

Accepted products and suppliers: Traffic engineering, traffic management and road safety

Raised Retroreflective Pavement Markers (RRPM) Technical Requirements and Checklist

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Feedback

Please send your feedback regarding this document to: tmr.techdocs@tmr.qld.gov.au

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1 Enquiries

If you have any questions regarding this document, suggestions for improvement or would like to submit a product for acceptance for use in Queensland, please contact

Transport and Main Roads (DTMR) - Traffic Engineering Practice

Email: Trafficengineering.support@tmr.qld.gov.au

2 Introduction

This document is relevant to Raised Retro-reflective Pavement Markers (RRPMs), defined by AS 1906.3-2017, as 'A device which produces an effective point source of light at normal highway viewing distances by reflecting incident light in directions close to the direction from which it came'.

This document specifies conditions in relation to:

- Requirements for submitting new REGP products for acceptance as compliant to standards (or resubmitting those previously accepted and lapsed).
- Requirements for extending currently accepted REGP products prior to the three-year acceptance period concluding; and
- Submission requirements, standards and required inclusions.

3 Governing manuals and associated specifications and guidelines

- AS / NZS 1906.3-2017 *Retroreflective materials and devices for road traffic control purposes- Raised*
- MRS45 *Road Surface Delineation* – Measurement
- MRTS45 *Road Surface Delineation* – Technical Specifications
- Raised Retroreflective Pavement Markers (RRPMs) Acceptance Checklist

4 Acceptance of new products as suitable for use in Queensland

For a delineator product to be accepted as compliant for use in Queensland, the manufacture / distributor needs to complete the checklist provided in **Attachment 1**.

The completed checklist should be accompanied by documents to support the requirements of the checklist, the documents are to be submitted to the nominated contact in Section 1.

Tests to demonstrate compliance with the requirements of AS 1906.3 (2017) must be conducted by a NATA accredited laboratory. Additional documents and information as listed below should also be provided with the completed checklist to support the application process:

1. Proof of Type (Class and Type (AS 1906.3-2017) is required in Queensland – See checklist)
2. Details in relation to dimension and shape.
 - a. Width (at right angles to traffic direction)
 - b. Length (parallel to traffic direction), and
 - c. Height (above pavement level when installed).
3. Reflective Properties (A5 Report as per Appendix A AS 1906.3-2017)

4. Colour (C7 Report as per Appendix C AS 1906.3-2017)
5. Test results in relation to the following: and
 - Water Resistance (E5 Report as per Appendix E AS 1906.3-2017)
 - Heat (F5 Report as per Appendix F AS 1906.3-2017)
 - UV Exposure (G6 Report as per Appendix G AS 1906.3-2017)
 - Impact Resistance (H6 Report as per Appendix H AS 1906.3-2017)
 - Compressive Strength (I5 Report as per Appendix I AS 1906.3-2017)

A sample must also be provided to allow assessment of marking, standard and packaging to the nominated contact in Section 1.

5 Conditions of Acceptance

All products are accepted on the condition that the manufacture, design and installation are in accordance with the manufacturer's instructions.

A product's acceptance will remain valid for three-years from the date nominated on the letter of acceptance. If during this three year period the product is redesigned in any way (that is, changes are made to the product that may adversely affect its performance, durability or maintenance requirements), there is a change to any governing specifications, the manufacturing process changes, or the location of manufacturing changes the acceptance will cease and a reapplication for acceptance will be required.

Within two months of any three-year acceptance period expiring, the manufacturer / distributor is to notify the contact officer, nominated in Section 1, of intention to extend for a further three years and nominate either of the following:

- there has been no redesign of the product – further acceptance period granted, and
- the product has been redesigned – further acceptance period granted based on submission of relevant test results (either full suite or those relevant to the nominated changes).

Products may only be submitted for renewal twice, with the maximum acceptance period for any product being nine years, upon the lapsing of this nine-year period, a reapplication for acceptance must be sought in line with Section 4. Additionally, if the acceptance period expires, the product will need to be reassessed as per Section 4.

Attachment 1 – Raised Retroreflective Pavement Markers – Acceptance Checklist

SECTION 1: APPLICANT INFORMATION

Applicant Name: _____ Date: _____

Applicant Company: _____

Product name: _____

Product Class
(AS / NZS1906.3:2017
Clause 2.2):

Class A ► **Not** accepted for use in Queensland.

Class B ► Accepted for use in Queensland.

Class C ► Accepted for use in Queensland.

RRPM Type
(AS / NZS1906.3:2017
Clause 2.3):

Type 1¹ ► Accepted for use in Queensland.

Type 2² ► Accepted for use in Queensland.

Type 3³ ► Accepted for use in Queensland.

Product distributor: _____

Product manufacturer: _____

Location of manufacturing: _____

Date of letter of acceptance: _____

Applicant contact details:

Name: _____

Corporate address: _____

Corporate email: _____

Phone number: _____

Note: Please ensure that all relevant fields are filled in with all supporting information and that **SECTION 3 APPLICANT DECLARATION** is completed.

Completed form to be submitted to trafficengineering.support@tmr.qld.gov.au
Product sample required for each product/product colour. Sample(s) to be sent to:

**Attention: Traffic Engineering Practice
Level 6, 313 Adelaide Street
Brisbane City, Qld, 4001**

¹ One-way retroreflective marker, one colour.

² Two-way retroreflective marker, one colour.

³ Two-way retroreflective marker, two colours.

SECTION 2: RRPM CHECKLIST

Applicant to complete shaded boxes only

2.1 PROOF OF TYPE

MUTCD Requirement	Product Colour (select option(s))	Pass (Y / N)
Type 1 – one colour, one direction: - white, red, green or yellow	<input type="checkbox"/> White <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Yellow	
Type 2 – one colour two directions: - white or yellow	<input type="checkbox"/> White <input type="checkbox"/> Yellow	

2.2 DIMENSION AND SHAPE

Dimension	Australian Standard Requirement	Product (mm)	Pass (Y / N)
Width	90 – 130 mm		
Length	130 mm maximum		
Height	25 mm maximum		

2.3 REFLECTIVE PROPERTIES

A5 Report Submitted	Y / N	Pass (Y / N)

Test and results in accordance with Appendix A / B AS 1906.3-2017.

Australian Standard Requirement	Y / N	Pass (Y / N)
Are the minimum values for the corresponding markers colour met when compared to Table 3.3 of AS 1906.3:2017?		

2.4 COLOUR

C7 Report Submitted	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Are retroreflective elements within designated colour space specified in Table 3.6 of AS 1906.3:2017?		

Test and results in accordance with Appendix C AS 1906.3-2017

2.5 ADDITIONAL TESTING

2.5.1 WATER RESISTANCE

E5 Report Submitted	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Have markers suffered a decrease in retroreflective properties of more than 15 % compared to the relevant values in Clause 3.3.1?		
Are any of the markers showing signs of water ingress?		

Test and results in accordance with Appendix E AS 1906.3:2017

2.5.2 HEAT TEST

F5 Report Submitted	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Are markers still able to meet the photometric requirements specified for the product class specified in Clause 3.3.1 of AS 1906.3:2017?		
Are markers still within designated colour space specified in Table 3.6 of AS 1906.3:2017?		
Have any of the following occurred: <ul style="list-style-type: none"> • Loss of Gloss • Distortion • Softening • Any other physical deterioration 		

Test and results in accordance with Appendix F AS 1906.3:2017.

2.5.3 UV EXPOSURE

G6 Report Submitted	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Have markers suffered a decrease in retroreflective properties of more than 15% compared to the relevant values in Clause 3.3.1?		

Test and results in accordance with Appendix G AS 1906.3-2017

2.5.4 IMPACT RESISTANCE

H6 Report Submitted	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Are fractures from point of impact are less than 10 mm?		
Is delamination of rear face less than 20 mm in radius?		
Has the retroreflective element fractured?		

Test and results in accordance with Appendix H AS 1906.3-2017

2.5.5 COMPRESSIVE STRENGTH

I5 Report Submitted	Y / N	Pass (Y / N)

Deformation at Failure (mm)	Allowable Minimum Compressive Strength (kN)	Product Compressive Strength (kN)	Pass (Y / N)
< 1	7		
≥ 1 and < 3	6		
≥ 3*	5		

*If failure has not occurred at 5 mm deformation, the load at 5 mm will be taken as the compressive strength.

Test and results in accordance with Appendix I AS 1906.3-2017.

2.6 MARKING AND PACKAGING

Sample of Packaging Received	Y / N	Pass (Y / N)

Australian Standard Requirement	Y / N	Pass (Y / N)
Manufacturers Name or Trademark		
Product Designation (size, type, colour)		
Production Batch Number		
Date of Manufacture		

SECTION 3: APPLICANT DECLARATION

I, as a representative of,
(name of applicant) (name of company)

acknowledge and verify that all information provided above is true and agree to the following:

- That I will inform DTMR should any of the information provided above change;
- If the information provided above is found to be incorrect, whether knowingly or unknowingly, DTMR may at their own volition remove the product from the accepted products register; and
- DTMR may at any time request additional information regarding any aspect of the product, sourcing, and manufacturing process.

.....
(Signature)

...../...../.....
(Date)

For DTMR Completion Only:

Reviewer Name: Date:

- Accepted for use:
- Yes, product is accepted for use in Queensland
 - No, product is not accepted for use in Queensland.

Reviewer Signature:

