Technical Specification

Transport and Main Roads Specifications MRTS05 Unbound Pavements

July 2017

Queensland Government

The Contractor shall carry out material and construction compliance tests in accordance with Clause 9 to confirm the trial complies with the requirements of this Technical Specification. Prior to continuing works after completion of the trial, the Contractor shall submit to the Administrator, for their acceptance, records which demonstrate this compliance **Hold Point 5** If the trial does not conform in full to the requirements of this Technical Specification, the Contractor shall review their construction procedure and the properties of the proposed unbound materials and a further trial shall be undertaken.

Where minor nonconformances occur in a trial, and the Administrator accepts to incorporate the lot into the permanent works (either at a reduced level of service or otherwise), the Administrator, at their sole discretion may elect to waive the requirement for a further trial to be undertaken.

However where more significant nonconformances occur, and these or other nonconformances occur again after a further trial, the Contractor should substantially review their construction procedure and proposed materials.

8.2 Process requirements

8.2.1 Paving Equipment

8.2.1.1 General

For pavements constructed, using Type 2, 3 or 4 materials, specific equipment shall be used as stated in Clause 3.1 of Annexure MRTS05.1.

For pavement constructed using Type 1 materials, the requirements of Clause 8.2.1.2 shall apply.

Where no specific equipment is nominated in Clause 3.1 of Annexure MRTS05.1, or the Administrator approves the use of alternative equipment in accordance with Clause 8.2.1.2, the Contractor shall nominate the paving equipment to be used in their Unbound Pavement Construction Procedure.

Irrespective of what equipment is used, the mix shall be placed and spread such that there is no segregation of the mixture.

8.2.1.2 Paving Type 1 material

Pavements incorporating Type 1 (HSG) materials shall be constructed using a self-propelled spreading machine purpose-built for this work (that is, a paver). Such machines shall have the capacity to either:

a) receive the material in a hopper and place and spread the material on the prepared surface to the required uncompacted layer thickness, width and shape in one pass, or

b) spread previously placed windrows of the material to the required uncompacted layer thickness, width and shape in one pass.

The Administrator may approve other methods of paving (for example, using a grader) in areas where the pavement width is such that the use of a paver is not practical.

8.2.2 Paving

Unbound pavements shall be constructed such that each individual layer is laid in one pass that meets the requirements of this Technical Specification without the addition of extra material except as detailed below.

The material laid ready for compaction shall not have any visible areas of segregation. Any segregated areas are to be removed and replaced with fresh mix prior to the commencement of compaction of the lot. Material removed for this reason shall be disposed of in accordance with Clause 10 of MRTS01 *Introduction to Technical Specifications* and shall trigger a nonconformance, under which the Contractor must identify the cause of the segregation and propose preventative action to prevent reoccurrence **Nonconformance**

8.2.3 Layer thicknesses

Individual compacted layer thicknesses shall be chosen to suit the construction process and the requirements of the Contract. Unless otherwise approved by the Administrator, the completed layer thicknesses (after compaction and surface preparation) shall be in accordance with Table 8.2.3.

Table 8.2.3 – Layer thickness requirements

Material	Minimum Value	Maximum Value
Type 1 (HSG)	100 mm	150 mm
All other subtypes	75 mm	250 mm

Where multiple layers of the same material are placed together in a single course each layer shall be of equal thickness

8.2.4 Moisture content

8.2.4.1 Moisture Content prior to covering

The pavement layer shall have a moisture content such that the degree of saturation is less than the relevant limit specified in Table 8.2.4.1 at the time that it is covered by another pavement layer or surfacing. Unless otherwise accepted by the Administrator, these requirements shall also apply to trafficking unbound pavement layers.

Table 8.2.4.1 – Maximum degree of saturation

Material	Maximum Degree of Saturation (%)
Type 1 (HSG)	60 *
Type 2	65
Type 3	70
Type 4	70

* For Type 1 material, the Administrator may accept a higher degree of saturation limit (up to a maximum of 70%) when the Contractor **Hold Point 6**:

a) confirms the use of a higher moisture content limit will not impact on achieving the surface finish requirements stated in Clause 8.2.5, and

b) demonstrates adequate resistance to deformation at a higher DOS level. This demonstration shall at least include RLT testing in accordance with Test Method Q137 where the maximum DOS at the time of sealing shall be the maximum value providing:

   i. less than 1.5% permanent strain after 1000 cycles

   ii. less than 4.0% strain at 50,000 cycles, and

   iii. RLT test results shall be undertaken on the manufactured pavement material not more than 12 months prior to its intended incorporation into the works.