DEPARTMENT *of* INFRASTRUCTURE, ENERGY *and* RESOURCES

TASMANIA

ROADWORKS SPECIFICATION

R59 – Sealed Pavement Maintenance

November 2010

Index **Page**

R59.1 SCOPE

This Specification sets out the Maintenance requirements on Sealed Pavements for:

- The repair of potholes.
- The repair of delaminations
- The repair of edge defects.
- The repair of cracks.
- The repair of deformations, including shoving.
- The treatment of seal bleeding.

R59.2 REFERENCES

This specification shall be read in conjunction with the following specifications:

- G1 General Provisions/MG1 Maintenance General Provisions.
- G2 Contract Management Plan/MG1 Maintenance General Provisions.
- G3 – Traffic Management.
- G4 – Compaction Assessment.
- G7 – Asphalt Production.
- R40 – Pavement Base and Sub-base.
- R43 – Pavement and Shoulder Maintenance.
- R51 – Sprayed Bituminous Surfacings.
- R55 – Asphalt Placement.
- R64 – Pavement Markings.

R59.3 DEFINITIONS

DEFECT TYPE	DESCRIPTION
Cracks	Cracks are defined as fissures resulting from partial or complete fractures of the pavement surface.
Deformation	A deformation is a depression or bulge in a road surface outside of the constructed (intended) profile.
Deformation - Shoving	Bulging of the road surface generally parallel to the direction of traffic and/or horizontal displacement of surfacing materials, mainly in the direction of traffic where braking or acceleration movements occur. Transverse shoving may arise with turning movements.
Deformation - Rutting	A form of pavement deformation being a longitudinal depression in a road surface, usually but not always in a wheelpath. The length to width ratio of rutting is usually greater than 4:1.
Deformation - Corrugations	Transverse undulations in the pavement surface or base, closely and regularly spaced, with wave lengths typically in the range of 0.3m to 2.0m.
Delamination	Loss of a discrete section of wearing course layer.
Edge Breaks	A pavement surface defect in which the edge of the bituminous surface is fretted, broken or irregular.
Flushing, including Seal Bleeding	Flushing is an excess of binder on the surface of a pavement. During hot weather, bleeding (softening) of the excess binder may occur and as a result the bitumen is liable to pickup by tyres.
Nominal Seal Edge	The nominal seal edge is defined as a straight line or smooth curve joining the two widest points on the edge of the seal in any 20m length of road.

DEFECT TYPE	DESCRIPTION
Pothole	A steep sided or bowl shaped cavity extending into layers below the wearing course.
Sealed Pavements	Sealed pavements are inclusive of sealed shoulders.
Sealed Shoulders	A shoulder shall be deemed to be sealed when the width of seal beyond the edgelines exceeds 350mm.

R59.4 REQUIREMENTS

R59.4.1 General

R59.4.1.1 Preparation

Prior to commencing any repairs, all loose materials and distressed pavement immediately surrounding the pavement defect shall be removed.

Where unbound granular materials are being used for the repair, the walls shall be trimmed to a battered slope no flatter than 45 degrees and the depth increased to a minimum of 2.5 times the maximum particle size of the repair material.

In asphalt pavements the perimeter of the defect shall be squared up prior to repair.

R59.4.1.2 Repair

Granular pavement materials shall match those of the surrounding pavement layers and comply with the requirements of Standard Specification R40 Pavement Base and Subbase.

Granular pavement materials shall be Base Class A and Sub-base 1.

The Contractor shall provide evidence that the compaction processes adopted, satisfy the requirements of Standard Specification G4 Compaction Assessment.

All bituminous surfacing materials and repairs shall comply with Standard Specifications R51 Sprayed Bituminous Surfacings, G7 Asphalt Production or R55 Asphalt Placement, as appropriate. Cold laid asphalt products, if approved for use by the Superintendent, shall not be used in depths greater than 50 mm.

Where existing pavement markings are removed by either the original defect or the repair methodology, temporary delineation shall be provided immediately after the completion of the repair. The Contractor shall maintain temporary delineation until permanent pavement markings are installed. Permanent pavement markings shall be installed within the time limits specified in Standard Specification R64 Pavement Markings.

For all completed repair sites, loose aggregate or deleterious material shall be removed within 48 hours or the requirements of Standard Specification R51 Sprayed Bituminous Surfacings, whichever is the lesser.

R59.4.2 Potholes

The wearing surface shall be restored to a smooth, free draining, non-permeable and stable condition with a bituminous seal that is consistent with the adjacent surfacing.

Any backfill material used shall be thoroughly compacted to achieve a dense, stable repair that does not move under normal traffic conditions.

A sprayed seal shall be applied to granular material repairs. It shall extend at least 100 mm onto the existing sealed surface in all directions.

R59.4.3 Delaminations

The wearing surface shall be restored to a smooth, free draining, non-permeable and stable condition with a bituminous seal that is consistent with the adjacent surfacing.

R59.4.4 Edge Breaks

The edge break repair shall be finished with a bituminous material conforming to the requirements of Standard Specifications G7 Asphalt production and R55 Asphalt Placement.

R59.4.5 Cracks

Prior to the treatment, areas to be treated shall be prepared by removing any grit, soil, any other detritus material or excess moisture that may be present.

Cracks shall be treated with materials complying with R51 and or approved sealants. All sealants shall be used in accordance with the manufacturer's instructions.

The surface shall be "treated" to prevent pick up by vehicle tyres or "tracking" by pedestrians or variation to skid resistance.

R59.4.6 Deformations

The Superintendent shall nominate and / or approve all permanent treatments for deformation repairs.

In relation to shoving defects, the Contractor shall remove the pavement bulge and temporarily repair and maintain the pavement until such time as the Superintendent nominates and / or approves the permanent treatment.

The wearing surface of the permanent treatment shall be restored to a smooth, free draining, non-permeable and stable condition with a bituminous seal that is consistent with the adjacent surfacing.

Any backfill material used shall be thoroughly compacted to achieve a dense, stable repair that does not move under normal traffic conditions.

A sprayed seal shall be applied to granular material patches. It shall extend at least 100 mm onto the existing sealed surface in all directions.

For any repairs that require the existing pavement materials to be removed and or modified including shoving repairs, millouts, digouts and reconstruction patches, the requirements are to be in accordance with Standard Specification R43 Pavement and Shoulder Maintenance.

R59.4.7 Seal Bleeding

Aggregate shall be clean and single sized in accordance with the requirements of Standard Specification R51 Sprayed Bituminous Surfacings. The nominal size shall be no larger than the aggregate of the surrounding surface.

The surface repair shall have no exposed bituminous material.

Repair material and binding agents used shall not cause damage to the integrity of the existing bituminous surfacing.

Excessive repair material that may cause a hazard to road users shall be removed before the treated area is re-opened to traffic.

R59.4.8 Disposal of Material

All material to be disposed of shall become the property of the Contractor unless otherwise stated in the Specification. The Contractor shall arrange suitable off-site disposal areas for all such material. All such material including detritus and debris shall be removed and disposed in accordance with all relevant legislation and Standard Specifications G1 General Provisions/MG1 Maintenance General Provisions and G2 Contract Management Plan/MG2 Maintenance Contract Management Plan.

R59.5 PERFORMANCE CRITERIA

R59.5.1 Maintenance in Construction Contracts

The intervention levels and the condition following treatment are set out in *Table R59.1 Intervention Levels Construction Contracts.*

Table R59.1 Intervention Levels Construction Contracts

ROUTINE MAINTENANCE TREATMENT	INTERVENTION LEVEL	MINIMUM CONDITION AFTER TREATMENT
Potholes in Sealed Pavements (including sealed shoulders)	Pothole with depth >25 mm and/or any dimension > 300 mm in the plane of the road surface.	The repair shall be flush with the existing surface and where practical the surface texture will be comparable to the surrounding surfacing.
Delaminations in Sealed Pavements (including sealed shoulders)	Delamination with any dimension > 300 mm in the plane of the road surface. Delamination holds water.	The repair shall be flush with the existing surface and where practical the surface texture will be comparable to the surrounding surfacing.
Edge Breaks on Sealed Pavement (including unsealed and sealed shoulders)	Unsealed Shoulder - Edge break is >100 mm from the nominal seal edge Sealed Shoulder - Edge break is >250 mm from the nominal seal edge	On completion, the outer edge of the repair shall present a uniform line lying between 0 and 50mm outside the nominal edge of the seal being repaired. Where the edge break repair exceeds 10m in length, the deviation both along the repair and between the existing pavement and the repair, as measured with a 3m straight edge, shall not exceed 10mm.

ROUTINE MAINTENANCE TREATMENT	INTERVENTION LEVEL	MINIMUM CONDITION AFTER TREATMENT
Cracking	Any cracking >5mm in width, associated with pavement settlement and / or slippage, shall be reported.	The repair shall be flush with the existing surface
Deformations (excluding shoving)	Deformation > 30 mm depth under a 1.2 m straight edge – measured in the transverse direction. Deformation > 30 mm depth under a 3.0 m straight edge – measured in the longitudinal direction.	Repairs shall be to the following requirements: The deviation between the existing pavement and the repair, as measured with a 3m straight edge, shall not exceed 10mm. The type and quality of the finished surface shall match the existing surfacing or provide improved performance in terms of water resistance and skid resistance.
Shoving	Any shoving with a depth >75mm as measured under a 1.2m straight edge.	Repairs shall be to the following requirements: The deviation between the existing pavement and the repair, as measured with a 3m straight edge, shall not exceed 10mm. • The type and quality of the finished surface shall match the existing surfacing or provide improved performance in terms of water resistance and skid resistance.
Seal Bleeding Treatment	Any individual area of seal bleeding area > 5 m^2	The type and quality of the surface finish shall match the existing adjacent surface. The skid resistance of the surface shall not be reduced by the treatment.

R59.5.2 Network Maintenance Contracts

The intervention levels and the condition following treatment or reinstatement are set out in *Table R59.2 Intervention Levels Maintenance Contracts.*

Table R59.2 Intervention Levels Maintenance Contracts

ROUTINE MAINTENANCE TREATMENT	INTERVENTION LEVEL	MINIMUM CONDITION AFTER REINSTATEMENT
Pothole Maintenance	As specified in Contract	The repair shall be flush with the existing surface and where practical the surface texture will be comparable to the existing surfacing.
Delamination Maintenance	As specified in Contract	The repair shall be flush with the existing surface and where practical the surface texture will be comparable to the existing surfacing.

ROUTINE MAINTENANCE TREATMENT	INTERVENTION LEVEL	MINIMUM CONDITION AFTER REINSTATEMENT
Edgebreak Maintenance	As specified in Contract	On completion, the outer edge of the repair shall present a uniform line lying between 0 and 50mm outside the nominal edge of the seal being repaired. Where the edge break repair exceeds 10m in length, the deviation both along the repair and between the existing pavement and the repair, as measured with a 3m straight edge, shall not exceed 10mm.
Cracking	As specified in Contract	The repair shall water proof the pavement and be flush with the existing surface.
Deformation Maintenance (including corrugations, depressions, heaves and rutting)	As specified in Contract	Repairs shall satisfy the following requirements: The deviation between the existing pavement and the repair, as measured with a 3 m straight edge, shall not exceed 10mm. The type and quality of surface finish shall match the existing surfacing or provide improved performance in terms of water resistance and skid resistance.
Shoving Maintenance	As specified in Contract	The initial repair shall make the surface safe for road users. The permanent repair shall be designed by the Superintendent and constructed in accordance with R43. Permanent Repairs shall be to the following requirements: The deviation between the existing pavement and the repair, as measured with a 3m straight edge, shall not exceed 10mm. The type and quality of the finished surface shall match the existing surfacing or provide improved performance in terms of water resistance and skid resistance.
Seal Bleeding	As specified in Contract	The type and quality of the surface finish shall match the existing adjacent surface. The skid resistance of the surface shall not be reduced by the selected treatment.

R59.6 MEASUREMENT AND PAYMENT

R59.6.1 Maintenance in Construction Contracts

Payment shall be at the relevant Scheduled rate and shall include the supply of all plant, labour and materials required. Payment for the maintenance management of sealed pavements shall include the repair of potholes, delaminations, edge breaks, cracking, deformation, shoving and

seal bleeding. Payment shall be on a pro-rata basis over the contract period (ref schedule of rates: 5.19 to 5.23).

Payment shall include the supply of all plant, labour and materials required.

Payment shall also include compaction of the area prior to repair, preparation of the area, the designs and removal and disposal of material.

R59.6.2 Network Maintenance Contracts

Payment shall be in accordance with the relevant schedule and shall include the supply of all plant, labour and materials required.

Payment shall also include compaction of the area prior to repair, preparation of the area, the design of the crack seal/filling and replacement of any removed or damaged pavement markings, where applicable.