

Master Specification

Part RD-PV-C1

Construction of Unstabilised Granular Pavements

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RD-PV-C1 Construction of Unstabilised Granular Pavements

1 General

- a) This Master Specification Part sets out the requirements for the construction of unstabilised granular pavement including:
 - i) the documentation requirements, as set out in section 2;
 - ii) the requirements for materials and mixing plant, as set out in section 3;
 - iii) the placement requirements, as set out in section 4;
 - iv) the compaction acceptance criteria requirements, as set out in section 5;
 - v) the requirements for surface finish, as set out in section 6;
 - vi) the requirements for levels and tolerances, as set out in section 7;
 - vii) the requirements for joints, as set out in section 8;
 - viii) the test procedure requirements, as set out in section 9;
 - ix) the Hold Point and Witness Point requirements, as set out in section 10; and
 - x) the verification requirements and records, as set out in section 11.
- b) The construction of unstabilised granular pavement must comply with the Reference Documents, including:
 - i) Austroads Test Method AGPT-T251 Ball Penetration Test;
 - ii) AS 1289 Methods of testing soils for engineering purposes;
 - iii) AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method;
 - iv) AS 1289.2.1.1 Methods of testing soils for engineering purposes, Method 2.1.1: Soil moisture content tests - Determination of the moisture content of a soil - Oven drying method (standard method);
 - v) AS 1289.2.1.4 Methods of testing soils for engineering purposes, Method 2.1.4: Soil moisture content tests - Determination of the moisture content of a soil - Microwave-oven drying method (subsidiary method);
 - vi) AS 1289.5.2.1 Methods of testing soils for engineering purposes, Method 5.2.1: Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using modified compactive effort;
 - vii) AS 1289.5.8.1 Methods of testing soils for engineering purposes, Method 5.8.1: Soil compaction and density tests - Determination of field density and field moisture content of a soil using a nuclear surface moisture-Density gauge - Direct transmission mode;
 - viii) ASTM E178 Standard Practice for Dealing With Outlying Observations;
 - ix) Department Test Procedure TP164 Determination of the Dry Density/Moisture Content Relation of a Soil - 3 Point Method (available from: https://dit.sa.gov.au/standards/test_procedures);
 - x) Department Test Procedure TP166 Assignment of Maximum Dry Density and Optimum Moisture Content Values (available from: https://dit.sa.gov.au/standards/test_procedures);

- xi) Department Test Procedure TP226 Sampling of Soil, Aggregates and Rocks (available from: https://dit.sa.gov.au/standards/test_procedures); and
- xii) Department Test Procedure TP320 Compaction Control Test - Dry Density Ratio, Moisture Variation and Moisture Ratio (available from: https://dit.sa.gov.au/standards/test_procedures).

2 Documentation

2.1 Construction Documentation

In addition to the requirements of PC-CN3 “Construction Management”, the Construction Documentation must include:

- a) the pavement material test results as required by section 3b);
- b) construction methodology as required by section 4.1a); and
- c) the proposed test frequency and locations for pavement hardness testing as required by section 6.2.3b).

2.2 Quality Management Records

In addition to the requirements of PC-QA1 “Quality Management Requirements” or PC-QA2 “Quality Management Requirements for Major Projects” (as applicable), the Quality Management Records must include:

- a) details of the layer placement-dry back moisture content tests and the test results, as required by section 4.4c);
- b) details of the pavement surface dry back prior to sealing test results as required by section 6.2.2c);
- c) details of the pavement hardness test results as required by section 6.2.3a);
- d) the survey records required by section 7.1a); and
- e) the verification records required by section 11.

3 Materials and mixing plant

- a) The Contractor must ensure that all unstabilised granular pavement material complies with the requirements of RD-PV-S1 “Supply of Pavement Materials”.
- b) The Contractor must provide, as part of the Construction Documentation, test results as required by RD-PV-S1 “Supply of Pavement Materials” demonstrating compliance with section 3a).
- c) The Contractor must ensure that subbase and base materials are mixed using a pugmill mixer, unless otherwise specified in the Contract Documents. The mixing plant must be capable of consistently producing a homogeneous mixture of uniformly distributed component materials and water.

4 Placement

4.1 Demonstration of construction quality and trial pavement

- a) The Contractor must provide a construction methodology in the Construction Documentation which demonstrates how the Contractor will achieve compliance with this Master Specification Part for the construction of all pavements layers. The construction methodology must include:
 - i) details of the proposed plant, labour, equipment to be used;

- ii) pavement materials details;
 - iii) moisture condition techniques as required by section 4.3a);
 - iv) target moisture content envelope for each pavement material as required by section 4.3a); and
 - v) details of how the Contractor will achieve compliance with section 6.1.
- b) At least 14 days prior to the commencement of construction of the upper base, the Contractor must demonstrate that the requirements for surface finish, compaction, and hardness can be achieved using the Contractor's proposed plant, materials, and construction methodology for the base.
- c) The requirements of section 4.1b) can be demonstrated by the Contractor either by:
- i) constructing a trial pavement; or
 - ii) providing documented evidence from a previous project using the same plant, materials, and construction methodology.
- d) If required by the Contract Documents or if material is to be used which does not conform to RD-PV-S1 "Supply of Pavement Materials", a trial pavement must be undertaken in accordance with this section 4.1.
- e) Any trial pavement required by section 4.1c) or 4.1d) must be at least 100 m long and may form part of an unbound pavement layer that is not a surface course.
- f) The Contractor must provide 7 days' prior notice of the construction of a trial pavement which will constitute a **Witness Point**. The trial pavement must not be constructed until the Contractor has proceeded past the Witness Point.
- g) Test results from the trial pavement or evidence from a previous project required by section 4.1c) will constitute a **Hold Point**. Construction of the upper base forming part of the permanent Works (excluding the trial pavement) must not commence until the release of this Hold Point.

4.2 Spreading, compaction and trimming

- a) The Contractor must spread the pavement material such that the material is uniformly and consistently mixed both transversely and longitudinally to produce a homogenous material for each Work Lot.
- b) The pavement material must not become segregated, where there is an uneven distribution of particle sizes which is evidenced by a deficiency or excess or any particular particle size in any sample or at any location, at any stage of the construction process. The pavement materials must comply with the specified grading at all times prior to compaction.
- c) Any segregated area of placed material will constitute a Non-Conformance and must be removed and replaced with fresh material prior to the commencement of compaction of the Work Lot.
- d) The Contractor must ensure that all pavement layers are uniformly compacted to the full depth and over the full width to achieve the requirements of section 5.
- e) The Contractor must complete trimming and surface preparation on each layer to achieve the requirements of section 6 and section 7.

4.3 Compaction moisture content

- a) The Contractor must develop a work method and target moisture content envelope, to be detailed in the construction methodology required by section 4.1a), to ensure that:
 - i) there is adequate moisture in the pavement material to achieve the specified compaction; and

- ii) the pavement is capable of taking traffic load without deformation on completion of compaction.
- b) The Contractor must ensure moisture is uniformly distributed through the pavement layer.
- c) Unless specified otherwise in the Contract Documents, the moisture content of the pavement material during compaction must not be less than 85% of OMC and within the target moisture content envelope provided in section 4.3a).

4.4 Dryback requirements – pavement layer placement

- a) After pavement layer compaction, the Contractor must ensure that placement of subsequent pavement layers (including individual lifts of pavement layers) does not commence until the moisture content of the underlying pavement layer is less than:
 - i) that specified in the Contract Documents or Design Drawings; or
 - ii) if no moisture content has been specified, 70% of OMC.
- b) The location of moisture content tests must be selected by the Contractor for each Work Lot on a stratified random basis in accordance with AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method.
- c) For the purposes of section 4.4b), the number of strata must be equal to the number of tests required for a given Work Lot and details of the testing undertaken and test results must be submitted as part of the Quality Management Records.
- d) Prior to the placement of subsequent pavement layers, including sprayed bituminous surfacing or asphalt treatment, the Contractor must provide evidence to the Principal confirming the underlying pavement has achieved dry back which will constitute a **Hold Point**. Placement of subsequent pavement layers must not commence until release of this Hold Point.

5 Compaction acceptance criteria

5.1 Quality standards

- a) Statistical analysis, using an unknown variability scheme, must be used by the Contractor to determine acceptance of compaction.
- b) Compliance must be based on the analysis of a random set of tests taken from each Work Lot in accordance with this section 5. Compliance must be indirectly, in terms of percentage defective, compared to the desired quality of the Work Lot (10% defective).
- c) The Contractor must achieve a 90% probability assurance that accepted Work Lots comply with the desired quality. The acceptability characteristic k , quantified in section 5.6d), must be used to provide this statistical assurance.
- d) The Contractor must determine the proportion of the Works which will constitute a single Work Lot. Compliance will apply to the whole of the Work Lot from which the set of tests is taken.
- e) Any area which is deemed unsuitable must be excluded from the Work Lot before testing commences and this will constitute a Non-Conformance.
- f) At a minimum, non-homogeneous excluded areas include:
 - i) segregated or “bony” areas;
 - ii) soft and over-wet areas;
 - iii) ravelling and loose material;
 - iv) compaction planes; and
 - v) surface cracking, shoving and ruts.

- g) The Contractor must ensure that excluded areas are rectified prior to testing. If the total of the excluded areas in a Work Lot exceeds 10% of the Work Lot, the Contractor must ensure that the whole of the Work Lot is rectified prior to testing.

5.2 Dry density ratio

- a) The Contractor must ensure that the pavement layers are compacted uniformly to the full depth and over time the full width to the minimum dry density ratios stated in the Contract Documents or on the Design Drawings.
- b) Where no densities are provided in the Contract Documents or on the Design Drawings, the following values will apply:
- i) basecourse: 98% modified compaction; and
 - ii) subbase, lower subbase or working platform: 96% modified compaction.

5.3 Number and location of tests

- a) The Contractor must ensure that the frequency of testing of the various pavement layers is as follows:
- i) subbase and base, one test per 500 m² with a minimum of 6 tests per Work Lot;
 - ii) for subbase with Work Lots less than 2500 m², the minimum frequency of testing must be one test per 500 m² with a minimum of 2 tests per Work Lot;
 - iii) for base with Work Lots less than 2000 m² the minimum frequency of testing must be one test per 400 m² with a minimum of 2 tests per Work Lot;
 - iv) acceptance must be on an absolute basis; and
 - v) shoulder (where not part of base), a minimum of one test per 200 m.
- b) The location of tests must be selected by the Contractor for each Work Lot on a random stratified basis in accordance with AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method. The number of strata must be equal to the number of tests required for a given Work Lot.

5.4 Testing accuracies

The Contractor must ensure that the following testing accuracies are applied:

- a) field density and laboratory maximum dry density measurements must be made to the nearest 0.01 t/m³;
- b) the dry density ratio must be calculated to the nearest 0.1%; and
- c) test location co-ordinates must be measured to the nearest 100 mm.

5.5 Determination of mean and standard deviation

- a) The sample mean (\bar{X}) of n dry density ratio measurements (x_i) must be determined using the following relationship:

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n x_i$$

- b) The sample standard deviations must be determined using the following relationship:

$$s = \sqrt{\sum_{i=1}^n \frac{[\bar{X} - x_i]^2}{n - 1}}$$

5.6 Outlier value

- a) To determine if the lowest value (X_1) or highest value (X_n) of the Work Lot is low or high by chance, or that the value occurred by construction or materials not being consistent with the Work Lot, the test in section 5.6b) must be performed (in accordance with the requirements of ASTM E178 Standard Practice for Dealing With Outlying Observations).

- b) The statistic:

$$T_1 = \frac{\bar{x} - X_1}{s} \text{ or } T_n = \frac{X_n - \bar{x}}{s},$$

depending on which value is under question, is calculated and this is compared to Table RD-PV-C1 5-1.

- c) If the value of T_1 or T_n exceeds the value of T in Table RD-PV-C1 5-1, the low value or high value or both must be removed from the Work Lot, and the Work Lot mean and standard deviation must be recalculated using the remaining results. The Work Lot area which gave rise to the outlier value must be delineated and treated independently to the Work Lot.

- d) The statistic L_s must be determined using the following relationship:

$$L_s = \bar{X} - k \times s,$$

where k is a multiplier. The value k is given in Table RD-PV-C1 5-2 for different samples sizes.

Table RD-PV-C1 5-1 Critical values of T

No. of tests	Value
4	1.46
5	1.67
6	1.82
7	1.94
8	2.03
9	2.11
10	2.18
11	2.23
12	2.29

Table RD-PV-C1 5-2 Specified values of k

No. of tests per Work Lot (N)	Value of k	No. of tests per Work Lot (N)	Value of k
N = 4	0.62	N = 13	0.88
N = 5	0.68	N = 14	0.89
N = 6	0.72	N = 15	0.90
N = 7	0.76	N = 16	0.91
N = 8	0.78	N = 17	0.92
N = 9	0.81	N = 18	0.93
N = 10	0.83	N = 19	0.94
N = 11	0.85	N = 20	0.95
N = 12	0.86		

5.7 Acceptance limits

- a) A Work Lot is accepted if L_s is equal to or exceeds L , where L is the minimum required dry density ratio at any location.
- b) If L_s is less than L , the whole of the Work Lot is rejected, and the test results must be discarded.
- c) The specified values of L for each pavement layer are specified in section 5.2.

6 Surface finish

6.1 General

- a) The Contractor must ensure that the surface of the pavement layers are:
 - i) uniformly tight and appear as a stone mosaic interlocked with fine material; and
 - ii) are free of:
 - A. loose uncompacted materials;
 - B. segregated or “bony” materials;
 - C. soft, over wet areas;
 - D. a slurry or pasting of fine material at the surface;
 - E. being friable when subject to mechanical brooming;
 - F. tearing and scabbing;
 - G. cracking; and
 - H. roller indentations.
- b) Full details of the proposed pavement construction procedures incorporating the requirements of this section 6 must be included in the construction methodology in section 4.1a).

6.2 Surface preparation for bituminous treatments

6.2.1 General

- a) Where a finished pavement surface is to be primed and spray sealed or initial sealed:
 - i) the Contractor must include in the procedures for the placement of base, a minimum of 6 passes with a multi-wheel roller with a fully ballasted mass >30 t to achieve a uniformly tight surface, or an alternative procedure to achieve an equivalent compaction effort;
 - ii) all requirements of section 6.1 must be achieved;
 - iii) surface dryback must be achieved as required by section 6.2.2; and
 - iv) pavement hardness must be achieved as required by section 6.2.3.
- b) Where a prime is to be placed below asphalt, sections 6.2.1a)i), 6.2.1a)iii) and 6.2.1a)iv) do not apply. The dry back requirements specified in section 4.4 apply for the underlying pavement layers
- c) The finished pavement surface must not pond water, including at longitudinal and transverse pavement joints.

6.2.2 Surface dryback prior to application of prime or initial seal

- a) The Contractor must ensure all areas of the pavement surface to be primed and spray sealed, or initial sealed are tested for moisture content.
- b) The location of moisture content tests must be selected by the Contractor for each Work Lot on a stratified random basis in accordance with AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method.
- c) Application of a prime or initial seal must not commence until the moisture content of the top 20 mm of the base is less than 60% of OMC in the top 20mm of the base, unless specified in the Contract Documents or Design Drawings, and tests results must be submitted as part of the Quality Management Records.

- d) Prior to the placement of the prime or initial seal, the Contractor must provide evidence to the Principal confirming the underlying pavement has achieved dry back in accordance with section 6.2.2c) which will constitute a **Hold Point**. Placement of bituminous treatment must not commence until release of this Hold Point.

6.2.3 Pavement hardness

- a) Where the base is to be covered with a spray seal wearing course (prime and then spray seal, or initial seal), the Contractor must conduct pavement hardness tests prior to sealing and provide these test results in the Quality Management Records.
- b) The proposed test frequency and locations for pavement hardness testing must be provided in the Construction Documentation, with the following minimum test frequency applying:
 - i) minimum of 3 tests are undertaken per Work Lot;
 - ii) lanes - 1 test chainage location per 200 lineal metres of each constructed lane, with a test conducted in each wheel path at each test chainage;
 - iii) sealed shoulders (where not part of the base) – 1 test chainage location per 200 lineal metres of shoulder, with a test conducted at 0.5 m transverse offset from the lane;
 - iv) each test chainage within each 200 m length must be selected randomly using AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method; and
 - v) test results are to be submitted 2 days prior to the application of seal.
- c) Prior to the placement of a seal, the Contractor must provide evidence to the Principal confirming the underlying pavement has achieved pavement hardness which will constitute a **Hold Point**.

7 Levels and tolerances

7.1 Survey on pavement layers

- a) The Contractor must undertake survey to verify that the pavement layers have been set out and that the Work is in accordance with the figures and dimensions on the Design Drawings, and within the limits of specified tolerances. The survey records must be included in the Quality Management Records.
- b) The Contractor must carry out the survey on pavement layers in accordance with PC-SI1 “Site Surveys”.
- c) The frequency and location of testing must be as detailed in PC-SI1 “Site Surveys”.
- d) The frequency of testing longitudinally must be as stated in the Contract Documents. Where no longitudinal frequencies are provided, the testing must be no more than 10 m apart.

7.2 Acceptance limits

- a) The allowable tolerances on the finished levels of each pavement course must be as stated in Contract Documents or on the Design Drawings.
- b) In addition to the tolerances specified in the Contract Documents or on the Design Drawings, the Contractor must ensure that the base surface does not deviate by more than 10 mm from a 3 m straight edge laid on the surface.
- c) The Contractor must ensure that the algebraic differences of the deviation in base levels from the design levels for 2 points up to 20 m apart longitudinally are not greater than 20 mm. Levels higher than specified are taken as positive deviations and those lower than specified are taken as negative deviations. Each deviation will constitute a Non-Conformance.
- d) The tolerance on lateral position and on overall width must be ± 50 mm.

- e) Formation levels and pavement levels must comply with the specified tolerances. Designated pavement thicknesses are nominal and do not constitute acceptance criteria.

7.3 Maintenance

- a) Completed sections of any pavement course must be maintained by the Contractor in a well-drained condition in full conformance to this Part until covered with overlying material or primed or initial sealed, as applicable. This maintenance includes regular water application to mitigate dust and protect the surface.
- b) Ruts, corrugations or other surface defects must not be allowed to form and the Contractor must ensure that the shape, degree of compaction and surface finish immediately prior to overlaying or priming comply with the requirements of section 5, section 5 and this section 7.

8 Joints

8.1 Joint performance requirements

- a) Pavement located within 300 mm of joints between new and existing pavement, or internal joints formed within adjoining new pavement, must not rut more than the following when measured under a 1.2 m straight edge, placed transverse to the joint:
 - i) 5 mm at Completion; and
 - ii) 10 mm at 2 months prior to the expiry of the Defects Liability Period.
- b) The Contractor must inspect the existing edge of seal abutting the Works prior to construction. Any edge break or “roller over” (having curve edges) or other significant defects must be removed and repaired to ensure the finished joint meets performance requirements.

8.2 Testing pavement joints

- a) Longitudinal joints – the Contractor must create separate Work Lots for testing longitudinal joints of new granular pavements with existing pavements. The Work Lots must be no wider than 300 mm orthogonally to the joint and 200 m in length.
- b) Transverse joints – the Contractor must create a separate Work Lots for testing each transverse joint of new granular pavement with existing pavement. The Work Lot must be no wider than 300 mm orthogonally from the existing pavement for the length of the joint.
- c) Where the Works comprise new granular pavements that create a longitudinal joint between successive stages, the Contractor must create a separate Work Lot no wider than 300 mm orthogonally to the joint.
- d) Joint testing must be conducted at the following frequency:
 - i) compaction - density testing 1 test location per Work Lot;
 - ii) dryback requirements – layer placement 1 test location per Work Lot; and
 - iii) pavement hardness 1 test location per Work Lot.

9 Test procedures

The Contractor must use the test procedures specified in Table RD-PV-C1 9-1 to verify conformance with this Master Specification Part.

Table RD-PV-C1 9-1 Test procedures

Test	Test procedure
Sampling of soil, aggregates and rocks	Department Test Procedure TP226 Sampling of Soil, Aggregates and Rocks
Preparation of samples	AS 1289.1.1 Methods of testing soils for engineering purpose

Test		Test procedure
Site selection by stratified random technique		AS 1289.1.4.2 Methods of testing soils for engineering purposes, Method 1.4.2: Sampling and preparation of soils - Selection of sampling or test sites - Stratified random number method
Field density:	Nuclear method	AS 1289.5.8.1 Methods of testing soils for engineering purposes, Method 5.8.1: Soil compaction and density tests - Determination of field density and field moisture content of a soil using a nuclear surface moisture-Density gauge - Direct transmission mode
Moisture content:	Oven drying method	AS 1289.2.1.1 Methods of testing soils for engineering purposes, Method 2.1.1: Soil moisture content tests - Determination of the moisture content of a soil - Oven drying method (standard method)
	Microwave method	AS 1289.2.1.4 Methods of testing soils for engineering purposes, Method 2.1.4: Soil moisture content tests - Determination of the moisture content of a soil - Microwave-oven drying method (subsidiary method)
Maximum dry density:	Modified compaction	AS 1289.5.2.1 Methods of testing soils for engineering purposes, Method 5.2.1: Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using modified compactive effort
	Three point method	Department Test Procedure TP164 Determination of the Dry Density/Moisture Content Relation of a Soil - 3 Point Method ⁽¹⁾
Selection of maximum dry density		Department Test Procedure TP166 Assignment of Maximum Dry Density and Optimum Moisture Content Values ⁽²⁾
Dry density ratio		Department Test Procedure TP320 Compaction Control Test - Dry Density Ratio, Moisture Variation and Moisture Ratio
Pavement hardness		Austrroads Test Method AGPT-T251 Ball Penetration Test

Table notes:

- (1) The 3 point method may be used to provide maximum dry density value in stabilised material.
(2) For granular pavement materials conforming to RD-PV-S1 "Supply of Pavement Materials".

10 Hold Points and Witness Points

- Table RD-PV-C1 10-1 details the review period or notification period, and type (documentation or construction quality) for each Hold Point referred to in this Master Specification Part.
- Table RD-PV-C1 10-2 details the review period or notification period, and type (documentation or construction quality) for each Witness Point referred to in this Master Specification Part.

Table RD-PV-C1 10-1 Hold Points

Section reference	Hold Point	Documentation or construction quality	Review period or notification period
4.1g)	Test results from the trial pavement or evidence from a previous project required by section 4.1b)	Documentation	2 Business Days review
4.4d)	Confirmation of pavement dry back prior to placement of subsequent pavement layers	Construction quality	24 hours notification
6.2.2d)	Submission of surface dryback test results prior to placement of the prime or initial seal	Documentation	24 hours review
6.2.3c)	Submission of pavement hardness test results prior to application of spray seal	Documentation	24 hours review

Table RD-PV-C1 10-2 Witness Points

Section reference	Witness Point	Documentation or construction quality	Review period or notification period
4.1f)	Notification of construction of trial pavement	Construction quality	7 days notification

11 Verification requirements and records

The Contractor must supply written verification as part of the Quality Management Records that the requirements listed in Table RD-PV-C1 11-1 have been complied with.

Table RD-PV-C1 11-1 Verification requirements

Subject	Property	Frequency	Acceptable limits
Pavement material properties	Refer RD-PV-S1 "Supply of Pavement Materials"	Refer RD-PV-S1 "Supply of Pavement Materials"	RD-PV-S1 "Supply of Pavement Materials"
Pavement compaction	Dry density ratio	Refer section 5.3	Refer section 5
Pavement placement	Dryback - layer placement - moisture content	The same as the number of strata for a given Work Lot	Less than 70% of OMC, unless specified in the Contract Documents or Design Drawings
Surface preparation for bituminous treatments	Surface dryback prior to bituminous treatment application	The same as the number of strata for a given Work Lot	Less than 60% of OMC in the top 20mm of the base, unless specified in the Contract Documents or Design Drawings
Surface preparation for bituminous treatments	Pavement hardness	Refer to section 6.2.3	National highways: individual values $\leq 3\text{mm}$ Work Lot average $\leq 2.5\text{ mm}$ Other roads: individual values $\leq 3\text{mm}$
Surface of pavement course	Levels	No more than 10 m apart longitudinally. As specified in PC-S11 "Site Surveys"	Refer section 7