

Annexure MRTS05.1 Unbound Pavements

Specific Contract Requirements

Contract Number
T18/19.1


Note: Clause references within brackets in this Annexure refer to Clauses in the parent Technical Specification MRTS05 (July 2017) unless otherwise noted.

1 Quality system requirements

1.1 Lot size (Clauses 9.1 and 9.3)

The following maximum lot sizes shall apply to work covered by this Technical Specification.

Construction Activity	Maximum Lot Size
For Type 2 and Type 3 products - Default lot sizes are provided in Appendix A of MRTS05. Typically for Supply Unbound Pavement Materials; maximum lot size is 5,000 Tonnes	
For Council Mix product - Default lot sizes are as per Types 2 & 3 materials	

1.2 Testing frequencies

1.2.1 Unbound pavement material (Clause 9.4.1)

The following minimum testing frequencies for unbound pavement material source and product testing shall apply.

Property	Test Method	Normal Testing Level	Reduced Testing Level
For Type 2 and Type 3 products - Default testing frequencies are provided in Appendix A of MRTS05.			
For Council Mix product - Testing frequencies are as per Reduced Testing Level as shown in Table A2.			

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1.2.2 Construction standards & geometrics (Clauses 9.4.3, 9.4.4.1, 9.4.5, 9.4.7 and 9.4.8)

The following minimum construction standard and geometric testing shall apply.

Property	Test Method	Normal Testing Level	Reduced Testing Level
Not Applicable			

1.3 Material compliance testing locations (Clause 9.2)

For the following locations and/or material subtypes, material compliance testing shall be undertaken on samples taken from the pavement.

If no locations or material subtypes are given, all samples shall be taken from the stockpile.

Test samples to be sourced from quarry stockpile, and identified for reference.

2 Material requirements

2.1 Pavement material locations (Clauses 7.1.1, 7.2.1, 7.2.4, 7.3.1 and 7.3.4)

The following pavement material subtypes shall be used in the locations stated.

Location	Material Subtype	Grading Envelope(s)†
Project Specific	Types 2.1, 2.2, 2.3, 2.5	C or Modified C
Project Specific	Types 3.1, 3.2, 3.3	C
Project Specific	Council Mix product	C or D To satisfied the note below, and Clause 4 (Supplementary requirements)
<p>The Council Mix product is to confirm with ARRB standards for unsealed roads, with a "Grading Coefficient" (GC) between 16 and 34, and a "Shrinkage Product" (SP) between 100 and 350.</p> <p>GC = $\{(\% \text{ passing } 26.5\text{mm} - \% \text{ passing } 2.36\text{mm}) \times (\% \text{ passing } 4.75\text{mm})/100\}$</p> <p>SP = (Linear shrinkage x % passing 0.425mm)</p>		

† Specification of a particular grading envelope is not applicable for Type 1 (HSG) materials.

Grading envelope shall be a selection from Table 7.2.4(a) or Table 7.3.4(a) and be in accordance with Table 7.2.4(c) or Table 7.3.4(c), as relevant.

The "Modified C" grading has been introduced with the intent of standardising project-specific local practices. Before nominating the "Modified C" grading, if it has not been used previously, it is recommended that the Transport and Main Roads District investigate the feasibility of obtaining this tighter grading from local sources. Depending on rock type and crusher capability, mix adjustment/s to assure compliance with both this tighter grading and all other requirements may require allowance/s for additional time and/or cost. For further advice prior to specifying 'Modified C' grading in Departmental projects, the Transport and Main Roads District should consult with the Director (Pavements Rehabilitation) or their nominee.

2.2 Plasticity index or linear shrinkage – Type 2 and 3 materials only (Clauses 7.2.3 and 7.3.3)

The following property shall apply to materials supplied under the Contract.

Location	Material Subtype	Plasticity Index or Linear Shrinkage† *
Stockpile	Type 2	Linear shrinkage
Stockpile	Type 3	Linear shrinkage
Stockpile	Council Mix	Linear shrinkage,

† Specification of this property is not applicable for Type 1 (HSG) materials. Linear shrinkage shall apply for all Type 1 (HSG) materials.

* For all other materials, if no indication is given the linear shrinkage standard shall apply.

The decision to specify either plasticity index or linear shrinkage is generally based on local preference and the specifiers experience and understanding of either property.

2.3 Minimum limits for plasticity index or linear shrinkage – Type 2 and 3 materials only (Clauses 7.2.3 and 7.3.3)

The following minimum limits shall apply to materials supplied under the Contract.

Location	Material Subtype	Minimum Plasticity Index or Linear Shrinkage† *
Stockpile	Type 2	Linear shrinkage - 1.5%
Stockpile	Type 3	Linear shrinkage – 2.0%
Stockpile	Council Mix	Linear shrinkage, as qualified in Clause 2.1 above

† Specification of this property is not applicable for Type 1 (HSG) materials. A minimum linear shrinkage of 1.5 shall apply for all Type 1 (HSG) materials.

* For all other material if no minimum limits are indicated, none shall apply.

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2.4 Type 4 material requirements

2.4.1 Additional requirements for Type 4 material (Clause 7.4)

The following additional requirements shall apply to Type 4 materials.

Not Applicable

2.4.2 CBR moisture content for Type 4 material (Clauses 4.1 and 7.4)

The relative moisture content for reporting CBR test results for Type 4 material is given below.

Material Subtype	Relative Moisture Content

If no indication is given for a particular material subtype, the CBR shall be reported at the Optimum Moisture Content (OMC).

2.5 Material stockpiles (Clause 7.6)

Stockpiles of pavement material shall be located as stated below.

If no indication is given, material stockpiles shall be located as stated in Clause 7.6.

Quarry Stockpile sites are as identified by the Quarry operator.

Delivery Stockpile sites are project specific, and will be advised when purchase orders are confirmed.

3 Construction requirements

3.1 Construction equipment (Clause 8.2.1.1)

For pavement constructed using Type 2, 3 and 4 materials, the following construction equipment shall be used.

If no indication is given, the construction equipment to be used shall be nominated by the Contractor in their Unbound Pavement Construction Procedure.

Not Applicable

The above requirements are not applicable to Type 1 (HSG) materials.

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3.2 Compaction standard (Clause 8.3.3)

Alternative minimum compaction standard shall apply where stated below.

Material Subtype				
Compaction Standard				

If no indication is given for a particular material subtype, the compaction standard stated in Clause 8.3.2 shall apply.

For unbound pavements with thin asphalt surfacings, other than Type 1 (HSG), a minimum compaction standard of 102% (Standard Compaction) would commonly be adopted in the base course to reduce the potential for asphalt fatigue. Refer to the Pavement Design Supplement for further information.

3.3 Geometrics - Not Applicable as this contract is Supply & Delivery only
3.3.1 Vertical tolerances – Types 2, 3 and 4 materials only (Clause 8.3.4.3)

The vertical tolerance on any layer shall be alternative:

A
(10/15 mm)

B
(25 mm)

If no indication is given, the vertical tolerance shall be Alternative A.

3.3.2 Deviation from a straight-edge – Types 2, 3 and 4 materials only (Clause 8.3.5)

The maximum deviation from a straight-edge shall be alternative:

C (5 mm)

D (8 mm)

If no indication is given, the maximum deviation from a straight-edge shall be Alternative C.

3.3.3 Crossfall and straight-edge tolerances applicable on layers other than the final layer (Clauses 8.3.4.4 and 8.3.5)

In addition to the final layer of unbound pavement, the specified requirement for crossfall and deviation from a straight-edge shall also apply to the following layers.

If no indication is given, the requirements for crossfall and deviation from a straight-edge shall apply to the final (uppermost) layer of unbound pavement only.

3.3.4 Road roughness (Clause 8.3.6)

The maximum road roughness shall be (R_s)

m/km

If no indication is given, the requirement shall be 2.31.

4 Supplementary requirements (Clause 10)

The following supplementary requirements shall apply.

Supplementary requirements for the Council Mix produce are referred to in Clause 2, and in detail in Clause 2.1 above. The parameters are to intersect in the "E" zone in the chart below.

CBR Value for "Council Mix"

The minimum Soaked CBR value for the "Council Mix" is to be 15; equivalent to the requirement for Type 2.5

Council Mix - Shrinkage and Grading Coefficient Chart

