ROADS AND MARITIME SERVICES (RMS)

QA SPECIFICATION R307

MAINTENANCE OF ROAD LIGHTING

REVISION REGISTER

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Transport Roads & Maritime Services

NSW GOVERNMENT

QA SPECIFICATION R307

MAINTENANCE OF ROAD LIGHTING

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VERSION FOR:
DATE:

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CLAUSE PAGE

FOREWORD

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REVISIONS TO PREVIOUS VERSION

This document is a first release of Specification RMS R307 as given in the Revision Register.

All revisions to the previous version (other than minor editorial and project specific changes) are indicated by a vertical line in the margin as shown here, except when it is a new edition and the text has been extensively rewritten.

PROJECT SPECIFIC CHANGES

Any project specific changes have been indicated in the following manner:

(a) Text which is additional to the base document and which is included in the Specification is shown in bold italics e.g. ***Additional Text***.

(b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out e.g. ~~Deleted Text~~.

RMS QA SPECIFICATION R307

MAINTENANCE OF ROAD LIGHTING

1 GENERAL

1.1 SCOPE

This document sets out the special requirements for the Maintenance of Road Lighting on roads, bridges, within rest areas, inside tunnels and underpasses (the "Services"). The Specification is formed only when this document is read together with Specification RMS R300 ITS Maintenance Services – General Requirements. The details herein include the Services relevant to Road Lighting, so that they remain in good condition, operate as designed and meet the specified performance requirements. The Road Lighting Equipment to be maintained under the Services includes but is not limited to

(a) Light sources;

(b) Controller or Control gear;

(c) Luminaires;

(d) Photocell;

(e) Power supply system;

(f) Power backup systems (UPS etc);

(g) Cabling, pits and conduits;

(h) Support structures; and

(i) Tunnel walls.

1.2 DEFINITIONS AND ABBREVIATIONS

The following definitions and abbreviations, in combination with those listed in RMS R300, are applicable to this Specification.

1.2.1 Definitions

Enclosure A housing providing an appropriate degree of environmental protection against contact with live parts (complying with AS 60529).

Light source The active element that produces and emits visible light when excited by an electrical current i.e. high-pressure sodium vapour, high-pressure metal halide, fluorescent, solid state LED etc.

Luminaire An apparatus housing a light source and the mechanism for optically controlling of light produced.

Road lighting Road lighting is the application of illumination systems along roadways, bridges, within rest areas, inside tunnels and underpasses for improving road safety by increasing visibility of roadside hazards, enhancing sighting performance of drivers and reducing the effects of glare from other light sources in the visual environment, such as vehicle headlamps etc.

Supply point The junction of the electricity distributor's low voltage network conductors with the consumer's mains, also known as Connection Point.

Support Structure Structural components that support the luminaire and light source, control cabinet and other fixtures i.e. poles, brackets, clamps, straps and parts thereof.

Site/work site Road lighting site.

1.2.2 Abbreviations

FMS Fault Management System (Fault reporting and workflow)

HRC Fuse High Rupturing Capacity fuse

LED Light Emitting Diode

OEM Original Equipment Manufacturer

O&M Operations and Maintenance

RCD Residual Current Device

1.3 RELEVANT DOCUMENTS AND ORDER OF PRECEDENCE

This document must be read together with RMS R300 – ITS Maintenance Services – General Requirements. Other relevant RMS Maintenance Specifications, RMS Equipment specifications, O&M manuals and Australian Standards are listed in Annexure R307/A.

In the event of any conflicting requirements between documents, the order of precedence must be:

(i) Statutory and legislated requirements;

(ii) This Specification - RMS R307 together with RMS R300;

(iii) Other RMS ITS Maintenance specifications;

(iv) RMS ITS Equipment specifications;

(v) O&M manuals; and then

(vi) Australian Standards.

In the absence of specific requirements within this specification, other RMS Maintenance Specifications, RMS Equipment specifications or O&M manuals, Australian Standards must apply.

2 MAINTENANCE SERVICES

You must undertake maintenance services of the Road Lighting Equipment in your Zone in accordance with the approved Asset Maintenance Plan and Forward Works Program.

2.1 ASSET STRUCTURAL INSPECTION

Asset Inspection Services must include the following inspections for the support structure:

(a) Visually inspect complete support structure during planned maintenance (externally and internally) to confirm if it is free from rusting and deterioration that could compromise structural integrity and function. Repair or replace as necessary.

(b) Once every three (3) years, carry out a structural inspection (externally and internally) by sampling within a Road lighting group of assets and report results that are certified by a Structural Engineer. Inspection and condition rating results must be reported for different Road Lighting types as follows:

(i) For Roads, Bridges and Rest areas the light pole structural inspection and condition rating is recorded in the sample form Annexure R307/E1.

(ii) For Tunnels and Underpasses the luminaire support structure inspection and condition rating is recorded in the sample form Annexure R307/E2.

2.2 PLANNED MAINTENANCE

Planned maintenance are routinely scheduled activities that ensures normal function of an asset by undertaking functional inspections, assessing condition, carry out simple recondition and rectification of defects.

Functional check inspections and Routine Maintenance activity are part of Planned Maintenance Services that are to be scheduled to meet the following requirements:

(a) For road, bridge, rest area, tunnel and underpass lighting: Routine Maintenance Service is done at least once every twelve (12) months. Details of Routine maintenance activities are to be recorded on the sample Routine Maintenance Service Report checklist - Annexure R307/B.

(b) For road, bridge, rest area, tunnel and underpass lighting: Support Structure inspection and condition reporting is part of Routine maintenance. See Clause 2.1(b).

(c) Drive-by functional check inspections of all Road Lighting assets are to be done every six (6) months. The purpose of the drive-by functional check inspection is to detect defective luminaires or controllers. Refer to the sample checklist in Annexure R307/C.

(i) Functional check inspections on roads, bridges and rest areas are to be done at night time when all luminaires are expected to be on at full brightness.

(ii) Drive-by functional check inspections in tunnels and underpasses are to be done during day time when all luminaires are expected to be on and at full brightness.

(iii) Where condition data system is provided by electronic means, the luminaire availability could be checked remotely and recorded. Drive-by inspection is not required where such remote sensing and data facility is available.

(d) For tunnel and underpass lighting: Cleaning of luminaires and tunnel walls is to be done at least once every 12 months. The purpose of tunnel wall cleaning is to retain reflectivity of light from luminaires.

(e) Bulk replacement of light sources on roads, bridges, rest areas, tunnels & underpass is to be done to pre-empt degradation below the acceptable light levels (see Section 4.1: Design Life, L70 requirement). Such bulk replacements of light sources are to be done during the next routine maintenance schedule.

(f) Test UPS and Emergency lighting in tunnels and underpasses.

2.3 REACTIVE MAINTENANCE

Reactive maintenance is required to be undertaken when the asset becomes unavailable due to a faulty or defective component, incident or accident.

Such unavailability could be informed when following activities occur:

(i) Planned drive-by functional check inspection report;

(ii) Routine maintenance service report;

(iii) Support Structure inspection and condition report;

(iv) Informed by members of the public, RMS staff, Service provider staff, Council staff, Fire/Police etc; and

(v) Where provided, fault report from a Lighting Control System.

Typical causes of Road Lighting faults include, but are not limited to:

(a) Light source failure;

(b) Power supply/back-up power supply (UPS) failure;

(c) Control switch gear & sensor failure;

(d) Tunnel or Underpass lighting controller failure;

(e) Communication system (for control system) failure;

(f) Cable and wiring faults;

(g) Deterioration of luminaires (e.g. reflectors, visor);

(h) Earth continuity related faults;

(i) Moisture, dust or vermin ingress;

(j) Support structure deterioration;

(k) Accidental damage;

(l) Storm damage incident; and

(m) Vandalism incident.

All repair works must be in accordance with documents listed in Clause 1.3.

You must make arrangements to continually monitor performance of road lighting assets under your care and plan timely maintenance. When fault information is provided, a timely site attendance and repair service must be initiated for Road Lighting faults.

Upon notification of unserviceability, you must assess whether the faulty condition at site poses any safety hazards to motorists or the public and if reactive maintenance should be undertaken to make the site safe or the response can be relegated until the next routine maintenance schedule.

If reactive maintenance is necessary, you must review the nature and urgency of the problem and prioritise your response.

You must dispatch appropriately skilled resource(s)/technician(s) to attend the site as soon as possible, but in any case within the specified response time.

You must carry out repairs to have the asset available within reasonable repair times. You are required to maintain a repair log of each asset with at least the following details:

- Date/time of fault logged;
- Date/time of repair attendance at site;
- Date/time of repair completion at site;
- Nature of fault and details of repair/replacement details; and
- Particulars of staff attending maintenance.

You are to report the Road Light Repair log for the month to RMS.

You do not need to attend site in the event of power outages upstream of the Supply Point. However, you must first ascertain by contacting the electricity distributor if the cause of the outage is upstream of the Supply Point.

You do not need to attend site in the event of an external communication failure, where a communication system is provided to the controller/luminaires. You must first ascertain by contacting the communications service provider that the fault is external.

2.3.1 Response Time and Repair Time

Fault information can be from planned drive-by functional check inspections or from the time of a fault call (whichever is earlier).

The response and repair time starts from the time fault information is logged into the Road Lighting fault repair recording system. Response and Repair time is to be entered when the fault is removed.

(a) Urgent Response

When Road Light assets are not available due to faulty or unsafe condition and the following level of unavailability occurs, an urgent response and repair time will be as follows:

Road, Bridge and Rest Area Lights

(i) When three (3) or more consecutive lights are not operating, an urgent response and repair time of three (3) days is required.

(ii) When an incident occurs and the Incident Support Response is informed, an urgent response of lesser than two (2) hrs is required to make the road/bridge site safe.

Tunnel and Underpass Lights

(i) When six (6) or more consecutive lights in the direction of travel are not operating; an urgent response and repair time will be the next tunnel or underpass maintenance shutdown.

(ii) When an incident occurs and the Incident Support Response is informed, an urgent response of lesser than two (2) hrs is required to make the tunnel/underpass site safe.

(b) Normal Response

Faulty or unsafe equipment that falls outside the urgent response conditions requires a normal response and repair time of not more than thirty (30) working days, e.g. faulty luminaire body and covers deteriorated or overheated power system components and deteriorating structural members that do not pose an immediate safety hazard.

You must inform RMS as soon as possible of any delays which may result in the specified repair times not being achieved and an estimate of exemption of time required to complete the repairs.

2.4 INCIDENT SUPPORT

You must provide Incident Support when required to do so by the TMC or by RMS.

The response time to attend the site where the incident has occurred will be urgent i.e. within 2 hrs. You must assess whether the condition of the site poses any safety hazards to the public and make the site safe as a matter of priority.

After the site is made safe, the response and repair time for subsequent attendance for bringing the site to a serviceable/available condition will be as per Clause 2.3.1 (a) and (b).

You must record the Incident Support details in Annexure R307/D. You must assist RMS with insurance claims and recovery action. Incident Support reports must be submitted as part of your monthly report to RMS.

3 PARTS AND EQUIPMENT

3.1 SUPPLY AND HOLDING STOCK

You must supply all parts and equipment for the purpose of maintaining the Road Lighting. At all times, you must hold adequate stock levels of parts and equipment in storage for Reactive and Planned Maintenance required under your Maintenance Plan.

3.2 DISPOSAL OF DAMAGED, DEFECTIVE, OBSOLETE OR REDUNDANT PARTS AND EQUIPMENT

Due to maintenance or incidents, parts and equipment which are damaged, defective, obsolete or redundant are required to be removed from the Work Site and disposed. Such removal is to be done after formal information and agreement with RMS.

Such parts and equipment are to be distinctly and permanently marked prior to disposal by indicating their condition.

Disposal of parts and equipment is to be done as follows:

(a) Repair or refurbish the parts or equipment and hold them as spares in store for future use. For purposes of quality assurance, repaired or refurbished parts are to be treated the same as Replacement parts and equipment (Clause 3.1). Their repair history is to be maintained and made available to RMS when requested.

(b) Carry out disposal of parts and equipment that are beyond-economical-repair (BER) by recycling. Items being disposed must be physically disfigured prior to recycling at a certified facility. Certificate of disposal must be provided.

(c) All mercury containing lamps much as mercury vapour, high pressure sodium, metal halide and all types of fluorescent lighting must be recycled via a scheme meeting Fluoro-Cycle requirements. Older luminaires that may use components containing asbestos or polychlorinated biphenyl (PCB) must be handled and disposed according to the required disposal method provisions under law for such hazardous substances.

4 PERFORMANCE REQUIREMENTS (ASSET SPECIFIC)

You must meet the included Key Result Areas (KRA) and Key Performance Indicators (KPI) for performance of your Services. Performance requirements which are specific to Road Lighting Equipment are detailed below.

4.1 SERVICE LIFE

Your Asset Inspection and Planned Maintenance Services must support a service life for each make of Road Lighting equipment and OEM specified service life should be used.

The following service life is taken as a reference only:

Light source: For different light source types, number of years as specified in AS/NZS 1158.1.1 (or OEM when not specified), when degradation of light source output is expected to go below L70.

Luminaire Casing: Twenty (20) years for metal construction. Fifteen (15) years for polymer construction.

Control gear: Twenty (20) years or as advised by OEM and verified by RMS.

Pole and foundation: Thirty (30) years.

4.2 AVAILABILITY (OPERATIONAL)

RMS R300 defines Availability for ITS assets. Performance calculation method is provided in the contract. The performance target for Road Lighting must be at least **95.0%.**

Availability as defined in RMS R300 will be measured monthly by you across all Road Lights assets in your Zone.

Failure to meet the Availability performance targets will impact on your Asset Performance KPI score.

5 REPORTING AND RECORD KEEPING

5.1 REPORTING

You must provide a monthly report to RMS on work accomplishment against the FWP and asset performance statistics in an agreed format by the first week of each month.

You may use data from the service report forms in the Annexures or develop and agree to equivalent electronic reporting systems as part of your Asset Maintenance systems.

You must report on a monthly basis the status of fault attendance and repairs (Road Light Repair log) from your Asset Maintenance system records.

5.2 RECORD KEEPING

You must keep and maintain accurate records of all replacements, design alterations, software upgrades, calibrations (if applicable) and repairs made to any Road Lighting Equipment.

All Reactive and Planned Maintenance service attendances must be reasonably recorded in the RMS R307 Annexure forms or maintained in an electronic Asset Maintenance System. Details of each attendance/event must at least include information as required in Clause 2.3.

You must maintain all necessary records to support the monthly evaluation of actual performance against the specified performance targets.

You must retain records, including all details for accidents/damages/repairs for a period of at least five (5) years.

ANNEXURE R307/A – REFERENCED DOCUMENTS

A1 O&M MANUALS

Refer to respective Operation and Maintenance (O&M) Manuals based on make and model of Equipment of each Road Light.

A2 AUSTRALIAN STANDARDS

AS/NZS 1158	Lighting for roads and public spaces
AS/NZS 1158.1.1	Part 1.1: Vehicular traffic (Category V) lighting – Performance and design requirements
AS/NZS 1158.1.2	Part 1.2: Vehicular traffic (Category V) lighting – Guide to design, installation, operation and maintenance
AS/NZS 1158.2	Part 2: Computer procedures for the calculation of light technical parameters for Category V and Category P lighting
AS/NZS 1158.6	Part 6: Lighting for Roads and Public Spaces. Part 6: Luminaires – Performance
AS/NZS 3000	Wiring rules
AS 60529	Degrees of protection provided by enclosures (IP Code)
AS/NZS 60598.2.3	Luminaires – Particular requirements – Luminaires for road and street lighting (IEC 60598-2-3, Ed. 3.1 (2011) MOD).

A3 RMS SPECIFICATIONS

RMS R300	ITS Maintenance Services General Requirements

ANNEXURE R307/B - ROUTINE MAINTENANCE SERVICE REPORT

LIGHT POLE ID or LUMINAIRES ID (Tunnel, Underpass, Bridges): ……..

LOCATION: …… REPORT DATE: ……..

GPS LATITUDE: …… GPS LONGITUDE: ……

1. Mark condition of each item with a ✓ in the "PASSED/FAILED/REPAIRED" columns.
2. If any item requires further attention, mark that item with a ✓ in the "for further action (FFA)" column.
3. Enter date in "dd/mm/yy" format and time in 24 hour format.

ITEM	PASSED	FAILED	REPAIRED	CONDITION & MAINTENANCE NOTES	FFA
Site and Pole #s: _____					
1. Staff inducted, SWMS completed, attended tool box meeting onsite.					
2. If required, obtain road occupancy licence (ROL) from TMC.				ROL Number: _____	
3. Contact TMC for clearance to set up Traffic Control.					
Check Equipment condition and carry out necessary maintenance to make asset reliable and available. Rectify or replace defective items reported during night-time (Roads, Bridges and Rest Areas) or day-time (Tunnels and Underpasses) drive by inspection (R307/C – Functional Check Service Report).					
Check and record the luminaire installation date.				Luminaire Installation Date: _____	
4. Check integrity of luminaire housing, condition including visor, reflectors and seals. Clean luminaires by method specified by OEM. Repair as necessary.					
5. Check light source operation. If light source is not illuminated or if pole is labelled "defective" as a result of R307/B – Functional Check Service Report; do the following: a) Check HRC fuse and replace if faulty. b) Check light source and replace if defective. c) Check light source power gear and short cables and replace if defective. d) Do bulk replacement of light source if scheduled. If none of the above,: e) Do troubleshooting and repair f) Inspect light source for signs of fatigue or damage and repair/replace as needed					
6. Visually inspect support structure (externally & internally) to confirm if it is free from rusting and deterioration that could compromise structural integrity and function. If deterioration is observed due to rusting, deformation or damage, carry out repairs to arrest further deterioration or report on sample form Annexure R307/E1 or E2 (as applicable) for carrying out reactive maintenance.					
7. Check luminaire for integrity and condition of housing including visor, reflectors, seals, access doors etc. Replace if damaged.					
8. Check mains power cable, three pin Socket and					

ITEM	PASSED	FAILED	REPAIRED	CONDITION & MAINTENANCE NOTES	FFA
Plugs for condition and integrity. Repair or replace as necessary.					
9. Inspect Controller and check for damage, signs of electrical/thermal fatigue and dust build up on all control switching gear (e.g. Manual switch, Photoelectric switch, Ripple Relay Switch and Time switch). Check operation of tunnel or underpass.					
10. Check switchboard cabinet and surge protector. Clean housing, remove dust, vermin and other debris, tidy-up wiring. Turn all switches OFF & ON to stop dust build-up. Ensure presence of circuit diagram.					
11. Check RCD (if installed) for tripping current (in mA). Replace if faulty.				Tester calibration certificate # and Date: _____ RCD tripping current: _____ mA	
12. Check surge protector.					
13. Check circuit breakers and reset them.					
14. Check Multiple Earthed Neutral (MEN) and earthing. Locate MEN connection inside the light pole.					
15. Visually/physically check wiring/terminations/earthing items, tighten if required. Check and secure Earth connection. Measure earth continuity using insulation tester every 2 years.				Reading between Earth stake and light pole: _____ Reading between Earth stake and Mains Earth: _____ Date: _____	
16. For Tunnels & underpass lighting; Test un-interrupted power supply (UPS) and emergency lighting where installed.					
17. Check control switching gear housing for structural integrity, rust, or damage. Check housing for weather damage to electronics or dust ingress. Clean the housing, remove dust, vermin and other debris, tidy-up wiring. Repair or replace seals as necessary.					
18. Check for graffiti on light pole. Remove, graffiti if found.					
19. Check all support structures, poles, posts, brackets and straps for structural integrity, rust, deterioration or damage. Inspection to be guided and recorded on R307/E - Road Light Pole Structural Inspection & Testing Sheet Repair or replace as necessary. Report condition for subsequent repairs/replacements.				R307/E Report Date: _____	
20. Check damaged or missing covers, doors or hatches Inspect for vermin damage inside the light fixture, pole access covers, doors or hatches and repair as required.					
21. Check condition, replace and lubricate door locks, hinges and seals as required.					

ITEM	PASSED	FAILED	REPAIRED	CONDITION & MAINTENANCE NOTES	FFA
22. Check light pole/Asset identification labels and their condition, arrange for replacement if damaged or missing.					
23. Check control switch gear housing identification labels and their condition; arrange for replacement if damaged or missing.					
24. Check power pits for water and damage. Clean as necessary.					
25. Trim all trees that interfere with the light source function or light sensor.					
26. Mow grass and remove any weeds around the light pole base and control switch gear housing.					
27. Check that log sheet and WEA drawings are complete, up to date and placed in the power cabinet.					

TECHNICIAN: …… COMPANY: ……

SIGNATURE: …… DATE SIGNED: ……

DATE SENT TO RMS: ……

ANNEXURE R307/C – FUNCTIONAL CHECK SERVICE REPORT

LIGHT POLE ID or LUMINAIRES ID (Tunnel, Underpass, Bridges):

START: …… END: ……..

LOCATION: …… REPORT DATE: ……..

GPS LATITUDE: …….. GPS LONGITUDE: ……

1. Mark condition of each item with a ✓ in the "PASSED/FAILED/REPAIRED" columns.
2. If any item requires further attention, mark that item with a ✓ in the "for further action (FFA)" column.
3. Enter date in "dd/mm/yy" format and time in 24 hour format.

ITEM	PASSED	FAILED	REPAIRED	COMMENTS	FFA
NOTES: DRIVE-BY FUNCTIONAL CHECK INSPECTION ON ROADS, REST AREAS AND BRIDGES IS TO BE PERFORMED DURING NIGHT TIME. DRIVE-BY FUNCTIONAL CHECK INSPECTION IN TUNNELS AND UNDERPASSES IS TO BE PERFORMED DURING DAY TIME.					
<u>Roads, Bridges and Rest Areas (Night-Time)</u> 1. Check if road or bridge light source is available and illuminating the road with normal light output. (a) When three (3) or more consecutive lights are not operating, an urgent response & repair time is to be reported. (b) When lesser than three (3) lights are not operating a normal response and repair time is to be reported. 2. If light source/s are not illuminated or are abnormal (dim, flickering or discoloured), check the following first in the Controller cabinet and rectify: (a) Light bank switches (b) HRC fuses (c) Controller (if provided) If still not illuminated; Append pole number and affix on pole a defect label noting defect and rectification to be done. Enter pole #, nature of defect/s and recommended rectification in FMS. Response and repair time will be as required by the criterion in the above check item-1. <u>Tunnels and Underpasses (Day-Time)</u> 3. Check if tunnel or underpass light source is available and illuminating the road with normal light output. (a) When six (6) or more consecutive lights in the direction of travel are not operating; an urgent response and repair time is to be reported. (b) If lesser than six (6) consecutive lights sources in the direction of travel are not operating; a normal response and repair time is to be reported.				Defective Pole Number/s: _____	

ITEM	PASSED	FAILED	REPAIRED	COMMENTS	FFA
4. If light source/s are not illuminated or are abnormal (dim, flickering or discoloured), check the following and rectify: (a) Light bank switches (b) HRC fuses (c) Contactors (d) Controller (If reboot needed, do safely during off-peak hrs or during tunnel shutdown) If still not illuminated; Append luminaire number, nature of defect/s and recommended rectification in FMS. Response and repair time will be as required by the criterion in above check item-3.				Defective Luminaire Number/s:	

TECHNICIAN: …… COMPANY: ……

SIGNATURE: …… DATE SIGNED: ……

DATE SENT TO RMS: ……

ANNEXURE R307/D – INCIDENT SUPPORT REPORT

LIGHT POLE ID (Road and Bridge) or LUMINAIRES ID (Tunnel and Underpass): ……

LOCATION: …… REPORT DATE: ……..

GPS LATITUDE…… GPS LONGITUDE……

Incident Details	
When reported	
Who reported	
Was Incident or fault a dangerous situation? (Yes/No)	
Police attendance? (Yes/No) Police Report #:	
Details of any vehicles involved:	
Attending supervisor and team at site. (Date and time)	
Immediate Safety measures taken. (Date and time)	
Power Supply Point / Road Light pole / Luminaire ID:	
Initial Repair undertaken (Date and time)	
Details of long term repair and responsibility for repair action	
Description of replaced equipment and cost of equipment and materials	
Number of hours claimed for complete repair	
Notes and Comments	

TECHNICIAN: …… COMPANY: ……

SIGNATURE: …… DATE SIGNED: ……

DATE SENT TO RMS: ……

ANNEXURE R307/E1 – ROAD, BRIDGE AND REST AREA LIGHT POLE STRUCTURAL INSPECTION AND CONDITION RATING

Street Light Pole Structural Inspection & Testing Sheet (Internal & external Inspection)

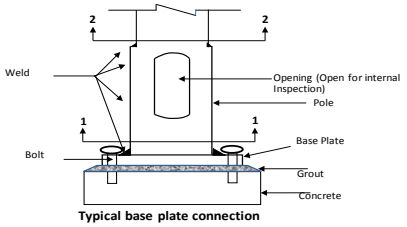
Transport Roads & Maritime Services

Inspected Street light Asset ID:		Total number of light poles in the group:	
RMS Region:		Location:	
Road No:		Lat:	
LGA:		Long:	
Date of Inspection/Testing:		Weather condition/Temperature:	

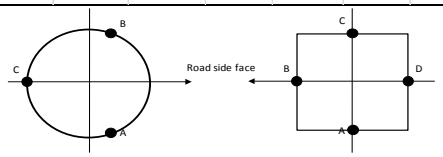
Sr No	Inspection Personnel Name, Organisation etc.	Signature
1		
2		
3		
4		

Brief sketch of the Light Pole locations and any specific observations in the vicinity, terrain and the environment:

Pole Section Shape:		Circular/Square/Rectangular/Octagonal/Other (specify)		
Qty of Pole Arms:	1 or 2	Is this pole on a slope?:	Yes/No	
Pole base elevated?	Yes	Foundation type & Approx. height of Mounting arrangement :	Existing coating type:	
	No	Foundation type & Mounting arrangement:	Existing coating film thickness:	



Typical base plate connection



Pole X-Section & Inspection Points at sections 1-1 and 2-2

Section	Pole wall thickness (WAE dwg.) (mm)	Estimated min. theoritical thickness of Pole wall (mm)	Pole wall thickness site measurements (mm)					Pole outer dia./side near base plate (WAE dwg.) (mm)	Pole outer dia./side near base plate (Site measurement) (mm)		
			A	B	C	D	Note shape & size changes		read 1	read 2	Average
1 - 1											
2 - 2											

Condition Ratings:

Pole element	Very Poor (4)	Poor (3)	Fair (2)	Good (1)	Remarks
Pole at base level					
Pole near opening					
Base Plate, Welds and Bolts					
Weld at interface if section changes					
Pedestal Concrete/Grout					

Condition Notes:

Recommendation for any immediate actions:

ANNEXURE R307/E2 – TUNNEL AND UNDERPASS LIGHTING SUPPORT STRUCTURE INSPECTION AND CONDITION RATING

Tunnel & Underpass Lighting Support Structure Inspection and Condition Rating Sheet

Transport Roads & Maritime Services

RMS Region:		Location:	
Road No:		Lat:	
LGA:		Long:	
Date of Inspection/Testing:			

SN	Inspection Personnel Name, Organisation etc.	Signature
1		
2		
3		
4		

Inspected Luminaire ID/s:	

Brief sketch of the Luminaire location/s in Tunnel/Underpass

Support Structure Mounting Details:	Roof / Wall	
Surface Treatment Details:	Gal / Paint	

Support Structure Sketch (Ennumerate structure members):

Support Structure Inspection & Condition Data

Structural Section	Condition of Coating film thickness	Condition of Base Metal	Condition Rating				Remarks
			Very Poor (4)	Poor (3)	Fair (2)	Good (1)	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
						Overall Condition Rating:	

Condition Notes:

Recommendation for any immediate actions: