immediately after the end of the transition period of EU exit, harmonised European standards and UK designated standards will be identical. |
| DMRB | Design Manual for Roads and Bridges |
| DoP | Declaration of Performance |
| DVI | Detailed visual inspection |

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| FPC | Factory Production Control |
| Lead Auditor | A recognised lead auditor having satisfactorily completed an approved training course in Management system(s) operation and auditing. The course must have included an examination recognized by IRCA standards, with competent audit management skills. Competencies for Technical Assessment Bodies given in EU 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, Annex IV, Table 2 with the additions given in Table 1/1 of MCHW SHW of Clause 104.16 also required, BS EN ISO/IEC 17065 and BS EN ISO/IEC 17021-1 |
| MCHW SHW | Manual of Contract Documents for Highway Works Specification for Highways Works |
| Method Statement | Method Statement is a documented description that gives specific instructions on how to undertake activities safely and the measures needed (including identification of any potential hazards and what precautionary measures are in place) |
| NH | National Highways |
| NHSS | National Highways Sector Scheme - Bespoke quality management schemes which supplement ISO 9001:2015 detailing specific application to highway construction and maintenance activities within the and included on The Schedule of Suppliers website https://www.scheduleofsuppliers.co.uk |
| Overseeing Organisation | Organisations responsible for the development of highway / road network in England, Scotland, Wales, and Northern Ireland |
| Proprietary Software | Software analysis used in the course of the design process to capture output key parameters subsequently used for the installation of the geosynthetic material. Input parameters may include projected system life and characteristics of proposed surrounding bituminous layers (material type/thickness), traffic loading. Output parameters may include the type of geosynthetic and/or the location of the synthetic within the new construction and/or the spread rate of any binder used for adhesion or protection. |
| PTS Approved Laboratory | An approved laboratory, or recognised research body approved by PTS Ltd to carry out test work on behalf of PTS Ltd, i.e., sub-contracted by PTS Ltd, which may lead to the approval of a product and the issue of a PTS Certificate. Before approval, the laboratory will have demonstrated to PTS Ltd that it has the relevant expertise, equipment, and quality systems in place to carry out the work required |
| PTS Ltd | Pavement Testing Services Ltd |
| PTS Technical Supervisory Panel Instructions | PTSTSP Review Process for the Determination of requirements – Guidelines and Criteria documents and Certification Authorisation |
| PTSPAS | Pavement Testing Services Product Assessment Scheme |

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| PTSPAS Management Committee | PTS Ltd Management Committee team to generate and operate the PTSPAS. Consults with PTSTSP members. Competencies to Table 1/1 of MCHW SHW Clause 104.16 |
| PTSTSP | Pavement Testing Services Technical Supervisory Panel as defined in MCHW SHW Volume 1 Clause 104.16 |
| QMS | Quality Management System in accordance with BS EN ISO9001:2015 - Standard that helps organisations ensure they meet customer and other stakeholder needs within statutory and regulatory requirements related to a product or service. |
| Quality Plan | Quality Plan is a document or a defined group of documents that together specify standards and associated references and the requirements for planning, implementation, and measuring/monitoring requirements for production plant(s). It forms the methodology to be followed relevant to the system to be assessed (including responsibilities, production procedures, testing, tolerances, and controls). |
| Recognised Certification Body | Certification Body that is accredited by UKAS |
| Recognised Research Body | A Recognised Research body is a disciplined group approved by PTS Ltd that specialise in product development or testing or an individual Recognised Researcher or equivalent who are Researchers / testers with an equivalent level of experience and competence as possessing special knowledge and skills derived from research, education, and training at a high level, and is recognised by the public as such. |
| Reflection Crack (criteria for analysis) | <ul style="list-style-type: none"> (i) A crack with a minimum crack length of 300mm AND (ii) A crack with severity equal to or greater than 1mm width AND (iii) Parallel cracks that are within 150mm of each other will be counted a single crack. (iv) Cracks that occur within 150mm of a previously identified and underlying discontinuity will be deemed to be reflective and counted towards the total reflective crack length for the given 100m section. <p>All cracks satisfying the above criteria are assumed to be reflection cracks for the purpose of the analysis unless proven otherwise.</p> |
| Reflection Crack Measurement Survey | <p>A traffic speed reflection crack measurement survey using laser crack measuring systems OR A UKPMS-accredited DVI survey (valid for Interim Certification only)</p> <p>The output of a traffic speed reflection crack measurement survey using laser crack measuring systems will be processed using the relevant PTS Internal Procedure (Analysis of Crack Data) to identify potential reflection cracking locations using the agreed criteria (see above).</p> <p>The output from the machine-based automated survey, in the form of crack maps, will then be verified by a competent engineer (with experience of HAPMS/UKPMS-type surveys).</p> <p>The crack maps, which are included in the reflection cracking report, will be annotated to identify the verified reflection cracks.</p> |

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| Reflection Cracking (descriptive term) | Cracking in bituminous pavement layers known to relate to the cracking or discontinuities in an underlying layer. |
| SG | Specialist Group – a group of subject matter experts convened as deemed necessary by the Technical Supervisory Panel to review, for example, specific requirements, clauses, or sub-clauses of the MCHW SHW |
| Technical Expert | Person with competent working knowledge of nationally recognised technical discipline within the construction industry, to provide technical expertise during certification audits / assessments in conformance with standards BS EN ISO/IEC 17065 and BS EN ISO/IEC 17021-1, PTS procedures and processes. Competencies for Technical Assessment Bodies given in EU 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, Annex IV, Table 2 with the additions given in Table 1/1 of SHW of Clause 104.16. |
| UKAS | United Kingdom Accreditation Service – The National Accreditation Body for the UK. Appointed by UK Government (the Department for Business, Energy and Industrial Strategy) to provide accreditation to organisations that provide services (certification, testing, inspection, and calibration). |
| UKAS Accredited Laboratory | Testing laboratory with accreditation to ISO/IEC 17025 for carrying out testing on samples to traceable standards, references or verified in house methods. |
| UKCA (mark) | <p>The UKCA (United Kingdom Conformity Assessed) marking applies to most goods previously subject to the CE marking. UKCA marking came into effect on 1 January 2021 and is used for goods being placed on the market in Great Britain (England, Scotland, and Wales).</p> <p>The UKCA marking alone cannot be used for goods placed on the Northern Ireland market, which require the CE marking or UKNI marking CE marking is only valid in those parts of the UK where GB and EU rules remain the same.</p> |
| UKPMS | The United Kingdom Pavement Management System (UKPMS) is a standard for computer systems that support the management of scheduled maintenance through the monitoring of condition on UK local authority hard paved areas including roads, footpaths and cycle tracks. |
| VCS | Visual Condition Survey – non-invasive pavement condition survey undertaken as a walk-over survey or using a traffic speed vehicle-based survey tool |
| Visual Assessment | Procedure for assessing visual condition. |

Assessment Stages

The Assessment and Certification process is undertaken in stages and in accordance with PTS Process “W15 PTS Product Assessment and Certification”, as required in PTS Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16 and PTS Procedure V4 Audit Plan for evaluation, review, decision, and certification. All documents are available on the PTS website. <https://www.ptsinternational.co.uk>

Each stage of the assessment process must be successfully completed and, where applicable, a report is issued detailing the assessment stage findings prior to the commencement of the next stage. The applicant can request for stage 3 (witnessed installation) to be carried out as accessibility of an installation site becomes available at any time during stages 1, 2 and 4. The applicant will have the option of withdrawing from the assessment process at any stage should the named product(s) on the Application fail to comply with the requirements.

Conducting Audits / Assessments

In order that an effective assessment may be conducted, auditors and technical experts shall conduct all audits and assessments in a professional manner and all data/documented information shall be handled with utmost confidentiality in accordance with PTS Process “W3 - On Site Audit”.

During the course of the assessment, should there be the need to modify the product(s) defined by the Applicant (eg as a result of failure of the product(s) to meet the requirements), any resultant changes to the assessment, including any additional assessment work, will be considered by PTS Ltd.

Traffic speed reflection crack measurement surveys (utilising laser crack measuring systems) provide a means of determining both the initial reflection cracking pre-treatment and to establish the performance of the installed product, using a crack map derived from the output of the traffic speed survey.

Traffic speed surveys can provide a safer, more accurate and less subjective alternative to traditional walk over surveys used in the past.

Terminology Used During the Audit / Assessment

Opportunity for Improvement or Observation

Opportunities for improvement or observations, made during audit or assessment, may be identified, and recorded without a recommendation of specific resolutions to the issues raised, unless a lack of these is prohibited by the requirements of the Scheme. The subject matter relating to the opportunities for improvement or observations may pose no current risk to the functioning of the system but could lead to a non-conformity in the future if not addressed. Opportunities for improvement or observations should be considered for potential improvement and to further investigate any weaknesses for possible inclusion in the corrective action program.

Non-Conformities

Non-conformities represent one or more of the following:

- A weakness or issue based on objective evidence,
- the absence of or a significant failure to implement and/or maintain conformance to the requirements of the applicable Standard / Specification / Code of Practice.
- a situation which would, based on available objective evidence, raise significant doubt as to the conformance of products that are to be placed on the market.

Each non-conformity raised shall be recorded against a specific requirement of the audit criteria and shall contain a clear statement in the report of the category of the non-conformity and identify in detail the objective evidence on which the non-conformity is based.

Audit findings which are non-conforming shall not be recorded as opportunity for improvement.

Non-conformities shall be discussed with the Applicant to ensure that the evidence is accurate and that the non-conformities are understood. The Applicant shall analyse the cause of the non-conformity and provide the appropriate corrective action to be taken, or planned to be taken, to eliminate the non-conformity.

A defined time frame shall be agreed for the corrective action to be taken and evidence of the corrective action having been undertaken submitted to PTS Ltd. Details are submitted to PTS Ltd using the Corrective Action Report Form.

The Lead auditor shall attempt to resolve any difference of opinion between the audit team and the Applicant with respect to audit evidence or findings, any unresolved points shall be raised and recorded in accordance with PTS Ltd procedures and processes for corrective actions, complaints and appeals and Terms of Business. The Complaints, Appeals and Disputes Policy is available for reference on the PTS website.

<https://www.ptsinternational.co.uk>

Audit Report

PTS Ltd shall provide a written report following each audit to the Applicant. The audit team may identify opportunities for improvement but not specific solutions to be implemented. Ownership of the audit report shall be retained by PTS Ltd.

The Lead auditor / technical expert shall ensure that the audit report is prepared from all evidence as submitted from the audit team and shall also be responsible for its content. The audit report shall provide an accurate, concise, and clear record of the audit to best enable an informed decision on the Applicant's readiness for the next stage of the assessment process. PTS Ltd shall retain ownership of the audit reports.

PTS Ltd shall review the corrections, corrective actions and identified causes as submitted by the Applicant to determine if these are acceptable against the matters raised in the non-conforming audit report. PTS Ltd shall verify the effectiveness of any correction and corrective actions taken. The evidence obtained to support the resolution of non-conformities shall be recorded on the Corrective Action Report Form.

The Applicant shall be formally informed of the result of the review and verification and advised if an additional full audit, an additional limited audit, or any additional documented evidence (to be confirmed during future audits) will be needed to verify effective corrections and corrective actions.

Verification of effectiveness of corrections and corrective actions can be carried out based on a review of documented information provided by the Applicant, or when appropriate through onsite verification by a member of the audit team.

Application Submission

Applicants (whether manufacturer or contractor) will already be certified to a recognised Certification Body BS EN ISO 9001: 2015 Quality Management System. If services for the work carried out are supplied under MCHW SHW clauses which require certification to a relevant National Highway Sector Scheme, then either the Applicant (if the contractor) or any approved external contractors shall be registered to that NHSS (specific requirements are detailed in Stage 3 and Appendix 1).

Applicant's details and acceptance shall be provided by submitting the relevant PTS forms prior to proceeding and providing the following:

- Application Form
- Client Information Form
- Purchase Order
- Product Assessment Documentation as detailed in Stage 1 Documentation Review (see below)
- Certificate for existing Quality Management System (QMS) to BS EN ISO 9001: 2015
- Certificate of Factory Production Control (FPC) if manufacturer and/or
- Certificate of National Highway Sector Scheme (NHSS) if contractor

A Contract Review then commences to ensure PTS Ltd can accommodate the Applicant's requirements as detailed in PTS Process W4 Certification. The review process is ongoing throughout the certification progression.

Stage 1 Documentation Review

The Stage 1 audit is performed by a lead auditor, following receipt of Applicant's documentation and authorisation to proceed. This audit is undertaken either by a review of the documentation supplied to PTS Ltd head office or by a visit to the Applicant's premises.

The Documentation Review includes the most recent recognised third-party BS EN ISO 9001:2015 QMS Audit Report, and FPC Audit report, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement. Copies of Registration Certificate for QMS and FPC to be provided.

Review the contractors most recent third-party National Highway Sector Scheme audit report, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement. Review of registration on the [UKAS certs check](#) website.

The Applicant shall confirm access to all applicable external documents in line with BS EN ISO 9001:2015 requirements.

In addition to the audit report, PTS Ltd will also require information to satisfy the QMS details as required in line with MCHW SHW the Quality Plan (details below) and Method Statement, as necessary.

If external contractors are used, registration to and the most recent third-party applicable National Highways Sector Scheme Audit Report comprising non-conformities (if any), close-out, observations, and any identified opportunities for improvement, is also required.

Applicants Quality Plan to satisfy the QMS details as required by BS EN ISO 9001 and incorporating the requirements of MCHW SHW Clause 104. The Applicant shall inform PTS of any additional conditions as detailed and in documented in MCHW SHW Appendix 7/1.

To ensure the Applicants product(s) are assessed in line with MCHW SHW 104.15 and 104.16 PTS will follow the points as detailed within the relevant sections of Clause 104 and MCHW SHW Series 900 to support the assessment process. The Applicants Quality Plan shall incorporate the product(s) and applicable requirements to the works and the individual requirements of the relevant Sector Scheme Documents for Quality Management in Highway Works to thereby demonstrate leadership engagement, competencies and continuous improvement and shall include details of the “hold points” - SHW 104.6 and the product to be assessed and production procedures:

- The Applicant shall ensure the Quality Plan includes hold points where no further work shall proceed without written approval of a designated person within the Applicant’s management, who shall also be named in the Quality Plan
- The Applicant shall ensure the Quality Plan and associated quality documentation are made available to all parties involved with the works
- The Quality Plan shall include:
 - Organisation and Management structure, including organization of the contract, line command and communication links between parties involved in the contract on- and off -site. Names, roles, responsibilities and authority of principals and key personnel
 - Identification of the parts of the QMS relevant to the works
 - Supply chain management – including control and communications processes, assessment of the suppliers and subcontractors QMS and quality control capabilities, monitoring arrangements, review and acceptance of work items being undertaken by the subcontractor or supplier
 - o Details and scheduling of Quality Plan required by relevant NHSS or other QMS schemes
 - o Details of registration to relevant NHSS or other QMS schemes
 - Document Control – controls relevant to the Works, including the control and processing of testing results, materials and workmanship certification, quality records in accordance with SHW 104.7
The control and scheduling of all documentation as required by the Specification and submitted to the Overseeing Organization as required throughout the works and the control and processing of test results that confirm the verification of the product within the design requirements for their product. This information will be used to validate that subsequent production meets the design requirements.
 - Resource management – including details of relevant skills and experience of personnel involved in the works. Relevant training and/or competency assessment certificates and/or registration/skills cards for the workforce as required in the relevant NHSS in accordance with SHW104.10 or scheduling of when they will be provided to the Overseeing Organization for acceptance prior to the commencement of relevant work.
 - Method Statements – details information for the installation of the product(s), a copy of which shall be submitted to PTS prior to the Stage 3 witnessed on site installation of the product(s).
- The Method Statement shall contain:
 - o Method statement for installation
 - o Limitations in respect to weather and substrate conditions
 - o General installation procedures
 - o On site storage and handling of materials
 - o On site quality control / assurance procedures and associated documentation

Note: Method Statement – Please refer to Stage 3 and Appendix 1 for the specific requirements

 - Hold Points as per MCHW SHW Clause 104.6

The lead auditor / technical expert shall submit their findings and recommendations in a written report. The report provides a focus for planning Stage 2 by gaining understanding of the system to determine the preparedness for the Stage 2 audit.

The interval between the Stage 1 and Stage 2 audits is determined with consideration given to the needs of the Applicant to resolve areas of concern identified during the Stage 1 audit. PTS Ltd also considers whether any revisions are required to its arrangements for the Stage 2 audit.

Stage 2 - Audit of BS EN ISO 9001:2015 Section 8.3 process 'Design and Development of Products and Services' & traffic speed reflection crack measurement survey

The Stage 2 audit is performed at the Applicant's premises/production location by either a lead auditor with technical expertise relevant to the scheme or by a lead auditor who is assisted by a technical expert.

The Stage 2 Audit comprises:

- An audit of the process supporting the Applicants system, its technology focusing on BS EN ISO 9001:2015 Section 8.3 process 'Design and Development of Products and Services' and how that interacts with leadership, resources, and contract review: this applies equally to both manufacturer and contractor
- The audit will examine and document the production / installation process following the design implementation and associated with the production test data to assess for compliance with the requirements given in this Guideline and Criteria document
- A review of product UKCA / UKNI / CE Marking and DoP
- PTS Ltd shall review the Applicant's documented information – processes and procedures for the planning. Inputs, controls, outputs and change management of the design and development activities,
- Its process stages, resource needs, associated responsibilities and authorities, reviews, verification and validation activities
- Development activities including statutory and regulatory requirements, standards, or codes of practice.
- Outputs of the results achieved, its monitoring and measurement of requirements, reviews / evaluation of the results.
- Verification that the outputs have met the input requirements; validation activities to ensure that the resulting product/material has met the requirements for the specified application or intended use.
- Defined the characteristics of the product/material that are essential for their intended purpose and their safe and proper provision.
- Changes shall have been identified, reviewed, and authorized to the extent necessary to ensure that there is no adverse impact on conformity requirements. This will ensure a consistent product and confirm conformity with the production Factory Production Control Quality Plan.

If the product includes hazardous substances, (i.e., ones that require special precautions to be taken under the COSHH Regulations), the Applicant must supply all the relevant data. No formal assessment of the suitability of this data, in terms of the COSHH regulations, is undertaken by PTS Ltd. However, this data will always be required by PTS Ltd and its subcontractors to ensure the safe use and testing of the product in their laboratories. The Applicant's instructions for use must include all necessary data to allow the safe use of the product.

The lead auditor / technical expert shall submit their findings and recommendations as a written report. This report will provide the status of the Applicant activities in line with BS EN ISO 9001:2015 Section 8.3 'Design and Development of Products and Services'.

The time frame for resolving areas of concern that have been identified during the Stage 2 audit shall be agreed and details of the proposed corrective action submitted to PTS Ltd. Evaluation and implementation of any corrective actions shall be reviewed prior to the Stage 3 audit.

Pre-installation traffic speed reflection crack measurement survey

The data from a traffic speed reflection crack measurement survey (using a laser crack measurement system) is to be analysed to identify cracks which satisfy the following criteria:

- (i) Cracks with a minimum crack length of 300mm AND
- (ii) Cracks with severity (width) equal to or greater than 1mm AND
- (iii) All cracks satisfying the above criteria are assumed to be reflection cracks until verified by review of the crack map

The amount of reflection cracking shall then be expressed as the total length of reflection cracking for each 100m section of the survey.

NB: The output of any alternative reflection cracking survey must be compatible with the output from the laser crack measuring system (used to undertake the reflection crack measurement survey) to enable before/after comparisons to be carried out.

Note: Subject to PTS approval, UKPMS DVI survey data may be considered as equivalent to the output of the laser-based crack measurement survey with respect to Interim Certificates only.

Stage 3 - Trial Installation Method Statement Audit

The Applicant shall contact PTS and the relevant interested parties to arrange a mutually agreeable date for the product scheme installation trial following the completion of the pre-installation traffic speed reflection crack measurement survey

The scheme installation trial for the product will be organised to demonstrate the combined practicability of the product and it is when this is undertaken in accordance with the Applicant's installation procedures.

The scheme installation trial (if not NH site, the trial shall be equivalent to an NH site and confirmed as such) will be witnessed and assessed by PTS Ltd to cover the installation procedures as defined in the Applicant's / contractors Installation Method Statement.

The Applicant shall confirm to PTS Ltd and the relevant interested parties prior to the agreed date of the scheme installation trial, details of:

- The start date(s) of the planned works
- The scheme installation site address(s) and their road type/category
- A site / location plan for the installation site
- Any GIS/CAD plans for the site
- Relevant Product Health and Safety data
- The Product Installation Method Statement. This comprises all information required under the Quality Plan in Stage 1, this may include substrate condition and suitability assessment, surface preparation, installation, after-care, etc.

- The competencies of the contractor (relevant National Highways Sector Scheme as per Section 8 of Code of Practice for Geosynthetics and Steel Mesh for Asphalt Reinforcement (Interlayers), Issue 2, October 2018, RSTA ADEPT). The contractor shall provide the most recent third-party relevant Sector Scheme audit comprising non-conformities (if any), close-out, observations, and any identified opportunities for improvement.

In the case of production only, the product shall only be installed by the applicant or their approved contractors who shall be registered to the relevant National Highway Sector Scheme.

The installation will be witnessed and assessed by PTS's lead auditor with the technical expertise for the scheme or by a lead auditor assisted by a technical expert to cover the installation procedures as defined in the Applicant's Installation Method Statement (IMS) along with the process control and evidence of approved suppliers / contractors. The IMS shall contain substrate condition and suitability assessment, substrate preparatory works, any defects remedial, installation procedures, air/road surface temperatures and any limitations.

The Applicant must arrange for a recognised research body or testing laboratory, accredited by UKAS to ISO/IEC 17025 for the scope of required sampling and testing, to undertake validation of the system from the trial installation.

The lead auditor / technical expert shall submit their findings and recommendations in the form of a written report. Any areas of concern identified during the IMS audit shall be agreed and details of required corrective action submitted to PTS Ltd.

The technical aspects of the IMS audit, including photography, site locations and details, contractors, etc. will be summarised in a standalone report prepared by PTS Ltd, a copy of the As Built Manual record data shall also be included in the report as support reference. Detail will be referenced in the Assessment Certificate and made available to the PTSTSP / Overseeing Organisation upon request.

The as-built manual (to be produced within 30 days after completion of the work) shall incorporate all relevant information, including the following:

- (i) the product name;
- (ii) all test results (including site investigation data and records from the reflection crack measurement survey and the analysis undertaken)
- (iii) variations to the design proposal and those necessitated by local conditions (which need to be agreed prior to installation);
- (iv) a record of installation control carried out;
- (v) weather information;
- (vi) unforeseen problems encountered;
- (vii) a list of complaints, if any, from the general public or road users;
- (viii) any other information that the Overseeing Organisation may reasonably require to be included, as previously agreed.

Records are to be sent to National Highways (a copy of the as built manual will be incorporated into the stage 3 report)

Stage 4 - Review of Technical Data Relating to Design Inputs Verification and Consolidate Case Studies of the 'Scheme' / 'Trial' Product Performance Trial /Visual Condition Inspection of selected case studies

No history of use

- A five-year product performance trial will be required if it cannot be demonstrated that the product has performed satisfactorily over a five-year period on sites representative of its intended end use. The installation will be assessed as described above in Stage 3.

History of use – retrospective process

- Where an assessment certificate already exists or an interim certificate is being sought for a product and an installation trial has already been carried out, an As-Built Manual (or data equivalent to an As Built Manual) will be required, to ensure quality conformance of the product at its installation and any subsequent monitoring. Fully traceable details from the previous assessment, existing site details where the product was used shall be submitted for review by PTS Ltd through inspections and technical information will be gathered on the product.

The suitability of the data and evidence from other assessments or trials will be made against the requirements of this PTSPAS Guidelines and Criteria Document. The findings and associated information will be consolidated in a standalone Stage 4 Technical Report prepared by PTS Ltd as part of the assessment process. This Technical Report shall be referenced in the Assessment Certificate and made available to the PTSTSP / Overseeing Organisation upon request.

Acceptance of data / consolidation of technical support information

PTS Ltd will accept test data from laboratories or bodies with UKAS accreditation to ISO/IEC 17025 for specific tests, provided they are performed on samples that can be traced to the manufacturing location and the site identified. If an innovative methodology has been used, which has not been accredited, then the testing body must submit the test method procedure to PTS Ltd to ensure that the evaluation activities are managed in a manner which provides confidence in the results, and that records are available to justify the confidence.

Adopted laboratory test methods and procedures shall be as detailed in Appendix 1, with any additional relevant tests if required, as agreed with the Applicant and the PTSTSP.

Technical Reports are accepted from recognised PTS Technical Experts / Lead Auditors – with technical expertise in the area under assessment / External Technical Experts / Recognised Research Bodies.

Interim Certification

Where a pre-existing portfolio of evidence for a Product that has been in service for at least five years satisfies specific requirement of Stage 4 and the review and installation(s) of the same Product satisfies the requirements of Stages 1 to 3, a Stage 5 report will be prepared and submitted with a draft INTERIM Certificate for approval by PTSTSP.

Stage 5 - Review of Details

Reports generated from Stages 1 to 4, any comments, non-conformities and, where applicable, the correction and corrective actions taken, together with any conditions or observations, are reviewed by the lead auditor and technical expert to confirm that all evaluations stages have been carried out and a Stage 5 Report is raised.

Evidence will be required that shows compliance with the Guidelines and Criteria Document requirements, and those specified in associated standards / normative documents. A request for certification review can then be submitted to PTSPAS Management Committee.

Stage 6 - Submission to PTS PAS Management Committee

The Stage 5 Report, relevant information, and draft certificate are submitted to the PTS PAS Management Committee, who shall conduct a review of the submitted detail for content and accuracy for all the information

provided which relates to the application and evaluation of the named product assessment and certification requirements.

PTS Ltd shall be solely responsible for, and shall retain authority for, all decisions relating to the assessment and certification process. The decision to initially issue a certificate in draft form to the PTSTSP shall be made by an independent PTS PAS Management Committee in accordance with PTS Process W4 Certification and W15 PTS Product Assessment and Certification as required in PTS Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16.

Stage 7 - Draft Certificate Submission to PTSTSP

The Stage 5 Report and the draft certificate are submitted to PTSTSP in line with the PTSPAS processes. The role of PTSTSP is to provide technical oversight on the submitted evidence and to review and comment on the draft certificate to ensure compliance with the Guidelines and Criteria Document requirements and those specified in associated standards / normative documents. Interim test data may be submitted for consideration as part of or in place of the required submission. Acceptance of this data will be at the discretion of the PTSTSP.

On completion of their individual evaluations, each PTSTSP panel member will forward their responses / comments raised to PTS Ltd. This process is as specified in the PTS Technical Supervisory Panel Instructions.

Stage 8 - Consolidation of Amendments / Approval

At this stage, PTS Ltd shall collate all the information, review the details, and assess whether:

- (i) Additional information or amendments are required or
- (ii) The initial information as submitted is accepted, and Stage 9 commences.

The PTSTSP will review any additional / amended information submitted and confirm the information satisfies the requirements to proceed to Stage 9.

Certification Decision

At this point, final certification documentation shall be prepared as necessary by PTS Ltd.

Approval for the proposed certificate issue shall be sought from the PTSTSP following completion of all necessary requirements and acceptance of notification of the proposed publication date.

Stage 9 - Assessment Certificate Authorisation

Prior to issuing and publication, and provided that no concerns were raised with the conduct of the certificate generation by the PTSTSP, the Certificate shall be endorsed by PTS Management Committee.

Stage 10 - Certification Documentation

Issue of Interim Certificates: With Evidence of Five-Years service, from retrospective data which predates the application to PTS, a PTSPAS INTERIM certificate may be issued on acceptance of information as detailed in Stage 4.

Issue of Certificates: At the completion of the Five-Year Defect-Monitoring Period, a PTSPAS certificate may be issued.

The formal Certification documentation issued by PTS Ltd shall convey (as applicable to the product requirements):

- Certification Authority (Name and Address)
- 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*
- Product Name
- Specialist Group (SG) Reference and certificate number
- Date certification is granted and expiry date of certification
- Annual surveillance audit date
- Name and address of the Certificate Holder organisation
- Signature or other defined authorisation of the person(s) of PTS Ltd assigned such responsibility
- Product Application within the scope of the assessment and certification
- Material's designation
- Assessment of installed properties
- Assessment of in-service properties
- Installation Method
- As Built Manual
- Technical Data
- Design and Development – Planning / Inputs / Verification / Validation / Changes
- Test Data
- Bibliography
- Conditions of Certification
- Any other information required by the certification scheme

*The PTSPAS scope will be described on the published certificates as 'PTS Product Assessment and Certification as part of Product Acceptance Scheme MCHW SHW Volume 1 Clause 104.15 and 104.16'.

PTS Ltd reserves the right to amend or supplement the Certificate headings as required for the Assessment and Certification of a product at any time if deemed as required after consultation with PTSTSP.

The Certificate issued will be subject to the PTS Terms of Business, which can be found on the PTS Ltd website: <https://www.ptsinternational.co.uk>

Stage 11- Publication of Certification Documentation

Assessment and Certification Certificates for "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" are issued to the Certificate Holder and published on the PTS Ltd website:

<https://www.ptsinternational.co.uk>

Stage 12 - Annual Surveillance Requirements / Agreement and Implementation of Validation

PTS Ltd shall carry out assessments in line with internal procedures and processes at the Certificate Holders production location(s) to ensure that the production processes quality control and product conformity remain

consistent as detailed in the design specification with onsite visits of installed material to conduct a visual condition survey. Assessments may be carried out remotely in times where access to locations are not permitted.

PTS Ltd shall conduct annual surveillance audits in accordance with the PTS Assessment and Certification System, the MCHW SHW, Codes of Practice, Guidelines and Criteria documents, associated specifications, standards and normative documents, PTS Ltd policies, procedures, and processes.

PTS shall ensure that the procedures and controls defined at the outset continue to apply to ensure ongoing validity of product requirements as in accordance with the Guidelines and Criteria Document, relevant standards, and normative documents. Surveillance audits cover the PTSPAS requirements as above with a product re-certification after a minimum of five years.

Review of Validation Methodology to be adopted during all surveillance audits.

The Annual Assessments will follow the requirements as detailed in PTS Process W3 On Site Audit and the Visit Plan.

During the validity of any Certificate, the Certificate Holder is responsible for the quality assurance in maintaining their ISO9001:2015 registration, with control of the production at the manufacturing location(s) as declared to PTS for the named product taking account of the product having its performance declared under a UKCA / CE mark. PTS shall review the most recent third-party QMS Audit Reports, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement.

PTS Ltd shall also review the contractors third-party National Highway Sector Scheme audit reports, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement to ensure ongoing validation of the demonstration of fulfilment of product and installation requirements.

In addition to the above, the following will form part of the surveillance requirements:

- Organisation / production responsibility and authority / management of change
- Customer Feedback / complaints
- Quality Plan - production operations, processes, and controls
- Product quality and performance
- Component changes
- Specification changes
- Installation Method Statement - changes
- Corrective action-based changes
- Use of PTS Certification Mark / Logo

Periodic monitoring is carried out in accordance with Appendix 1 and surveillance requirements.

Non-conforming manufactured product and/or installed product identified during surveillance audit(s), or as a result of third-party notification, or identified as a result of the Certificate holder's own quality system, shall be discussed with the Certificate Holder to ensure that the evidence arising is accurate and that the nature of the non-conformities are fully understood and acted upon within agreed timescales and evidence of the corrective action taken shall be submitted to PTS Ltd using the Corrective Action Report Form.

The Certificate may be suspended for the period during which the Certificate Holder analyses and advises on the cause of the non-conformity and provides the appropriate corrective action to be taken to eliminate the non-conformity. Any subsequent Suspension or withdrawal of a Certificate will be displayed on the PTS website.

The assessment report as compiled by the lead auditor/ technical expert, shall describe the scope of the assessment. The body of the report will include areas of positive aspects, observations, and comments. Non-conformities and
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areas for correction are identified. The report also incorporates the three-year programme plan and the auditor's recommendation. Assessment reports are reviewed by the PTS PAS Management Committee for their technical content and accuracy in line with the Certificate.

The certificate holder must inform PTS Ltd without delay of matters that affect the performance of the assessed product and/or associated management system including;

- Proposed changes to the specification of the product or components,
- Changes to performance levels, scope of operations under the certified system,
- Changes to the management / production / assessment system and processes,
- Changes relating to legal, commercial organisation status or ownership, organisation, and management (key managerial, decision making or technical staff), contact address and sites,

Any certificate change requirement is considered on an individual basis, with respect to the impact of any such changes on the certification of the product.

The certificate holder agrees that changes will not be implemented until PTS Ltd have reviewed the proposed change and have determined if investigation/additional assessment is required. The certificate holder will be responsible for any costs so arising.

PTS Ltd will inform the certificate holder of any relevant changes to this Guidelines and Criteria Document, the revised documentation will be published on the PTS Ltd website. <https://www.ptsinternational.co.uk>

Subsequent 3-year re-certification audit

The three-yearly re-certification audits incorporate the Annual Surveillance PTSPAS requirements along with specific visual inspections, related data collection and any additional surveillance requirements as required in accordance with Appendix 1.

5-year Post Installation Visual Assessment Survey

A five-year post installation reflection crack measurement survey of the surface course is required, in accordance with MCHW SHW Clause 936.

A PTSPAS certificate may be issued after five years subject to the surface course laid at the time of installation of the geosynthetic or steel mesh having no more than 10% of the reflection cracking that was present before the installation of the geosynthetic or steel mesh.

PTS Ltd shall be responsible for, and shall retain authority for, all its decisions relating to the assessment and certification process.

Data storage / accessibility will be retained in line with Legislation, regulatory, standard, and PTS Ltd policy, and procedure requirements.

Suspension / Withdrawal of Certificate

PTS Ltd shall suspend or withdraw the certificate if:

- The Certificate Holders management system / process / product(s) has persistently or seriously failed to meet the PTSPAS requirements as detailed in PTS Ltd Processes and PTS Ltd Terms of Business.
- The Certificate Holder does not allow surveillance or recertification assessments to be conducted at the required frequencies
- The Certificate Holder has voluntarily requested a suspension.

The Certificate Holder shall be notified in writing of such a decision in writing by a member of the PTS Ltd Certification Management team. The letter shall state whether it is intended for suspension or withdrawal, the reason(s) and any additional actions required. PTS Ltd shall allow 30 days for the Certificate Holder to respond before suspension is implemented. The Certificate Holder provide appropriate corrective action that is acceptable to PTS Ltd, accept the suspension or withdrawal or appeal the decision.

When a decision on suspension / withdrawal has been made, that suspension / withdrawal shall remain effective until the appeal process is completed, and a decision has been reached. PTSTSP shall be informed. If the Certificate Holder fails to act within the 30 days, withdrawal of the certification shall be immediate.

Suspensions are intended to be temporary. Suspensions shall be processed as withdrawals if re-certification is not completed by the next assessment date or within a 6-month period, whichever comes first.

Whilst suspended, the Certificate Holder loses the privilege of delivering the certified products / processes under the Certificate. The letter of suspension details the restrictions imposed on the Certificate Holder as a result of the suspension.

The Certificate Holder must refrain from promoting its certification status during suspension / withdrawn activities in any promotional materials, letterhead, or any other documents or media. The Certificate Holder shall also remove any displayed certificate on its premises or media format.

PTS Ltd shall make the suspension or withdrawal status of the Certificate Holder publicly accessible and in addition where other parties are involved such as regulatory bodies, those shall also be notified by PTS Ltd of the changes in the certification scope and shall take any other measures it deems appropriate during Certificate Holder suspension/ withdrawal.

Failure to resolve issues that caused the Certificate to be suspended in the established time frame shall result in withdrawal of the Certificate.

A PTS Ltd Certificate Holder may voluntarily suspend or withdraw its certificate at any time by providing written notice to PTS. Requests must clearly state the reason. Requests will normally be processed within 10 days. Any fees/ monies due shall be payable to PTS at this time.

PTS Ltd shall take necessary actions and modifications to formal certificate documents, public information, authorisations for use of marks etc., to ensure the suspension / withdrawal is clearly communicated and details clearly specified in its documentation and public information.

An immediate suspension of the Certificate Holder's Certificate shall be imposed by PTS Ltd when there is evidence to support that one or any number of critical non-conformances have been found or the Certificate Holder has declined any additional surveillance by PTS Ltd. The Certificate Holder can appeal the decision for an immediate suspension according to the appeal process, available on request.

Bibliography

BS EN ISO/IEC 17021-1:2015 Conformity assessment. Requirements for bodies providing audit and certification of management systems. 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

BS EN ISO/IEC 9001:2015 Quality Management System Requirements

BS EN 15381:2008 Geotextiles and geotextile related products – Characteristics required for use in pavements and asphalt overlays

BS594987:2015+A1:2017 Asphalt for Roads and Other Paved Areas. Specification for Transport, Laying, Compaction and Product Type Testing Protocols

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 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)

BS EN 12273:2008 Slurry Surfacing. Requirements

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

Manual of Contract Documents for Highways Works (MCHW) Volume 1 Specification for Highway Works, Series 100 Preliminaries, May 2014

Manual of Contract Documents for Highways Works (MCHW) Volume 1 Specification for Highway Works, Series 900 Road Pavements – Bituminous Bound Materials, July 2021

RSTA ADEPT Code of Practice for Geosynthetics and Steel Mesh for Asphalt Reinforcement (Interlayers), Issue 2 October 2018

PTS Technical Supervisory Panel Instructions

W15 PTS Product Assessment and Certification as part of Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16

V4 PTS Procedure Audit Plan

W3 PTS Process - On Site Audit

PTS S10 Internal Guidance Note MFV/01 Crack Analysis and Interpretation

PTS Clause 936 Pre-Installation and 5-year Compliance Survey Report

Design Manual for Roads and Bridges (DMRB) CD 227 Design for Pavement Maintenance, Revision 0

Design Manual for Roads and Bridges (DMRB) CS 229 Data for Pavement Assessment, Revision 0

Design Manual for Roads and Bridges (DMRB), CS 230, Pavement maintenance assessment procedure, Revision 0

UKPMS User Manual, Volume 2: Visual Data Collection for UKPMS, October 2009 Chapter 8: Detailed Visual Inspection (DVI)

Appendix 1 – Guidelines and Criteria Document Requirements

**PTS PRODUCT ASSESSMENT AND CERTIFICATION (PTSPAS)
AS PART OF PRODUCT ACCEPTANCE SCHEME
MCHW SHW VOLUME 1 CLAUSE 104.15 AND 104.16**

**PTS SG 936 FOR THE ASSESSMENT AND CERTIFICATION OF GEOSYNTHETICS AND
STEEL MESHES: INSTALLATION AND END PRODUCT PERFORMANCE TO MCHW SHW
CLAUSE 936**

PTS Ltd in consultation with PTSTSP, reserves the right to amend or supplement the tests required for PTSPAS Assessment and Certification at any time if required. The cost of all further tests will be borne by the applicant.

Note: If the content of any contract specific appendices results in the specification of a product property being outside of the limits given for that property within the MCHW SHW 936 Specification, PTS reserve the right to consider such designs to be outside of the scope of assessment and certification.

PTS refer to all current versions of standards, CoP, normative documents at the time of assessment(s).

| Relevant Documents | |
|--------------------------------|---|
| Specification | Manual of Contract Documents for Highway Works Clause 936 July 2021 |
| MCHW Referenced Documents | BS EN 15381 BS 594987 MCHW SHW Clause 907 BS EN 12591 BS EN 14023 BS EN 13808 BS EN 12272-1 BS 1707 BS EN 12273 RSTA Code of Practice for Geosynthetics and Steel Meshes |
| Code of Practice (CoP) | Code of Practice for Geosynthetics and Steel Meshes, October 2018, RSTA ADEPT |
| 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 |
| DMRB | CD227 Design for Pavement Maintenance CS229 Data for Pavement Assessment CS 230, Pavement maintenance assessment procedure |
| UKPMS | UKPMS User Manual, Volume 2: Visual Data Collection for UKPMS, October 2009 Chapter 8: Detailed Visual Inspection (DVI) |
| PTS Procedure | Analysis of Crack Data |

| Application Submission | |
|------------------------|--|
| | <ul style="list-style-type: none"> • Application Form, • Client Information Form • Purchase Order • Product Assessment Documentation as detailed in Stage 1 Documentation Review (see below) • Certificate for existing Quality Management System (QMS) to BS EN ISO 9001: 2015 / Factory Production Control (FPC) / National Highway Sector Scheme (NHSS) requirements |

**Stage 1
Documentation Review - BS EN ISO 9001: 2015 / NHSS**

| | |
|---------------------------------|--|
| Quality Management System (QMS) | <p>Review of Applicants (whether manufacturer or contractor) most recent third-party BS EN ISO 9001:2015 QMS Audit Report, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement. demonstration of leadership engagement, competencies, and continuous improvement.</p> <p>BS EN ISO 9001:2015 QMS Certificate</p> <p>Where the Applicant is the Manufacturer, a review of most recent third-party Factory Production Control FPC Audit Report, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement shall be carried out.</p> <p>FPC Certificate</p> <p>All contractors review of the product(s) most recent third-party National Highways Sector Scheme 13 Audit Report comprising non-conformities (if any), close-out, observations, and any identified opportunities for improvement. Registration of NHSS Scheme on The UKAS Cert Check Website</p> <p>Applicants (whether manufacturer or contractor) Quality Plan to satisfy the QMS details as required by BS EN ISO 9001/NHSS and incorporating the requirements of MCHW SHW Clause 104. The Applicant shall inform PTS of any additional conditions as detailed and in documented in MCHW SHW Appendix 1/24 for the Stage 3 scheme installation trial.</p> <ul style="list-style-type: none"> – The Applicant (whether manufacturer or contractor) shall ensure the Quality Plan includes hold points where no further work shall proceed without written approval of a designated person within the Applicant’s management (whether manufacturer or contractor), who shall also be named in the Quality Plan – The Applicant (whether manufacturer or contractor) shall ensure the Quality Plan and associated quality documentation are made available to all parties involved with the works – The Quality Plan shall include: <ul style="list-style-type: none"> • Organisation and Management structure, including organization of the contract, line command and communication links between parties involved in the contract on- and off-site. Names, roles, responsibilities and authority of principals and key personnel • Identification of the parts of the QMS relevant to the works • Supply chain management – including control and communications processes, assessment of the suppliers and subcontractors QMS and quality control capabilities, monitoring arrangements, review and acceptance of work items being undertaken by the subcontractor or supplier • Details and scheduling of Quality Plan required by relevant NHSS or other QMS schemes • Details of registration to relevant NHSS or other QMS schemes • Document Control – controls relevant to the Works, including the control and processing of testing results, materials and workmanship certification, quality records in accordance with MCHW SHW 104.7 |
|---------------------------------|--|

Stage 1

Documentation Review - BS EN ISO 9001: 2015 / NHSS

Quality Management System (QMS) cont...

- The control and scheduling of all documentation as required by the Specification and submitted to the Overseeing Organization as required throughout the works and the control and processing of test results that confirm the verification of the product within the design requirements for their product. This information will be used to validate that subsequent production meets the design requirements.

- Resource management – including details of relevant skills and experience of personnel involved in the works.

Relevant training and/or competency assessment certificates and/or registration/skills cards for the workforce as required in the relevant NHSS in accordance with MCHW SHW104.10 or scheduling of when they will be provided to the Overseeing Organization for acceptance prior to the commencement of relevant work

- Method Statements – details information for the installation of the product(s), a copy of which shall be submitted PTS prior to the Stage 3 witnessed on site installation of the product(s).

The Method Statement shall contain:

- Method statement for installation
- Limitations in respect to weather and substrate conditions
- General installation procedures
- On site storage and handling of materials
- On site quality control / assurance procedures and associated documentation

Note: Method Statement – Please refer to Stage 3 and Appendix 1 for the specific requirements

- Hold Points as per MCHW SHW Clause 104.6

Stage 2

BS EN ISO 9001: 2015 SECTION 8.3 – Design and Development & Traffic Speed Reflection Crack Measurement Survey

Planning Evidence

Review of evidence supporting the technology focusing on BS EN ISO 9001:2015 Section 8.3 process 'Design and Development of Products and Services' and how that interacts with leadership, resources, and contract review to ensure that the design and development was a planned process.

This means an objective development of a project plan, identification of resources required and a close out report detailing stages including verification, validation, and change management

The audit will examine and document the production process following the design implementation and associated production test data to assess for compliance with the requirements given in this Guideline and Criteria document.

Note: Site(s) outside the control of NH may be recognized as equivalent to sites on the NH network subject to PTS TSP approval. Specific areas of equivalence would be: a UK location and traffic loadings / construction thicknesses.

| Stage 2 BS EN ISO 9001: 2015 SECTION 8.3 – Design and Development & Traffic Speed Reflection Crack Measurement Survey | |
|---|---|
| Sub-clause 936.4 Sub-clause 936.3 | <p>A review of product UKCA / UKNI / CE Marking and DoP (if applicable) will be undertaken</p> <p>The functional and performance requirements, information derived from previous similar design and development activities including statutory and regulatory requirements, standards, or codes of practice.</p> <p>Defined the characteristics of the product/material that are essential for their intended purpose and their safe and proper provision.</p> <p>Outputs of the results achieved, its monitoring and measurement of requirements, reviews/evaluation of the results. Verification that the outputs have met the input requirements; validation activities to ensure that the resulting product/material has met the requirements for the specified application or intended use.</p> <p>Where calculation's using proprietary software form part of the design process, the input parameters used, and the output provided shall be recorded and form part of the Stage 2 report.</p> |
| Sub-clause 936.4 Sub-clause 936.3 | <p>Changes shall have been identified, reviewed, and authorised to the extent necessary to ensure that no adverse impact on conformity requirements to ensure a consistent product to confirm conformity with the production Quality Plan for the Factory Production Control.</p> <p>If the product includes hazardous substances, (i.e., ones that require special precautions to be taken under the COSHH Regulations), the Applicant must supply all the relevant data. No formal assessment of the suitability of this data, in terms of the COSHH regulations, is undertaken by PTS Ltd. However, this data will always be required by PTS Ltd and its subcontractors to ensure the safe use and testing of the product in their laboratories. The Applicant's instructions for use must include all necessary data to allow the safe use of the product.</p> |
| Design inputs Sub Clause 936.4-9 | <p>Use of proprietary software to output key parameters required for the effective installation of the geosynthetic</p> <p>The geosynthetic or steel mesh BS EN 15381</p> <p>Bond Coats BS EN 12591</p> <p>Hot modified bitumen in accordance with BS EN 14023.</p> <p>Bitumen emulsion bond coats BS EN 13808</p> <p>Application rates given in BS 594987 – 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)</p> <p>Calibrated spray bar to conform to BS 1707:1989</p> <p>Carpet tile test carried out in accordance with BS EN12272-1:2002</p> <p>A slurry surfacing system complying with the requirements in BS EN12273.</p> <p>Levelling or regulating course shall be laid in accordance with the requirements of Clause 907.</p> |
| Sub-clause 936.4 Sub-clause 936.13 Sub-clause 936.3 | <p>UKCA/ UKNI/ CE Mark in accordance with BS EN 15381 and DoP</p> <p>Type and Function</p> <p>Quality Plan (to include weather conditions, transverse and longitudinal overlaps, bond condition)</p> <p>Initial bond strength – ensure that the geosynthetic or steel mesh 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</p> |

Stage 2**BS EN ISO 9001: 2015 SECTION 8.3 – Design and Development &****Traffic Speed Reflection Crack Measurement Survey**

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| <p>Traffic Speed Reflection Crack Measurement Survey</p> <p>Sub-clause 936.18</p> | <p>Prior to the scheme installation, a traffic speed reflection crack measurement survey (using a laser crack measurement system) is to be employed to establish the reflection cracking that is present before the installation of the geosynthetic or steel mesh, the survey vehicle shall be accredited to UKPMS SCANNER requirements or National Highways TRACS requirements. Alternatively, a Detailed Visual Inspection (DVI) to UKPMS standard may be considered equivalent.</p> <p>The survey shall identify cracks satisfying the definition of reflection cracking as follows: A reflection crack shall be defined as A crack with a minimum crack length of 300mm AND</p> <ul style="list-style-type: none"> • A crack with severity is equal to or greater than 1mm (width) <p>A Pre-Treatment Crack Map shall be generated from the output of the crack measurement survey.</p> <p>The following information must also be recorded if relevant to the structural performance of the installation or forms an element of the design consideration</p> <ul style="list-style-type: none"> • Type of the road and road construction • Traffic loads (number, type of vehicles, speed) and • Load bearing capacity of the traffic area • Location of trenches • Variations in temperature high and low recorded from Summer to Winter (climate) • Pavement type (flexible, rigid or semi-rigid) • Pavement properties (e.g. pavement stiffness MPa, subgrade information) • Drainage and groundwater information |
| <p>Sub-clause 936.17</p> | <p>The pre-treatment reflection cracking survey and crack map information shall form part of the as-built manual.</p> |

Summary of the Stage 3 and Stage 4 audit processes

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| <p>Stage 3</p> | <p>PTS Witnessed installation of product Installation to meet MCHW SHW 936, NHSS and CoP requirements Collation of all data required to create an as-built manual.</p> |
| <p>Stage 4</p> | <p>Following a successful five-year trial (or acceptance of retrospective data study for Interim Certification): Review of Technical Data Relating to Design Inputs, Verification and Consolidation of Case Studies of the Scheme / Trial Review of case study data prior to submission to PTSTSP.</p> |

RSTA CoP, Section 2.5 and Appendix G

The Applicant shall confirm to PTS Ltd (and the relevant interested parties) prior to the agreed date of the scheme installation trial, details of:

Verification method by which the design requirements of product, installation requirements, in-service requirement and installation method statement fitness for purpose are established.

- The start date(s) of the planned works
- The scheme installation site address(es), road category/ vehicle flow by class/ speed limit.
- The application location within the pavement structure.
- A site / location plan for the installation site
- Any GIS/CAD plans for the site
- Relevant Product Health and Safety data
- The Product Installation Method Statement. This comprises all information required under the Quality Plan in Stage 1, this may include substrate condition and suitability assessment, surface preparation, installation, after-care, etc.
- The competencies of the contractor (relevant National Highways Sector Scheme. The contractor shall provide the most recent third-party relevant Sector Scheme audit comprising non-conformities (if any), close-out, observations, and any identified opportunities for improvement. Or provide evidence of specific training received in the use and installation with the type of product.

The installation will be witnessed and assessed by PTS’s lead auditor with the technical expertise for the scheme or by a lead auditor assisted by a technical expert to cover the installation procedures as defined in the Applicant’s (whether manufacturer or contractor) Installation Method Statement (IMS) along with the process control and evidence of approved suppliers / contractors.

The Applicant must arrange for a UKAS accredited testing laboratory to ISO/IEC 17025 or recognized research bodies to undertake validation, this may include taking samples for laboratory testing from the installation.

The lead auditor / technical expert shall submit their findings and recommendations in the form of a written report. Any areas of concern identified during the IMS audit shall be agreed and details of required corrective action submitted to PTS Ltd.

The technical aspects of the IMS audit, including photography, site locations and details, contractors, etc. will be summarized in the form of a standalone report prepared by PTS Ltd, referenced in the Assessment Certificate and available to PTSTSP / Overseeing Organisation upon request

Sub-clause 936.12

Installation Requirements:

Installation shall be carried out following the protocol in NHSS 13, using appropriate mechanical equipment that is designed specifically to lay the material under tension. Installation shall be planned and carried out such that there is continuity of works and other surfacing operations are not impeded.

Stage 3

Scheme / Trial Installation Method Statement Audit

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| <p>Sub-clause 936.13</p> | <p>The Contractor's quality plan shall</p> <p>Record the weather conditions under which the geosynthetic or steel mesh can be installed</p> <p>Include detail of the transverse and longitudinal overlaps</p> <p>Include the requirement for the measurement and recording of the bond condition as stipulated in the quality plan and refer to the RSTA ADEPT Code of Practice for Geosynthetics and Steel Meshes</p> |
| <p>Sub-clause 936.14 RSTA CoP, Sec. 3</p> | <p>The geosynthetic or steel mesh interlayer 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 a geosynthetic, approval by the Overseeing Organisation (a Departure from Standard) will be needed.</p> |
| <p>RSTA CoP, Section 3.1</p> | <p>Any operations such as full depth replacement, local repairs, crack sealing etc should be completed prior to the interlayer installation and subsequent overlay.</p> |
| <p>MCHW SHW 104, NHSS 13, App. A1, Clause 907</p> <p>Sub-clause 936.9</p> <p>Sub-clause 936.10 RSTA CoP 5.2</p> | <p>Installation shall be carried out in accordance with MCHW SHW and RSTA CoP</p> <p>Preparation works for the site to receive the geosynthetic or steel mesh shall be in accordance with the Contractors/contractors Quality Plan as required</p> <p>Systems requiring a levelling or regulating course shall be laid in accordance with the requirements of Clause 907</p> <p>The surface to receive the geosynthetic or steel mesh shall be free of surface defects so as not to compromise the performance of the product system to be applied.</p> <p>Before binder 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.</p> <p>The surface to receive the geosynthetic or steel mesh shall be free of surface defects in accordance with the Contractor's Quality Plan</p> |
| <p>Sub-clauses 936.6-936.9</p> | <p>Bond coats shall be in accordance with Clause 936.6 to 9</p> |
| <p>Sub-clause 936.13, RSTA CoP</p> | <p>The Contractor 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</p> |
| <p>RSTA CoP, Sec. 5.3, Sub- clauses 936.12</p> | <p>The installation of the geosynthetic or steel mesh shall be carried out using appropriate mechanical equipment that is designed specifically to lay the material under tension without wrinkles or creases and brushing it firmly into the bond coat. Rolling out the interlayer by hand should be avoided except in the smallest or most inaccessible areas. Considerable care should be exercised to avoid creases in the laid fabric. In the event of a crease occurring this should be removed in accordance with the manufacturer's installation instructions.</p> |
| <p>Sub-clauses 936.15-936.16</p> | <p>Aftercare – as per Clause 936.15 and 936.16</p> <p>Masking shall be removed before surfacing operations commence. The geosynthetic or steel mesh shall be overlaid in the same shift, or as soon as practically possible.</p> |

| Stage 3 Scheme / Trial Installation Method Statement Audit | |
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| RSTA CoP, Sec. 5 | COSHH datasheets shall be made available to contractors by the manufacturer. |
| NHSS13 RSTA CoP, Sec. 8 | Contractors accreditation to NHSS13 |
| Sub-clause 936.17 | <p>Not more than 30 days after completion of the work, an as-built manual shall be provided. This forms part of the Stage 3 PTS Assessment Report data collection and retention.</p> <p>The As Built Manual shall incorporate all relevant information, including:</p> <ul style="list-style-type: none"> (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 sub- 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. <p>Records are to be sent to National Highways (a copy of the as-built manual will be incorporated into the stage 3 report)</p> |

| Stage 4 Review of Technical Data Relating to Design Inputs Verification and Consolidation of Case Studies of the Scheme / Trial | |
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| | <p>Product Performance Scheme/Trial Visual Condition Inspection of selected case studies: Review of Technical Data Relating to Design Inputs Verification and Consolidate Case Studies of the 'Scheme' / 'Trial'</p> <p>Product Performance Trial /Visual Condition Inspection of selected case studies</p> <p>1) <i>No history of use</i> A FIVE-year product performance trial will be required if it cannot be demonstrated that the product has performed satisfactorily over a FIVE year period on sites representative of its in- tended end use. The installation will be assessed as described above in Stage 3.</p> |

Stage 4

Review of Technical Data Relating to Design Inputs Verification and Consolidation of Case Studies of the Scheme / Trial

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| | <p>2) <i>History of use - retrospective process</i> Where an assessment certificate already exists or part approval has been sought from an overseeing organisation for a product and an installation trial has already been carried out, existing data relating to the trial with a portfolio of evidence equivalent to that of the current as-built manual (as detailed in MCHW SHW Clause 936), will be required for a pre-existing installation (including road category/ vehicle flow by class/ speed limit). This data may be used for assessment purposes under this stage pursuant to the issue of an INTERIM certificate.</p> |
| <p>Retrospective data submission: Interim Certification</p> | <p>Note 1: As reflection crack measurement surveys using a traffic-speed laser crack measuring system may not have been available prior to installation, an Interim Certificate may be considered on the basis of DVI (detailed visual inspection) data meeting UKPMS requirements, as an alternative to data from a laser crack measuring system-based survey.</p> <p>Note 2: Equivalent detailed visual inspection data may be submitted for review by PTS and the PTSTSP whose decision will be final.</p> |
| <p>Acceptance of data</p> | <p>The suitability of the data and evidence from other assessments or trials will be based on the requirements of this PTSPAS Guidelines and Criteria Document. The findings and associated information will be consolidated in a standalone Stage 4 Technical Report prepared by PTS Ltd and submitted to PTSTSP as part of the assessment process. This Technical Report shall be referenced in the Assessment Certificate.</p> <p>Acceptance of data / consolidation of technical support information PTS Ltd will accept test data from laboratories with UKAS testing accreditation to ISO/IEC 17025 or a PTS Ltd approved laboratory for the specific tests, provided they are performed on samples that can be traced to the manufacturing location and the site identified.</p> <p>If a PTS Ltd approved laboratory is employed, they will be required to submit a copy of their test method procedure to PTS Ltd to ensure that the evaluation activities are managed in a manner which provides confidence in the results, and that records are available to justify the confidence.</p> <p>Any additional relevant tests if required are to be as agreed with the Applicant and the PTSTSP.</p> <p>Technical Reports are accepted from recognised PTS Technical Experts / Lead Auditors – with technical expertise in the area under assessment / External Technical Experts / Recognised Research bodies.</p> |
| <p>Retrospective data submission</p> | <p>A portfolio equivalent to the as built manual (as detailed in MCHW SHW Clause 936), will be required for a pre-existing installation. The installation shall have at least five years trafficking, where an Interim Certificate is sought.</p> <p>Any retrospective submission of data shall be accompanied by a witnessed installation of the same Product by PTS</p> |

Stage 5 - Review of Details

PTSPAS Assessment personnel (auditors/technical experts) shall review the Reports as generated from Stages 1-4 to ensure all applicable requirements are complete and compliant with the Guidelines and Criteria Document requirements, and those specified in associated standards / normative documents. A Stage 5 Report is raised.

A draft interim or full certificate shall be drawn up based on the relevant information from the Reports.

The format of the draft certificate shall be as per Stage 10 – Certification Documentation A request for certification review is submitted to PTSPAS Management Committee.

Stage 6 - Submission to PTS PAS Management Committee

The Stage 5 Report, relevant information, and draft certificate are submitted to the PTSPAS Management Committee, who shall conduct a review of the submitted detail for content and accuracy for all the information provided which relates to the application and evaluation of the named product assessment and certification requirements.

If the issue of an Interim Certificate is proposed, this will be clearly stated along with the reasons for this decision.

The PTSPAS Management Committee shall in accordance with this Guidelines and Criteria Document, PTS internal processes: Process W4 Certification and W15 PTS Product Assessment and Certification as required in PTS Product Acceptance Scheme in accordance with MCHW

SHW Volume 1 Clause 104.15 and 104.16 review all the information and make the decision on acceptance and give authorisation to initially issue a certificate in draft form to the PTSTSP.

7 days' notice is given to the PTSTSP to advise of intention to submit information.

Stage 7 - Draft Certificate Submission to PTSTSP

The Stage 5 Report and draft certificate are submitted to PTSTSP in line with the process W15 PTS Product Assessment and Certification as required in PTS Product Acceptance Scheme in accordance with MCHW SHW Volume 1 Clause 104.15 and 104.16.

The role of PTSTSP is to provide technical oversight on the submitted evidence and to review and comment on the draft certificate to ensure compliance with the Guidelines and Criteria Document requirements and those specified in associated standards / normative documents.

The PTSTSP have 3 working weeks to conduct the review. On completion of their individual evaluations, each PTSTSP panel member will either forwards their response / comments to PTS Ltd (for addressing prior to publication of the certificate) or express their consent by default for publication to proceed, if they choose not to respond with any comment(s). This process is as specified in the PTS Technical Supervisory Panel Instructions.

Stage 8 - Consolidation of Amendments / Approval

At this stage, PTS Ltd shall collate all the information, review the details, and assess whether:

- (i) Additional information or amendments are required or
- (ii) The initial information as submitted is accepted, and Stage 9 commences.

The PTSTSP will review any additional / amended information submitted and confirm the information satisfies the requirements to proceed to Stage 9.

All additional information will be submitted to the PTSTSP for review. The PTSTSP have a further 3 working weeks to conduct this review.

On completion of their individual evaluations, each PTSTSP panel member will either forward their response / comments to PTS Ltd (for addressing prior to publication of the certificate) or express their consent by default for publication to proceed, if they choose not to respond with any comment(s) in line with PTS Technical Supervisory Panel Instructions. This will be their Certification Decision

Approval for the proposed certificate issue shall be sought from the PTSTSP following completion of all necessary requirements and acceptance of notification of the proposed publication date. PTS Ltd shall prepare the final certification documentation, as necessary.

Stage 9 - Assessment Certificate Authorisation

Prior to issuing and publication, and provided that no concerns were raised with the conduct of the certificate generation by the PTSTSP, the Certificate shall be endorsed by PTS Management Committee.

Stage 10 - Certification Documentation

The formal Certification documentation issued by PTS Ltd shall convey (as applicable to the product requirements):

- Certification Authority (Name and Address)
- 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*
- Product Name
- Specialist Group (SG) Reference and certificate number (Interim/ Full certificate status)
- Date certification is granted and expiry date of certification
- Annual surveillance audit date
- Name and address of the Certificate Holder organisation
- Signature or other defined authorisation of the person(s) of PTS Ltd assigned such responsibility
- Product Application within the scope of the assessment and certification
- Material's designation
- Assessment of installed properties
- Assessment of in-service properties
- Installation Method
- Technical Data
- Design and Development – Planning / Inputs / Verification / Validation / Changes
- Test Data
- Bibliography

Stage 10 - Certification Documentation

- Conditions of Certification
- Any other information required by the certification scheme

*The PTSPAS scope will be described on the published certificates as 'PTS Product Assessment and Certification as part of Product Acceptance Scheme MCHW SHW Volume 1 Clause 104.15 and 104.16'.

PTS Ltd reserves the right to amend or supplement the Certificate headings as required for the Assessment and Certification of a product at any time if deemed as required after consultation with PTSTSP.

The Certificate issued will be subject to the PTS Terms of Business, which can be found on the PTS Ltd website: <https://www.ptsinternational.co.uk>

Stage 11- Publication of Certification Documentation

Assessment and Certification Certificates for "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" are issued to the Certificate Holder and published on the PTS Ltd website: <https://www.ptsinternational.co.uk>

Stage 12 - Surveillance Requirements / Performance Monitoring / Agreement and Implementation of Validation

PTS Ltd shall carry out assessments in line with internal procedures and processes at:

- The Certificate Holders production location(s) to ensure that the production processes quality control and product conformity remain consistent as detailed in the design Specification

And

- Onsite visit(s) to undertake visual assessment(s) of installed product(s) – Site(s) as witnessed at stage 3, and/or Case study installed site(s)

to ensure ongoing validity of product requirements as in accordance with this Guidelines and Criteria Document, MCHW SHW, Codes of Practice, associated Specifications, standards and normative documents, PTS Ltd policies, procedures, and processes.

Surveillance audits cover the PTSPAS requirements as above with a 3-year re-certification. If at any surveillance stage the Guidelines and Criteria requirements are not met, non-conformities may be raised, possible suspension if the certificate or withdrawal. collection and any additional surveillance requirements as required.

Certificate Holders Premises / Production location(s):

- Review of Certificate Holders most recent third-party QMS and FPC Audit Reports, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement.
- Review the contractors third-party National Highway Sector Scheme audit reports, non-conformities (if any), and the associated close-out, observations, and any identified opportunities for improvement or
- Organisation / production responsibility and authority / management of change
- Customer Feedback / complaints
- Quality Plan - production operations, processes, and controls
- Product quality and performance
- Component changes
- Specification changes
- Installation Method Statement - changes
- Corrective action-based changes
- Use of PTS Certification Mark / Logo
- Optional Witnessing installation of product

Surveillance 1-4 (12 Months, 24month, 36 months and 48 months after Certification)

| Characteristic | Performance Requirements | Time(s) at which the performance characteristic shall be determined or measured |
|---|------------------------------------|---|
| Management System/ Production Control (optional installation on-site) | PTS SG 936 Guidelines and Criteria | 12, 24, 36 & 48 Months after Certification |

Sub-clauses 936.18 - 22

The 3-year re-certification audit incorporates the Annual Surveillance PTSPAS requirements.

A 5-years post-installation visual assessment for reflection cracking in accordance with MCHW SHW Clause 936 shall be carried out.

The surface course shall not have more than 10% of the reflection cracking that was present before the installation of the geosynthetic or steel mesh, for a minimum period of 5 years. The amount of cracking shall be expressed as a length per 100m for each 100m length. The length of cracking before treatment shall be taken from the visual survey produced as part of the pavement investigation used for scheme identification.

The reappearance of reflection cracking shall be confirmed by comparing locations of cracking with visual survey records carried out as part of the investigation prior to maintenance treatment design and coring through the cracks. This will identify whether cracking in the 'new' surface appears over existing cracks lower in the pavement structure. Note that reflection cracking may be 'top-down' or 'bottom-up'.

Stage 12 - Surveillance Requirements / Performance Monitoring / Agreement and Implementation of Validation

| Recertification (3 years after Certification, 36 months after scheme / trial installation) | | | |
|---|--|--|--|
| Characteristic | | Performance Requirements | Time(s) at which the performance characteristic shall be determined or measured |
| Management System/ Production Control (installation on-site) | | PTS SG 936 Guidelines and Criteria | 36 Months after Certification |
| Recertification (5 years after Certification, 60 months after scheme / trial installation) | | | |
| Characteristic | | Performance Requirements | Time(s) at which the performance characteristic shall be determined or measured |
| Reflection crack measurement survey (using laser crack measuring system) | | MCHW SHW Clauses 936.18 & 22 | Onsite assessment of installed product 60 months after Certification |