

**PART M10****MAINTENANCE - SEALED ROADS****CONTENTS**

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**1. GENERAL**

This Part specifies the requirements for maintenance activities for sealed roads.

**2. QUALITY REQUIREMENTS**

The Contractor shall prepare and implement a Quality Management Plan vide Part PC-QA1 “Quality Management Requirements” that includes detailed procedures, documentation and Work Instructions for all maintenance activities in addition to the below:

- a) documentation to verify accreditation by the retro reflective sheeting manufacturer of Work Instructions for sign handling, storage, erection and cleaning;
- b) test method for determining the retro reflective luminance for signs;
- c) procedure for Emergency Response; and
- d) Work Instructions for graffiti removal including colour matching and the assurance that the retro reflective luminance on signs is not reduced.

This documentation shall be submitted during the Mobilisation Period and at least 28 days prior to the commencement of the Maintenance Period.

**3. RESPONSE TIMES**

All Routine Maintenance activities including rectification of Defects shall be undertaken in accordance the timeframes provided within the relevant Maintenance Activity Standards.

Where it is not possible to rectify a Defect within the specified Response Time, the Contractor shall implement appropriate hazard warning within the time specified, until the repair can be completed.

Any SMS activities shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.

**4. RECORDS AND REPORTING**

The Contractor shall maintain records and report information in accordance with Part M4 “Inspections” and Part M6 “Data, Reporting and Governance”.

This shall also include the capture of all Asset Register data required as per Part M18 “Asset Data Collection”.

## **5. ADDITIONAL REQUIREMENTS**

### **5.1 Drainage**

The Contractor shall maintain all drainage elements and vegetation to the extent as detailed within the Maintenance Clearance Envelopes detailed in Part M14 "Maintenance – Vegetation".

Other than clearing culverts, pits and drains, any Works within a watercourse and/or wetland shall constitute a **HOLD POINT**.

### **5.2 Surface Treatment**

All spray seal pavement repairs shall include a 150 mm overlap outside the perimeter of the repair to 'match in' with the existing surface and to prevent water ingress.

Care should be taken to ensure longitudinal joints for pavement repairs are not located within the wheel paths.

### **5.3 Pavement - Size of Repairs**

The Contractor must include distressed pavement immediately surrounding any Pavement Defect in the repair, regardless of the intervention parameters (i.e. the area of pavement repair at recording shall be the area required to meet the Performance Standard). The measurement of the area of repair on pavements with a sprayed bituminous surface shall not include the 150 mm overlap required for the surface treatment 'match in'.

### **5.4 Pavement Deterioration**

The Contractor shall:

- a) ensure the deterioration of recorded Defects does not create a safety hazard to road users; and
- b) repair pot holes occurring within recorded pavement defects.

### **5.5 Pavement Repair Performance**

The Contractor shall ensure that the surface finish of pavement repairs shall match the surrounding surface and ensure water resistance and skid resistance values are greater or equal to 0.50 Bpn for all Motorways and 0.45 Bpn for all other roads.

Grip No. is the average measure of skid resistance over 10 m intervals when using the Griptester. The approximate conversion between British Pendulum No. and the Grip No. is  $\text{Grip No.} = 0.01 \times \text{Bpn}$ .

### **5.6 Work in the Vicinity of Vehicle Detector Loops and Bridge Abutments**

The Contractor shall give 7 days' notice to the Superintendent prior to undertaking pavement work for RPN, RPC and RPS activities within:

- a) 1 m of vehicle detector loops (including feeder cables); and
- b) 5 m of bridge abutments.

The Contractor shall submit a work plan at least 7 days prior to the commencement of work. Provision of the work plan shall constitute a **HOLD POINT**. The Contractor shall immediately notify the Traffic Management Centre (TMC) 1800 018 313 if detector loops are damaged.

The Contractor must also ensure that the location of any subsurface loops (e.g. located on Motorways) and associated feeder cables are identified and marked prior to any Works commencing.

### **5.7 Sweeping**

The Contractor must use dust suppressing equipment/methods adjacent to sensitive locations such as schools and hospitals or where dust is likely to cause a nuisance to nearby residents or businesses.

Costs for sweeping if required as a result of any Works shall be incorporated into the rate for that activity. No additional payment will be made for sweeping.

### **5.8     Unsealed Surfaces**

Edge drop between shoulders and pavement shall be measured using a 1.2 m straight edge placed on the pavement in the direction of the crossfall such that one end of the straight edge is above the edge drop.

Edge drops shall be captured under RSG not RPE.

### **5.9     Regulatory and Warning Signs**

Replacement of all missing or damaged regulatory and warning signs (RFR) for Motorways and Urban roads shall be undertaken as encountered in accordance with M4 Clause 2 "Loop Inspections" or within 2 hours where notified by the Superintendent.

Replacement of all missing or damaged regulatory and warning signs (RFR) for Rural and Access roads shall be undertaken as encountered in accordance with M4 Clause 2 "Loop Inspections" or within 4 hours where notified by the Superintendent.

### **5.10    Fencing**

Response time to make safe damaged pedestrian fencing or hazards to road users (RRB) shall be as encountered in accordance with M4 Clause 2 "Loop Inspections" and/or of being aware of the damage or within 2 hours where notified by the Superintendent.

Rectification of freeway fencing shall be undertaken as encountered in accordance with M4 Clause 2 "Loop Inspections" and/or of being aware of the damage or within 2 hours where notified by the Superintendent.

### **5.11    Wire Rope Barrier**

Repair of sagging cables, damaged or deformed wire rope safety barrier systems and re-tensioning of wire rope must be undertaken in accordance with Manufacturer's instructions.

Programmed testing and tensioning of the wire rope barrier systems will be undertaken in accordance with the manufacturer's instructions. Records of the testing and tensioning shall be entered into the Asset Register.

### **5.12    Safety Barrier**

The Principal will provide plans of crash cushion components if necessary.

### **5.13    Waste Disposal**

The Contractor must dispose of waste materials in accordance with M8 Clause 10 "Waste Management".

### **5.14    Water Tanks**

The Contractor must ensure that any water tanks are inspected for damage or leaks.

### **5.15    Litter**

Litter visible from the travelled way and within the road corridor shall be removed at the frequency specified within the Maintenance Activity Standards. Litter shall be removed prior to mowing. Any Litter visible as a result of mowing shall be removed within 24 hours after mowing.

To remove any abandoned vehicles, the Contractor must follow Operational Instruction 20.22 "*Disposal of Abandoned Vehicles*" and notify the following:

- a) the Traffic Management Centre (TMC) for freeways and expressways;
- b) SAPOL for road carriageways; or

- c) The relevant Local Council.

#### **5.16 Graffiti**

Removal of graffiti on Assets is included in this Contract scope even if the Asset itself is not included in the Contract scope for maintenance. For example, removal of graffiti from light poles or traffic signal boxes etc.

Requests from Councils or community groups to remove graffiti that is not visible to the public from the road shall be forwarded to the Superintendent.

#### **5.17 Replacement of Pavement Marking**

The Contractor shall replace all delineation, pavement marking, pavement bars and RRPM's removed during repairs within the following response times:

- a) 'no overtaking zone', separation lines and all holding bars - 1 month; and
- b) all other pavement marking - 3 months.

The Contractor shall maintain temporary delineation until permanent pavement marking is in place.

For 'no overtaking zone', separation lines or holding bars, the Contractor shall put in place and maintain temporary traffic devices until all permanent pavement marking has been reinstated.

Separate payment will not be made for these works. All Routine and Specific Maintenance rates are to be inclusive of pavement marking.

Pavement marking shall be undertaken in accordance with Part M13 "Maintenance – Pavement Marking".

#### **5.18 Maintenance of Shared Paths, Sealed Rest Areas and Weigh Stations**

The scope of maintenance activities for sealed roads in this Part M10 "Maintenance – Sealed Roads" includes all relevant activities for the sealed pavement areas of all Shared Paths, Rest Areas and Weigh Stations.

#### **5.19 Bridges and Structures (BR)**

Where specified, the works shall be carried out as per the Bridge Repair Manual

<http://portal.roads.sa.gov.au/sites/SOAPBS/Lists/BMS/Bridge%20Repair%20Manual.aspx>

### **6. HOLD POINTS**

The following is a summary of the Hold Points, vide Part PC-QA1 "Quality Management Requirements", referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
5.1	Work within a watercourse and/or wetland	28 days
5.6	Work in the Vicinity of Vehicle Detector Loops and Bridge Abutments	7 days

**ATTACHMENT 1**

**MAINTENANCE ACTIVITY STANDARDS**

RDC/RDR	Clear Drainage Elements
RDD/RDO	Clear Open and Lined Drains
RDS	Clear Subsoil Drains
RDB	Clear Drainage Retention and Detention basins
RBE	Clear Bridge Joints and Scuppers
RSS	Scour Repair
RPC/RPL	Local Shape Correction
RPE	Edge Break Repair
RPK	Crack Sealing
RPN/RPJ	Pavement Digouts
RPP	Pothole Repair
RPS/RPT	Pavement Surfacing
RRT	Traffic Island / Median and Kerb Maintenance
RPW	Pavement Sweeping
RSG	Unsealed Surface
RSR	Re-sheeting Unsealed Surface
RFB/RFG	Safety Barrier
RFD	Delineators
RFR/RFS	Signs
RRF/RRB	Fences
RWR/RWG	Wire Rope Safety Barrier
RRA/RRP	Road User Amenity Maintenance
RRL/RRC	Litter Collection
RMG	Graffiti Removal
RBR	Bridges and Structures

**CLEAR DRAINAGE ELEMENTS (RDC / RDR)**

**Application:** This standard applies to all infrastructure that provides the road network drainage function.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b></p> <p>Misaligned, collapsed or broken pit covers / lids, blocked grid units.</p> <p>Grids ineffective.</p> <p>Vegetation growth affecting elements.</p> <p>Loss of capacity or blocked drainage elements.</p> <p><b>Cyclical Routine Maintenance:</b> Nil</p> <p><b>Specific Maintenance:</b></p> <p>Broken, damaged, cracked or spalled drainage elements including grid units (excluding covers and lids), sunken junction boxes and subsidence under drainage units.</p>	<p>Where the capacity of the drainage element is restricted by 50%</p> <p>Material within 200 mm of any steel component of grids units shall be cleared.</p> <p>Vegetation growth exceeding 450 mm high within 500 mm of structural elements.</p> <p>Grids full to within 300mm of the top surface.</p> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RDC.</p> <p>Specific Maintenance shall be recorded on the MDR as RDR</p>	60 days	All	<p><b>Side Entry Pits and connecting Drains:</b> Defects that restrict the capacity of the drainage element more than 80% or causing flooding to the roadway or private property.</p> <p><b>Grids:</b> Material within 150 mm of the top of a grid.</p> <p><b>Pits &amp; Grids:</b> Hazardous misalignment or condition of any pit lid cover or grid unit or pit lids missing.</p> <p>Pit lid condition or placement presents potential safety hazard.</p>	<p><b>Alignment:</b> Any misaligned pit covers / lids or grid units are seated correctly.</p> <p><b>Culverts and Pits and connecting Drains:</b> operating at 100% of the design capacity.</p> <p><b>Grids:</b> Grid pits clear of all debris.</p> <p><b>Environmental:</b> No vegetation impeding waterway.</p> <p>No vegetation &gt; 150 mm high within 500 mm of a structural drainage element.</p> <p>Ensure prevention of sedimentation of waterways when undertaking work.</p> <p>Remove seedling trees with potential to damage drainage infrastructure.</p>

**CLEAR OPEN AND LINED DRAINS (RDD / RDO)**

**Application:** This standard applies to open and lined drainage elements.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Restrictions to the free flow of drainage away from the carriageway.</p> <p>Restrictions include: obstructions (solid debris), vegetation, siltation, scour, ponding of water and windrow material as a result of any grading.</p> <p>Downstream siltation and erosion.</p> <p><b>Cyclical Routine Maintenance:</b> Nil</p> <p><b>Specific Maintenance:</b> Damaged, stepped, or cracked concrete lined drains.</p>	<p>Defects that restrict the flow capacity of the drainage element by more than 50% of the design capacity.</p> <p>Vegetation greater than 450 mm high within 1 m of any drainage elements.</p> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RDD.</p> <p>Specific Maintenance shall be recorded on the MDR as RDO.</p>	60 days	All	<p>Defects that cause flooding to the roadway or private property; divert water flow from its normal course.</p> <p>Drainage elements which are greater than 70% blocked.</p> <p>Woody vegetation within 1 m of any drainage element.</p>	<p><b>Alignment:</b> Direction and width of the drainage element shall be as designed.</p> <p><b>Capacity:</b> All open and lined drainage elements operate at 100% of the design capacity.</p> <p><b>Open and Lined drains:</b> Free flowing along its length without ponding, overflow or vegetation growth.</p> <p><b>Spacing:</b> Turn out / cut off drains shall be appropriate to the grade (the maximum spacing shall be 100 m). Drainage shall be directed along contours.</p> <p><b>Environmental:</b> No vegetation &gt; 150 mm high.</p> <p>Work shall not cause downstream scouring or sedimentation.</p>

**CLEAR SUBSOIL DRAINS (RDS)****Application:** This standard applies to blocked subsoil drains.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Nil.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Clearing of blocked subsoil drainage elements.	Over-wet or distressed areas attributable to blocked subsoil drains visible.  <b>MDR Recording:</b> Defects shall be recorded on the MDR as RDS.	n/a	All	Not applicable.	<b>Capacity:</b> Sub soil drains shall be free flowing for a distance of 2 metres from the outlet point.  <b>Environmental:</b> No Vegetation > 150 mm high within 500 mm of the inlet/outlet.  Work shall not cause downstream scouring or sedimentation.



**CLEAR DRAINAGE RETENTION AND DETENTION BASINS (RDB)**

**Application:** This standard applies to Water Sensitive Urban Design Retention and Detention drainage elements.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Nil.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Excessive landscape growth or build-up of debris / sediment causing a loss in design capacity.</p> <p>Blockage of system inlet or outlets due to vegetation growth or debris / sediment accumulation.</p> <p>Any structural damage to inlets, outlets, retaining walls or other structural elements.</p>	<p><b>MDR Recording:</b></p> <p>Specific Maintenance Defects shall be recorded on the MDR as RDB.</p>	n/a	All	Not applicable.	<p><b>Capacity:</b> Drainage systems operate at 100% of their design capacity.</p> <p><b>Environmental:</b> Appropriate vegetation to meet design requirements.</p> <p>Work shall not cause downstream scouring or sedimentation.</p>

**CLEAR BRIDGE JOINTS AND SCUPPERS (RBE)****Application:** This standard applies to bridge drainage elements.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Bridge expansion joints and scupper / drainage points blocked.</p> <p><b>Cyclical Routine Maintenance:</b> The programmed annual cleaning of all bridge joints and scuppers.</p> <p>Bridge joints are to be cleaned in September/October prior to the warm weather beginning to close the joint.</p> <p>Scuppers are to be cleaned in April/May prior to the wettest months of the year.</p> <p><b>Specific Maintenance:</b> Nil.</p>	<p>Material build up visible within the bridge expansion joints.</p> <p>Bridge Scupper / Drainage points more than 70% blocked.</p> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RBE</p>	60 days	All	<p>Bridge expansion joints are full of material.</p> <p>Bridge Scupper / Drainage points blocked.</p>	<p><b>Design Capacity:</b> Bridge expansion joints free of all material.</p> <p>Bridge Scupper and Drainage points are operating at 100% of the design capacity.</p> <p><b>Environmental:</b> No vegetation within bridge joints or impeding any drainage elements.</p>

**SCOUR REPAIR (RSS)**

**Application:** This standard applies to scour occurring within the shoulders and drainage elements as a result of a storm or heavy rainfall event.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Nil.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Scour or siltation of batters, drains, embankments, levee banks, shoulders, or against structures draining the road.	<b>Defects within the road shoulder:</b> exceeding 1m in length and average depth exceeding 150 mm.  <b>Defects not in the road shoulder:</b> greater than 1m in length and mean depth of $\geq 300$ mm.  <b>MDR Recording:</b> Specific Maintenance shall be recorded on the MDR as RSS.	n/a	All	Not applicable.	<b>Profile:</b> to "match in" with the adjacent profile.  <b>Hydraulic efficiency:</b> match the upstream condition.  <b>Stability:</b> Embankments stabilised.  <b>Backfill:</b> in shoulders shall conform to RSG / RSR.

**LOCAL SHAPE CORRECTION (RPC/RPL)**

**Application:** This standard applies to the correction of localised irregularities to the pavement surface that affect the rideability of the road.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Shoving, depressions, corrugations, rutting, lumps or ridges < 20 m <sup>2</sup> .  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Defects > 20 m <sup>2</sup> .  Defects > 20 m <sup>2</sup> that have a length to width ratio greater than 10:1 are considered as <b>ruts</b> and are not to be logged as RPL.	Defects with deformation > 20 mm under a 1.2 m straight edge in the longitudinal direction; or  Defects with deformation > 20mm under a 1.2 m straight edge in both longitudinal and transverse directions.  <b>MDR Recording:</b> Routine Maintenance shall be recorded on the MDR as RPC.  Specific Maintenance shall be recorded on the MDR as RPL.	30 Days	M	Defects where deformation under a 1.2 m straight edge exceeds: <ul style="list-style-type: none"> <li>• 20 mm at bridge abutments;</li> <li>• 30 mm in bicycle lanes, Shared Paths, pedestrian crossings and walkthroughs; or</li> <li>• 50 mm in traffic lanes; measured in any direction.</li> </ul>	<b>Shape:</b> Deformation of the surface shall be ≤10 mm in a longitudinal direction under a 3 m straight edge and ≤10 mm in a transverse direction under a 1.2 m straight edge.  <b>Surface:</b> The finish of the final surface shall match the existing surfacing.  <b>Permeability:</b> The repair shall ensure water resistance.
		60 Days	UA, UC		
		90 Days	RA		
		90 Days	RC		
		90 Days	A		

**EDGE BREAK REPAIR (RPE)**

**Application:** This standard applies to the reinstatement of nominal edge of seal.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> The 'edge of seal' is fretted, broken or irregular.</p> <p>Roads with an originally constructed seal width of less than 5.8m, are exempt from Routine Maintenance for RPE.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Nil.</p>	<p>Defects where:</p> <ul style="list-style-type: none"> <li>Broken seal exceeds 100 mm from the nominal edge of seal.</li> </ul> <p>Fretting of seal where:</p> <ul style="list-style-type: none"> <li>Fretted edge exceeds 50mm for 60% on any one side of a segment.</li> </ul> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RPE.</p>	30 Days	M	<p>Defects where:</p> <ul style="list-style-type: none"> <li>Broken seal exceeds 200 mm from nominal edge of seal; or</li> <li>Encroaches into the edge line of the road.</li> </ul>	<p><b>Longitudinal:</b> Deformation in the reinstated edge shall be <math>\leq 15</math> mm under a 1.2m straight edge.</p> <p><b>Transverse:</b> deformation in the reinstated edge shall be <math>\leq 10</math> mm under a 1.2 m straight edge.</p> <p><b>Shape:</b> The edge repair shall maintain the crossfall of the adjacent traffic lane.</p> <p>Longitudinally the edge repair shall 'feather' into the existing seal, such that the edge of seal forms a continuous smooth line. The repair shall be flush with the existing pavement at the join.</p> <p><b>Surface:</b> The finish of the final surface shall match the existing surfacing.</p> <p><b>Permeability:</b> The repair shall ensure water resistance.</p>
		60 Days	UA, UC		
		90 Days	RA		
		90 Days	RC		
		90 Days	A		

Note: Edge Drops are included in Activity RSG

**CRACK SEALING (RPK)**

**Application:** This standard applies to the sealing of cracks or joints in the pavement surface.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Nil.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Cracking includes the following types: block, crescent shaped, diagonal, longitudinal, meandering and transverse as defined in the Austroads "Guide To Visual Assessment of Pavement Condition".</p> <p>Crocodile cracking, where the average least dimension of the cells is less than 300 mm shall be repaired in accordance with Activity RPS/RPT.</p> <p>Crack-sealing of open grade surfaces.</p>	<p>Cracks width &gt; 3 mm.</p> <p>Crocodile cracking &gt; 1 m<sup>2</sup>.</p> <p><b>MDR Recording:</b></p> <p>Defects shall be recorded on the MDR as RPK.</p>	n/a	All	Not applicable.	<p><b>Shape:</b> The resultant surfacing shall be uniform and "level" with the road surface.</p> <p><b>Surface:</b> The skid resistance of the surface shall not be reduced by the treatment.</p> <p><b>Permeability:</b> The repair shall ensure water resistance.</p>

**PAVEMENT DIGOUTS (RPN / RPJ)**

**Application:** This standard applies to the repair of pavement failures.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Shoving, depressions, corrugations, rutting, lumps or ridges with cracking or pumping < 20 m <sup>2</sup> .  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Defects > 20 m <sup>2</sup> .	Defects with deformation > 20 mm under a 1.2 m straight edge in any direction.  <b>MDR Recording:</b> Routine Maintenance shall be recorded on the MDR as RPN.  Specific Maintenance shall be recorded on the MDR as RPJ.	30 Days	M	Defects where deformation under a 1.2 m straight edge exceed: <ul style="list-style-type: none"> <li>• 20 mm at bridge abutments;</li> <li>• 30 mm in bicycle lanes, Shared Paths, pedestrian crossings and walkthroughs; or</li> <li>• 50 mm in traffic lanes.</li> </ul>	<b>Shape:</b> Deformation of the surface shall be ≤10 mm in a longitudinal or transverse direction under a 1.2 m straight edge.  <b>Pavement:</b> The repair shall have the equivalent mechanical properties to the adjacent pavement.  <b>Surface:</b> The finish of the final surface shall match the existing surfacing.  <b>Permeability:</b> The repair shall ensure water resistance.
		60 Days	UA, UC		
		90 Days	RA		
		90 Days	RC		
		90 Days	A		

**POTHOLE REPAIR (RPP)**

**Application:** This standard applies to the repair of small pavement failures during loop inspections.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Potholes and small delamination's <1 m <sup>2</sup> in area.  Defects that extend to the full depth of the wearing course.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Nil.	Carriageway: Defects that extend to the full depth of the wearing course.  Bicycle lanes, Shared Paths, pedestrian crossings and walkthroughs: Defects that are 20 mm deep or > 100 mm diameter.  <b>MDR Recording:</b> Defects shall be recorded on the MDR as RPP.	As encountered or if notified within 4 hours	M, UA, UC	Not applicable	<b>Shape:</b> The perimeter of the repair shall be flush with the existing surface and of regular shape.  <b>Pavement:</b> The repair shall comprise materials that are compatible with, or of better quality than the existing pavement.  <b>Surface:</b> The finish of the final surface shall match the existing surfacing.  <b>Permeability:</b> The repair shall ensure water resistance.
		As encountered or if notified within 24 hours	UC, RA, RC and A		



**PAVEMENT SURFACING (RPS/RPT)**

**Application:** This standard applies to the repair of the pavement surface.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Flushing, ravelling, stripping, delamination, or crocodile cracking where deformation has not reached the Intervention Level for pavement digouts:</p> <p>&lt; 20 m<sup>2</sup> for asphalt &lt; 100 m<sup>2</sup> for other surfaces</p> <p>Crocodile cracking, where the average least dimension of the cells is greater than 300 mm and crack width &gt; 3mm shall be repaired in accordance with Activity RPK.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Defects &gt; 20 m<sup>2</sup> for asphalt &gt; 100 m<sup>2</sup> for other surfaces.</p>	Delamination, or crocodile cracking > 1 m <sup>2</sup> .	30 Days	M	<p>Defects &gt; 50% of the area within a 20 m lane length.</p> <p><b>Bleeding / Flushed Areas:</b> (Picking up on tyres or hazardous to traffic) &gt; 1 m<sup>2</sup>.</p>	<p><b>Shape:</b> Deformation of the surface shall be ≤10 mm in both the longitudinal and transverse direction under a 1.2 m straight edge.</p> <p><b>Pavement:</b> The repair shall have the equivalent mechanical properties to the adjacent pavement.</p> <p><b>Surface:</b> The finish of the final surface shall match the existing surfacing.</p> <p><b>Permeability:</b> The repair shall ensure water resistance.</p>
	Crack of width < 3 mm and visibly pumping fines.	60 Days	UA, UC		
	<b>Bleeding binder:</b> > 30% Distressed area over 20 m length in wheel path.	90 Days	RA		
	<b>Seal stripping:</b> > 30% loss of aggregate over area of 100m <sup>2</sup> .	90 Days	RC		
	<b>MDR Recording:</b> Defects greater than 1m <sup>2</sup> shall be recorded on the MDR as RPS.  Specific Maintenance shall be recorded on the MDR as RPT.	90 Days	A		

**TRAFFIC ISLAND / MEDIAN AND KERB MAINTENANCE (RRT)**

**Application:** This standard applies to the repair of all islands and medians.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Damaged, misaligned kerbing or median noses, interrupted longitudinal drainage flow, tripping hazards.  Localised hazard on the median surface.  Accident damage, reshaping, re-sheeting, or paving of medians and defects.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Nil.	Defects where: Median kerbing and water table is misaligned >50 mm.	30 Days	M	Defects where: Median kerbing is misaligned > 100 mm.	<b>Shape:</b> The resultant median surface shall be compacted, even and free of tripping hazards.  <b>Position:</b> The defect shall be reinstated to its original position.  <b>Material:</b> The defect shall be reinstated with similar material as the parent material.  <b>Surface:</b> Kerbing shall be continuous and feather into the existing kerb.  <b>Permeability:</b> The crossfall of the median shall shed water to the pavement.  <b>Drainage:</b> Kerbing shall not impede longitudinal drainage flows.  <b>Environmental:</b> Behind median kerbings no vegetation within 100 mm of interface with an impervious surface.
	Tripping hazard >30 mm.	90 Days	UA, UC, RC	Tripping hazard > 50 mm.  Water ponding > 20 m.	
	Drainage water ponding >5 m.	90 Days	RA	Defects likely to cause accidents or property damage.	
	<b>MDR Recording:</b> Defects shall be recorded on the MDR as RRT.	180 Days	A		

**PAVEMENT SWEEPING (RPW)**

**Application:** This standard applies to the removal of loose material from the road surface and around road furniture during loop inspections.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Accumulations of aggregate, sand, dirt and other detritus occurring:</p> <ul style="list-style-type: none"> <li>on pavement, medians or shoulders;</li> <li>surrounding street light bases, traffic signal bases or signpost/gantry bases greater or equal to 100 mm diameter;</li> <li>surrounding safety barrier and wire rope posts and anchor footings and crash cushions tracks;</li> <li>on pedestrian crossings or walkways, Shared Paths, and footpaths on structures; and</li> <li>any glass in bicycle lanes.</li> </ul> <p><b>Cyclical Routine Maintenance:</b> The programmed bi-annual cleaning of all light pole, traffic signal, safety barrier and signpost / Gantry bases greater or equal to 100mm diameter.</p> <p><b>Specific Maintenance:</b> Nil.</p>	<p>Defects exceeding:</p> <ul style="list-style-type: none"> <li>1 m<sup>2</sup> at intersection segments in urban areas, bicycle lanes, Shared Paths, pedestrian crossings or walkways;</li> <li>1 m<sup>2</sup> in bicycle lanes;</li> <li>20 m<sup>2</sup> at rural intersections and aprons; or</li> <li>10 m<sup>2</sup> in other road pavement locations.</li> </ul>	As encountered or if notified within 24 hours	M, UA and UC	Not Applicable	<p><b>Surface</b> All loose material removed and surface shall be free draining.</p> <p>No built up material surrounding road lighting bases, traffic signal bases or signposts/gantries greater or equal to 100 mm diameter, safety barrier and wire rope posts and anchor footings and crash cushions tracks.</p> <p><b>Delineation</b> All pavement markings shall be visible.</p>
	<p>Defects covering 20 m length of edge line.</p> <p>Any glass in bicycle lanes.</p>	As encountered or if notified within 48 hours	RA and RC		
	<p>Defects on structures diverting water flow from its normal course.</p> <p>Street lighting base, traffic signal bases, or signposts/gantries greater or equal to 100 mm dia, safety barrier and wire rope posts, anchor footings, crash cushions tracks: Loose material build-up of more than 50 mm high at any point around the base.</p> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RPW.</p>	As encountered or if notified within 72 hours	A		

**UNSEALED SURFACE (RSG)**

**Application:** This standard applies to the maintenance of unsealed surfaces.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Edge drop, rutting, minor scour, corrugations and potholes.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Nil.	<b>Defects where:</b> Throughout the length of a shoulder, the edge drop exceeds 50 mm over any 100 m length.  <b>MDR Recording:</b> Defects shall be recorded on the MDR as RSG.	30 Days	M	<b>Defects:</b>  <b>Shoulder:</b> Any single defect 80 mm deep.  Water ponding > 5 m.  <b>Roadside facilities:</b> rest areas corrugations or other distress > 50% of the trafficked area.	<b>Drainage:</b> Water shall not pond on the shoulder. Typically the invert level of the table drains is to be ≥ 300 mm below the surface at the edge of formation. Turn outs shall not deliver drainage directly downhill.  <b>Crossfall:</b> Maintain at current crossfall, any increase to the shoulder crossfall is to be minimised.  <b>Surface:</b> Shoulder surface shall be free of defects no windrow present between the pavement and the table drain.  <b>Edge drop:</b> Throughout the length of a shoulder, the edge drop shall not exceed 20 mm over any 20 m length.  <b>Rest Areas:</b> the surface shall be uniform, and the formation width shall not be increased.  <b>Environmental:</b> No vegetation present. Minimal impacts to surrounding vegetation.
		60 Days	UA, UC and RA		
		90 Days	RC		
		90 Days	A		

**RESHEETING UNSEALED SURFACE (RSR)**

**Application:** This standard applies to the re-sheeting of unsealed surfaces and the removal and installation of guide posts.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Nil.  <b>Cyclical Routine Maintenance:</b> Nil.  <b>Specific Maintenance:</b> Shoulder crossfall.	Shoulder crossfall exceeding 10% except in areas of superelevated section of road where it shall match with +/- 7% of the adjacent trafficked lanes.  <b>MDR Recording:</b> Defects shall be recorded on the MDR as RSR.	n/a	All	Not applicable.	<b>Drainage:</b> Drainage from the sealed pavement across the shoulder shall be effective. Typically, the invert level of the table drains are $\geq 300$ mm below the surface at the edge of formation. Water shall not pond in the table drain.  <b>Crossfall:</b> Shoulder crossfall is to match the crossfall of the adjacent traffic lane.  Rest areas shall have sufficient crossfall for drainage.  <b>Pavement:</b> Compacted in accordance with M10 Attachment 2.  <b>Shape:</b> The grade shall reflect the super elevation or crossfall of the pavement.  <b>Environmental:</b> No vegetation present.  Minimal impacts to surrounding vegetation.

**SAFETY BARRIER (RFB / RFG)**

**Application:** This standard applies to the maintenance of safety barrier including the realignment, accident damage repair to safety barrier. Safety barrier includes guardrail, crash cushions or any other device other than wire rope.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Missing or loose components.</p> <p>Make safe, Damaged Safety Barriers.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Damaged or deformed safety barrier, footings and posts, deteriorated-cables and timber posts, low sand levels around breakaway ends, repair of corroded safety barrier components and misaligned posts.</p>	<p>Defects:</p> <ul style="list-style-type: none"> <li>• Missing or loose components.</li> <li>• Safety issues present associated with damaged Safety Barrier.</li> </ul> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RFB.</p> <p>Specific Maintenance defects shall be recorded on the MDR as RFG.</p>	<p>48hrs</p> <p>24hrs</p>	<p>All</p> <p>All</p>	<p>Not applicable</p>	<p><b>Safety Barrier:</b> Components align with existing installation, are installed and maintained in accordance with the manufacturer's instructions. Damaged components removed and the site left safe.</p>

**DELINEATORS (RFD)**

**Application:** This standard applies to the correction of damaged or missing delineators, their mountings, pavement bars and the recording of locations where raised pavement markers are missing during loop inspections.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Missing or incorrectly positioned delineators or pavement bars.</p> <p>Loss of retro-reflectivity identified as part of the asset inspection.</p> <p>Guideposts that are not vertical or are not readily visible in daylight.</p> <p>Delineators damaged by vehicle accidents or vandalism.</p> <p>Replacement of pavement bars and retroreflective raised Pavement Markers (RRPMs).</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Nil.</p>	<p>Defects where:</p> <ul style="list-style-type: none"> <li>Any 2 consecutive delineators (other than guideposts) of the same type is missing or defective or 3 delineators (other than guideposts) of the same type is missing or defective in a segment.</li> <li>50% of the white painted guideposts is degraded.</li> <li>At culverts without bridge rail or safety barriers, any delineator missing or defective.</li> <li>Any guidepost is missing or leaning more than 10% from vertical.</li> <li>Any Pavement bar or RRPM is missing.</li> </ul> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RFD.</p>	As encountered or if notified within 4 hours.	All	Not applicable	<p><b>Guideposts:</b></p> <ul style="list-style-type: none"> <li>Shall be spaced at 150 m on straights and in accordance with AS 1742.2 on curves;</li> <li>Shall be vertical; and</li> <li>Shall be white.</li> </ul> <p><b>Retro reflective delineators</b> shall be visible from the 'approach sight distance'.</p> <ul style="list-style-type: none"> <li>On straight sections of road, at least 2 consecutive pairs visible.</li> <li>On the outside of any curve, at least 3 consecutive posts visible.</li> </ul> <p><b>Pavement bars</b> shall be:</p> <ul style="list-style-type: none"> <li>Painted yellow;</li> <li>In place; and</li> <li>Visible under low beam.</li> </ul> <p><b>RRPM's</b> shall be;</p> <ul style="list-style-type: none"> <li>In place as per original installation; and</li> <li>Visible under low beam.</li> </ul>

**SIGNS (RFR / RFS)**

**Application:** This standard applies to the inspection, cleaning of all signs and replacement of deteriorated, damaged or missing signs and supports. This excludes the mechanical / electrical parts **ONLY** of electronic signs\*.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Missing, damaged (physical), or vandalised.</p> <p>Misaligned signs and supports.</p> <p>Signs damaged as a result of vehicle accidents or vandalism.</p> <p>Signs not legible under low beam vehicle lights at the 'safe stopping sight distance' or loss of reflectivity.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Nil.</p>	<p>Defects where:</p> <p><b>All Signs:</b> Sign support is leaning more than 5% from vertical.</p> <p><b>Signs other than Regulatory and Warning Signs:</b> Missing and damaged signs and supports.</p> <p>If any of the sign legend is illegible from the 'safe stopping sight distance'.</p> <p>The retro reflective luminance of the sign is less than 50% of the luminance prescribed for new retro reflective sheeting.</p> <p><b>MDR Recording:</b> Routine Maintenance Defects shall be recorded on the MDR as RFR.</p> <p>Specific Maintenance Defects shall be recorded on the MDR as RFS.</p>	4 weeks	All	<p>Defects where:</p> <p><b>Regulatory and Warning Signs:</b> Missing or damaged signs and supports.</p> <p>If any of the sign legend is illegible from 'the safe stopping sight distance'.</p> <p>The retro reflective luminance of the sign is less than 50% of the luminance prescribed for new retro reflective sheeting.</p> <p><b>All Signs:</b> Sign support is leaning more than 10% from vertical.</p>	<p><b>Appearance</b> All signs supports shall be vertical. The upper edge of rectangular /square sign shall be horizontal. Signs shall be clean.</p> <p><b>Location</b> Signs shall be offset from the edge line, kerb or edge of seal in accordance with Part RD-LM-C4 "Sign Installation".</p> <p><b>Legibility</b> Signs shall be clearly legible from the stopping sight distance as specified in the AS 1742.2 Table 2.3 (day and night).</p>

Refer Part M12 "Maintenance – Electrical and Mechanical – General"



**FENCES (RRF / RRB)**

**Application:** This standard applies to the inspection and maintenance of all fencing including: median fences, pedestrian fences, boundary fences and protective fencing at road side rest areas, stack sites and weigh stations.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Repair of loose components, cut wire mesh, open access gates and breaches to freeway boundary fences.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Replacement of damaged, missing or deteriorated, fencing components and footings.</p>	<p>Damaged, missing, deteriorated and loose components.</p> <p><b>MDR Recording:</b> Routine Maintenance Defects shall be recorded on the MDR as RRF.</p> <p>Specific Maintenance defects shall be recorded on the MDR as RRB.</p>	4 weeks	All	<p>Defects where: The defect constitutes a hazard to either road users or pedestrians.</p> <p>The potential for or actual entry of animals onto a Motorway or Control of Access road.</p>	<p><b>Functionality</b> Fences provide the function for which they were installed.</p> <p><b>Appearance</b> Repair materials are similar in colour and appearance to the original materials.</p> <p><b>Environmental:</b> No vegetation within 500 mm of fencing.</p>

**WIRE ROPE BARRIER (RWR / RWG)**

**Application:** This standard applies to the repair and tensioning of ropes following damage to rope safety barriers or deformed components or sagging cables.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Missing or loose components.</p> <p>Programmed testing and tensioning as per manufacturer's instructions.</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Damaged or deformed wire rope barrier system, sagging cables and repair of corroded safety barrier components.</p>	<p>Defects:</p> <ul style="list-style-type: none"> <li>• Missing or loose components</li> <li>• Damaged Wire Rope Barrier</li> </ul> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RWR.</p> <p>Specific Maintenance shall be recorded on the MDR as RWG.</p>	1 week	All	Not applicable	<p><b>Wire Rope Barrier:</b> Components align with existing installation, are installed and maintained in accordance with the manufacturer's instructions, damaged components removed and the site left safe.</p>

**ROAD USER AMENITY MAINTENANCE (RRA/RRP)****Application:** This standard applies to roadside facilities.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Defacing or damage to tables, toilets, litter bins, sun shelters, lighting, monuments, windsocks and water tanks that are repairable. (Including replacement of taps).</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Damaged asset elements that are beyond repair.</p>	<ul style="list-style-type: none"> <li>Defacing or damage to tables, litter bins, sun shelters, toilets and monuments;</li> <li>Wind socks are missing, damaged or faulty;</li> <li>Water tanks are empty or damaged; or</li> <li>Facilities that are in an unsafe condition.</li> </ul> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RRA.</p> <p>Specific Maintenance shall be recorded on the MDR as RRP.</p>	As per loop inspections.	All	Facilities which are in an unsafe condition.	<p><b>Furniture:</b> Tables, litter bins, sun shelters, monuments, windsocks, toilets and water tanks are functional and do not present a hazard to road users.</p> <p><b>Water tanks:</b> full of potable water, taps functional and lids secure.</p> <p><b>Windsocks:</b> Operational.</p> <p><b>Litter:</b> Litter bin lids in place and secured with locks.</p> <p><b>Lighting:</b> Operational</p> <p><b>Environmental:</b> No vegetation within 500 mm of tables, litter bins, sun shelters, monuments, windsocks, and water tanks (including the tap).</p>

**LITTER COLLECTION (RRL/RRC)**

**Application:** This standard applies to the collection and removal of roadside litter.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b> Litter or debris on the carriageway, drains, medians, at roadside rest areas, stack sites and weigh stations. Road kill, (dead animals) on the carriageway.</p> <p>Emptying of litter bins.</p> <p>Litter visible from the carriageway that is located within the road reserve (fence line to fence line or kerb to kerb as applicable).</p> <p>Relocation of Abandoned vehicles and car bodies from within the Clearance Envelope</p> <p><b>Cyclical Routine Maintenance:</b> Nil.</p> <p><b>Specific Maintenance:</b> Hard waste comprising of general household or commercial type waste not considered as normal road user litter, including tyres greater than 5 in number from any one site.</p> <p>The complete removal of abandoned vehicles from Control of Access and Out of District areas.</p>	<p>Defects where: Litter or debris on carriageway, in bins, roadside rest areas, Shared Paths, stack sites and weigh stations or visible from the carriageway.</p> <p>Abandoned vehicles and car bodies within the road corridor.</p> <p><b>MDR Recording:</b> Routine Maintenance Defects shall be recorded on the MDR as RRL</p> <p>Specific Maintenance shall be recorded on the MDR as RRC.</p>	As per loop inspections	All	<p>Defects where:</p> <ul style="list-style-type: none"> <li>Litter or debris constitutes a hazard to road users;</li> <li>Animal carcasses on the carriageway;</li> <li>Litterbins are full or ineffective; or</li> <li>Road users complain about litter.</li> </ul>	<p><b>Safety:</b> Dead animals removed from the carriageway.</p> <p><b>Appearance:</b> No litter visible:</p> <ul style="list-style-type: none"> <li>from the carriageway</li> <li>from the roadway for all Out of District and Control of Access areas;</li> <li>within the Clearance Envelope for all other areas;</li> <li>within road side rest areas and weigh stations.</li> </ul> <p><b>Waste management:</b> Litter bins empty and lined with a plastic bag.</p> <p>Litter disposed of at a licensed waste depot.</p> <p>Abandoned vehicles and car bodies removed from the road corridor.</p>

**GRAFFITI REMOVAL (RMG)**

**Application:** This standard applies to the removal of graffiti including scoring, posters and stickers.

Activity Type	Intervention Level	Response Time	Road Class	Compulsory Intervention Level	Performance Requirement
<p><b>Routine Maintenance:</b></p> <p>Unwanted defacing by drawing, writing, painting, scoring or placement of posters, stickers on all assets which includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>a) all electrical infrastructure (traffic signal furniture, red light camera's and road lighting poles);</li> <li>b) roadside furniture, emergency telephones;</li> <li>c) the road surface, bridge handrails, delineators, crash barriers, or bridges and their abutments; and</li> <li>d) gantries.</li> </ul> <p>Graffiti on the boundary fences of Control of Access roads.</p>	<p>Defect: Unwanted defacing of assets.</p> <p><b>MDR Recording:</b> Defects shall be recorded on the MDR as RMG.</p>	<p>As per loop inspections or 48 hours where notified</p>	<p>All</p>	<p>Defect: Offensive graffiti.</p> <p>Safety of road users is compromised by the graffiti.</p>	<p><b>Appearance:</b> Assets shall be free of drawing, writing, paint, scoring posters, stickers and graffiti.</p> <p><b>Surface:</b> The surface is not damaged by the cleaning.</p> <p>Water blasting and abrasive cleaning should not be used as treatments.</p> <p><b>Colour Matching:</b> To be agreed by the Superintendent prior to work commencing.</p>

**Bridges and Structures Repairs (RBR)****Application:** This standard relates to Level 1 Inspections and Minor Repairs

Activity Type	Intervention Level	Response Time	Marine Class	Compulsory Intervention Level	Performance Requirement
<b>Routine Maintenance:</b> Nil.  <b>Cyclical Routine Maintenance:</b> Level 1 inspections on all structures, annually.  <b>Specific Maintenance:</b> Repair or replacement of any damaged or end of life components for DPTI structures.	N/A  <b>MDR Recording:</b>  Specific Maintenance shall be recorded on the MDR as RBR.	N/A	All	N/A	All works and repairs must meet all relevant: <ul style="list-style-type: none"> <li>• DPTI Master Specifications;</li> <li>• Australian Standards;</li> <li>• DPTI Bridge Repair Manual; and</li> <li>• Other relevant current standards associated with bridge construction and repair.</li> </ul>

## **ATTACHMENT 2**

### **PAVEMENT AND FENCING TYPES**

**PAVEMENT DETAILS****PAVEMENT– SPRAY SEAL TREATMENTS**

TYPE	DESCRIPTION	LAYER	NOMINAL COMPACTED THICKNESS	MATERIAL	APPLICATION RATES* AND ADDITIONAL DETAILS
Bituminous Seal Type 1	10/5mm Double Spray Seal	Bottom	NA	Binder: CRS170/67 Aggregate: SA 10-7mm	0.9L/m <sup>2</sup> residual bitumen Spread Rate: 1m <sup>3</sup> /120m <sup>2</sup>
		Top	NA	Binder: CRS170/67 Aggregate: SA 5-2mm	0.8L/m <sup>2</sup> residual bitumen Spread Rate: 1m <sup>3</sup> /190m <sup>2</sup>
Bituminous Seal Type 2	14/7mm Double Spray Seal	Bottom	NA	Binder: CRS170/67 Aggregate: SA 14-7mm	1.0L/m <sup>2</sup> residual bitumen Spread Rate: 1m <sup>3</sup> /190m <sup>2</sup>
		Top	NA	Binder: CRS170/67 Aggregate: SA 5-2mm	0.8L/m <sup>2</sup> residual bitumen Spread Rate: 1m <sup>3</sup> /120m <sup>2</sup>
Bituminous Seal Type 3	7mm Single Spray Seal	Top	NA	Binder: CRS170/67 Aggregate: SA 7-5mm	0.8L/m <sup>2</sup> residual bitumen Spread Rate: 1m <sup>3</sup> /180m <sup>2</sup>

\* Application rates are indicative only; design of actual rates used shall be the responsibility of the Contractor.

**PAVEMENT– GRANULAR TREATMENTS**

TYPE	DESCRIPTION	LAYER	NOMINAL COMPACTED THICKNESS	MATERIAL	APPLICATION RATES AND ADDITIONAL DETAILS
Pavement Treatment Type 1	150mm cement stabilised existing granular pavement	Base Course	150mm	Existing material stabilised with GB cement	1% Cement, 96% Relative Modified Compaction (RMC)
Pavement Treatment Type 2	150mm cement stabilised existing granular pavement	Base Course	150mm	Existing material stabilised with GB cement	2% Cement, 96% RMC
Pavement Treatment Type 3	150mm lime stabilised existing granular pavement	Base Course	150mm	Existing material stabilised with lime	2% Hydrated lime complying with AS 1672 "Building Limes". 96% RMC



**PAVEMENT– SHOULDER TREATMENTS**

Materials required for shoulder construction shall be PM 2/20QG and PM 3/20QG.

<b>TREATMENT CATEGORY</b>	<b>TREATMENT TYPE</b>	<b>LAYER CONFIGURATION</b>
Shoulder Box Out	One layer of 150mm depth (PM2/20 or Equivalent)	Layer F
	Two layers of 150mm depth (PM2/20 or Equivalent)	Layer F Layer F
	Three layers of 150mm depth (PM2/20 or Equivalent)	Layer F Layer F Layer F
Shoulder Top and Tyne	Top and Tyne up to 100mm depth	Layer G

**LAYER DETAILS**

<b>CONFIGURATION</b>	<b>NOMINAL COMPACTED THICKNESS</b>	<b>MATERIAL</b>	<b>APPLICATION RATES &amp; ADDITIONAL DETAILS</b>
Layer F	150 mm	PM2/20	98% MDD TBA
Layer G		PM3/20	96% MDD

Shoulder crossfalls shall be as follows:

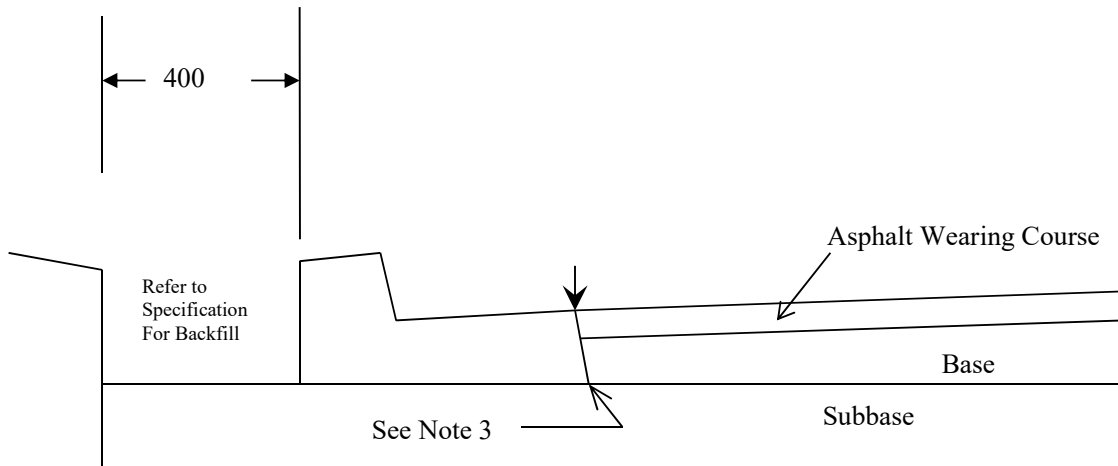
<b>LOCATION</b>	<b>CROSSFALL</b>	<b>TOLERANCE</b>
Straights	4 % or same as crossfall of adjacent pavement	+ 1%, - 1%
Outside of Curve	Same as crossfall of adjacent pavement	+ 2%, - 0%
Inside of Curve	Same as crossfall of adjacent pavement	+ 0%, - 2%

**PAVEMENT– ASPHALT TREATMENTS**

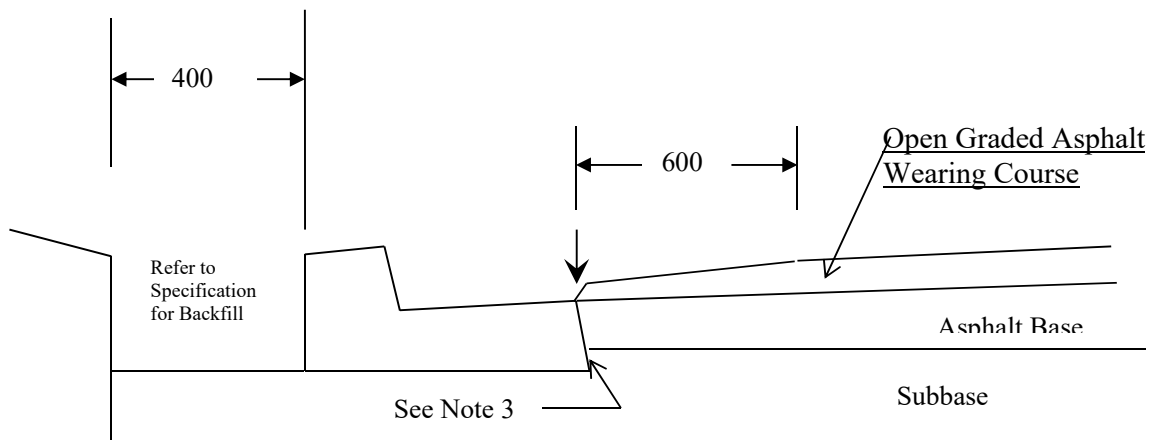
<b>TREATMENT CATEGORY</b>	<b>TREATMENT TYPE</b>	<b>LAYER CONFIGURATION</b>
Asphalt  Plane and Reinstatement	Up to 40mm Depth AC 10 (Dense Mix)	Layer A
	Up to 40mm Depth AC 10 (Modified Mix)	Layer A (Mod)
	Up to 80mm Depth AC 10 (One layer of Dense Mix)	Layer A
	Up to 80mm Depth AC 10 (Two equal depth layers of Modified Mix)	Layer A (Mod) Layer A (Mod)
	Up to 150mm Depth AC10 (top layer modified) and AC14 (second layer) Dense Mix	Layer A (Mod) Layer B Layer B

**LAYER DETAILS**

<b>CONFIGURATION</b>	<b>NOMINAL COMPACTED THICKNESS</b>	<b>MATERIAL</b>	<b>APPLICATION RATES &amp; ADDITIONAL DETAILS</b>
Layer A	40 mm	AC10	
Layer B	50 mm	AC14	Layer thickness greater than 80 mm shall be installed in two equal layers
Layer D		Binder: C170 or CRS170 Aggregate: SA 10-7	0.9 L/m <sup>2</sup> residual bitumen Spread rate: 1 m <sup>3</sup> / 120 m <sup>2</sup>
Layer E		Binder: C170 or CRS170 Aggregate: SA 5-2	0.9 L/m <sup>2</sup> residual bitumen Spread rate: 1 m <sup>3</sup> / 190 m <sup>2</sup>



### Asphalt Wearing Course



## Open Graded AC

**NOTE:**

1. Drawing not to scale. Diagram is for illustration only.
2. All dimensions in millimetres.
3. Kerb and gutter may need to be recessed into subbase to achieve required cross section. Refer to Specification for details.
4. Indicates where control given in Geometric Details.

## **Kerb and Gutter Abutting New Pavement      MS220-1**

### **FENCING TYPES - SUPPLY & INSTALLATION**

For the replacement of any existing fence, the Contract shall replace 'like for like' unless directed otherwise. The following are only examples of the types of fencing.

#### **1. Median or Roadside Fence**

Mesh wire	6/70/30
Number of plain wires	2
Spacing of posts	16 m
Number of star droppers between posts	3
Type of star droppers between posts	galvanised or black

#### **2. Vermin Fence**

Galvanised Netting	900 mm high, mesh size 40 mm, wire diameter 1.4 mm
Number of plain wires	2
Spacing of posts	16 m
Number of star droppers between posts	3
Type of star droppers between posts	galvanised or black

#### **3. Chain Link Fencing**

Chain link netting	Black powdered coated
Colour of posts	Black powdered coated
Height of fence	1800 mm

#### **4. Pedestrian Safety Fence**

Colour	G25 Olive Green as defined by AS 2700
	G61 Heritage Green as defined by AS 2700