

PART M64**MAINTENANCE ROAD SIDE FURNITURE****CONTENTS**

1. GENERAL
2. QUALITY REQUIREMENTS
3. RESPONSE TIMES
4. RECORDS AND REPORTING
5. ADDITIONAL REQUIREMENTS
6. HOLD POINTS
7. ATTACHMENT M64A MAINTENANCE ACTIVITIES SAFETY BARRIER (FB / FG)
8. ATTACHMENT M64B MAINTENANCE ACTIVITIES DELINEATORS (FD / FP)
9. ATTACHMENT M64C MAINTENANCE ACTIVITIES SIGNS (FR / FS)
10. ATTACHMENT M64D MAINTENANCE ACTIVITIES FENCES (RF / RB)
11. ATTACHMENT M64E MAINTENANCE ACTIVITIES WIRE ROPE BARRIER (WR / WG)

1. GENERAL

- .1 This Part specifies the requirements for maintenance of roadside furniture (i.e. signs, delineators, safety barrier, wire rope and fencing).
- .2 Documents referenced in this Part are listed below:
 - (a) Clause 810.3.2 "Loop Inspections"
 - (b) Part 810.3 "Inspections".
 - (c) Clause 810.4 "Recording and Reporting Requirements"
 - (d) AS 1742
 - (e) AS 1906.1
 - (f) Part 249 "Installation of Signs".

2. QUALITY REQUIREMENTS

- .1 The Contractor shall prepare and implement a Quality Plan that includes detailed procedures for documentation and/or instructions as follows:
 - (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.
- .2 If not provided beforehand, this documentation shall be submitted at least 28 days prior to the commencement of the Maintenance Period.

3. RESPONSE TIMES**Signs**

- .1 Replacement of all missing or damaged regulatory and warning signs (FR) within the urban area shall be undertaken in accordance with Clause 810.3.2 "Loop Inspections" or 2 hours where notified by the Superintendent.
- .2 Replacement of all missing or damaged regulatory and warning signs (FR) within the rural area shall be undertaken in accordance with Clause 810.3.2 "Loop Inspections" or 4 hours where notified by the Superintendent.
- .3 Response times for all other defects associated with signs listed in the "Schedule of Routine Maintenance Signs" (FR) or other defects shall be 4 weeks from the time identified during an inspection or from the time of notification of the defect.
- .4 Rectification of any specific maintenance defects (FS) shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.

Safety and Wire Rope Barriers

- .5 Rectification of loose or missing components (FB and WR) shall be within 4 weeks of being aware of the defect.
- .6 Response time to make safe, damaged safety barriers (FG) shall be undertaken in conjunction with Clause 810.3.2 "Loop Inspections" of being aware of the damage or 4 hours where notified by the Superintendent.
- .7 Rectification of any specific maintenance defects (FG) shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.
- .8 Response time to make safe including the installation of traffic control devices of damaged wire rope barriers (WG) shall be undertaken in conjunction with Clause 810.3.2 "Loop Inspections" or 4 hours where notified by the Superintendent.
- .9 Rectification of any specific maintenance defects (WG) shall be undertaken within 7 days of being aware of the defect.

Fencing

- .10 Response time to make safe damaged pedestrian fencing or hazard to the road user (RB) shall be in conjunction with Loop Inspections of being aware of the damage or 2 hours where notified by the Superintendent.
- .11 Rectification of freeway fencing shall be undertaken in conjunction with Loop Inspections of being aware of the damage or 2 hours where notified by the Superintendent.
- .12 Rectification of all fencing shall be within 4 weeks of being aware of the damage.
- .13 Rectification of any specific maintenance defects (RB) shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.

Delineators

- .14 Rectification of delineators (FD) defects shall be undertaken within 2 weeks from the time identified during a Loop Inspection.
- .15 Rectification of any specific maintenance defects (FP) shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.

4. RECORDS AND REPORTING

- .1 Refer to Clause 810.4 "Recording and Reporting Requirements" for requirements concerning the recording of loop and routine inspections and roadside furniture works.

5. ADDITIONAL REQUIREMENTS

Signs

- .1 Replacement of signs and supports shall conform to the current standard.
- .2 The Contractor shall measure (audit) the retro reflectivity of 10% (randomly selected by the Superintendent) of signs, listed in the Schedule of Routine Maintenance Signs. This audit shall be undertaken once during the contract, 12 months prior to the conclusion of the Contract, to validate the luminance of the signs previously inspected as part of Part 810 .3 "Inspections".
- .3 The retro reflectivity of the sign face shall be measured in accordance with AS 1906.1, at an observation angle of 0.2° and at an entrance angle of 4°. The values shall be the average of 5 readings equally spaced across the sign.
- .4 On completion of the 10% audit Table 5.1 shall apply:

TABLE 5.1 - SIGN RETRO REFLECTIVITY TESTING	
Summary of Test Results	Action
> 90% of signs meet required minimum of 50% luminance	No further action required

< 90% of signs meet required minimum 50% luminance	Contractor to undertake reflectivity test on remaining signs on the network.
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.5 All signs not meeting the minimum requirement of 50% luminance shall be replaced by the Contractor prior to the completion of the contract.

.6 The reflectivity of new signs shall be 100% of the values listed in AS 1906.1.

Wire Rope Barrier

.7 Repair of sagging cables, damaged or deformed wire rope safety barrier systems and re-tensioning of wire rope shall be undertaken in accordance with Part R43 Wire Rope Safety Barrier Systems

Safety Barrier

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

6. HOLD POINTS

.1 There are no Hold Points referenced in this Part.

7. ATTACHMENT M64A MAINTENANCE ACTIVITIES SAFETY BARRIER (FB / FG)

Application

- .1 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.

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Missing or loose components.</p> <p>Specific Maintenance: 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"> • Missing or loose components • Damaged Safety Barrier <p>MDR Recording: Defects shall be recorded on the MDR as FB.</p> <p>Specific Maintenance shall be recorded on the MDR as FG.</p>	Not applicable	<p>Safety Barrier: Components align with existing installation, are installed and maintained in accordance with the drawings and specification, damaged components removed and the site left safe.</p> <p>Environmental: No proclaimed plants or environmental weeds within 500 mm of the Safety Barrier.</p>

8. ATTACHMENT M64B MAINTENANCE ACTIVITIES DELINEATORS (FD / FP)

Application

- .1 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.

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance:</p> <p>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>Specific Maintenance:</p> <p>Replacement of pavement bars or raised pavement markers (RPM's</p>	<p>Defects where:</p> <ul style="list-style-type: none"> 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. 50% of the white painted guideposts is degraded. Any guidepost is missing or leaning more than 30% from vertical. <p>MDR Recording:</p> <p>Defects shall be recorded on the MDR as FD.</p> <p>Specific Maintenance shall be recorded on the MDR as FP.</p>	Not applicable	<p>Guideposts shall be:</p> <ul style="list-style-type: none"> Spaced at 150 m on straights and in accordance with AS 1742.2 on curves Shall be vertical. Shall be white. <p>Retro reflective delineators shall be visible from the 'approach sight distance'.</p> <ul style="list-style-type: none"> On straight sections of road, at least 2 consecutive pairs visible. On the outside of any curve, at least 3 consecutive posts visible. <p>Pavement bars shall be:</p> <ul style="list-style-type: none"> Painted yellow In place Visible under low beam. <p>Environmental</p> <p>No proclaimed plants or environmental weeds within 500 mm of delineators.</p>

9. ATTACHMENT M64C MAINTENANCE ACTIVITIES SIGNS (FR / FS)

Application

.1 This standard applies to the inspection, cleaning of all signs and replacement of deteriorated, damaged or missing signs and supports of Signs listed in Appendix 24

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: 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>Specific Maintenance: Replacement of defective signs not listed in Schedule of Routine Maintenance Signs in the Appendices.</p>	<p>Defects where:</p> <p>All Signs: Sign support is leaning more than 5% from vertical.</p> <p>Signs other than Regulatory and Warning Signs: 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>MDR Recording: Defects shall be recorded on the MDR as FR.</p> <p>Specific Maintenance shall be recorded on the MDR as FS.</p>	<p>Defects where:</p> <p>Regulatory and Warning Signs: 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>All Signs: Sign support is leaning more than 10% from vertical.</p>	<p>Appearance All signs supports shall be vertical. The upper edge of rectangular /square sign shall be horizontal. Signs shall be clean.</p> <p>Location Signs shall be offset from the edge line, kerb or edge of seal in accordance with Part 249 "Installation of Signs".</p> <p>Legibility Signs shall be clearly legible from the stopping sight distance as specified in the AS 1742.2 Table 2.3 (day and night).</p> <p>Environmental All vegetation shall be 500 mm clear of sign and support.</p>

10. ATTACHMENT M64D MAINTENANCE ACTIVITIES FENCES (RF / RB)**Application**

.1 This standard applies to the inspection and minor maintenance of median fences, pedestrian fences, boundary fences and protective fencing at road side rest areas.

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Repair of loose components, cut wire mesh open access gates and breaches to freeway boundary fences.</p> <p>Specific Maintenance: Replacement of damaged, missing or deteriorated, fencing components and footings.</p>	<p>Defect where: Repair of damaged, missing and loose components.</p> <p>MDR Recording: Defects shall be recorded on the MDR as RF.</p> <p>Specific Maintenance shall be recorded on the MDR as RB.</p>	<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 freeway reserve.</p>	<p>Functionality Fences provide the function for which they were installed.</p> <p>Appearance Repair materials are similar in colour and appearance to the original materials.</p> <p>Environmental: No vegetation within 500 mm of fencing.</p>

11. ATTACHMENT M64E MAINTENANCE ACTIVITIES WIRE ROPE BARRIER (WR / WG)

Application

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

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Missing or loose components.</p> <p>Specific Maintenance: Damaged or deformed wire rope barrier system, and sagging cables and repair of corroded safety barrier components.</p>	<p>Defects:</p> <ul style="list-style-type: none"> • Missing or loose components • Damaged Wire Rope Barrier <p>MDR Recording: Defects shall be recorded on the MDR as WR.</p> <p>Specific Maintenance shall be recorded on the MDR as WG.</p>	Not applicable	<p>Wire Rope Barrier: Components align with existing installation, are installed and maintained in accordance with the drawings and specification, damaged components removed and the site left safe.</p> <p>Environmental: No proclaimed plants or environmental weeds within 500 mm of the Wire Rope Barrier.</p>