

# Technical Direction

for Road Safety Practitioners

POLICY - GUIDELINES - ADVICE



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**RS02**

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Supercedes: Nil

## Non-reflective raised pavement markers for lane lines on freeways and dual carriageways

### Policy

Non-reflective raised pavement markers are no longer to be installed as longitudinal lane lines on new or existing roads.

### Purpose

The purpose of this policy is:

- to promulgate new RTA policy that non-reflective raised pavement markers are not installed for longitudinal lane lines on new roads,
- to provide directions for the removal and replacement of non-reflective raised pavement markers on existing roads, and
- to ensure consistent application of lane linemarking on all State Roads in New South Wales.

### Scope

This policy applies to existing roads with non-reflective raised pavement markers installed for lane lines, and new multi-lane road projects. This policy does not apply to the leading white Retroreflective Raised Pavement Marker (RRPM) for lane lines.

- For:
- Director Road Safety, Vehicle & Licensing Management
  - Director Road Network Infrastructure
  - Director Client Services
  - Director Traffic and Transport
  - Director Operations
  - Road Safety, Traffic and Asset Management Personnel

## Background

Under the current RTA QA Specification R141 Pavement Marking, non-reflective Raised Pavement Markers (RPMs) are used as longitudinal lane lines on freeways and dual carriageways (specified as 'L2' in Figure 2 of RTA Specification R141 Pavement Marking). These RPMs are commonly referred to as 'ceramic buttons' as they are manufactured from a glazed ceramic material and are circular in shape (100mm diameter). They are specified as type NW – 'Non-reflective white' in the RTA Pavement Marking specification.

Ceramic buttons on lane lines produce an audio tactile effect when vehicles traverse them. Similar effects can be achieved by profile linemarking where raised ribs produce noise and vibration when vehicles traverse the marking.

On roads where ceramic buttons are currently used for lane delineation, there is potential hazard from:

- Dislodged ceramic buttons striking motorists
- Loss of grip whilst traversing lanes due to low skid resistance (particularly for motorcycles)
- Exposure risk for road workers during installation and maintenance
- Erratic provision of information to motorists when partial losses occur
- Potential for creation of potholes following dislodgement
- Risk to motorists due to traffic control during installation

The installation cost of ceramic buttons is higher than other alternative pavement marking materials such as profile or non-profile thermoplastic or water borne paint as they require manual installation. Ceramic buttons for lane lines have a relatively higher whole of life cost as vehicles traversing lanes frequently dislodge them, and hence a short operating life.

As ceramic buttons require manual installation, there is an increase in the exposure to personal injury risk during installation and maintenance on roads. There also exists the potential hazard of dislodged buttons thrown by vehicle tyres at high speed.

## Intended outcomes

The intended outcomes of this policy are to:

- Improve road safety through reduced risk of crashes and injuries
- Improve lane delineation on roads
- Achieve consistent lane linemarking application on all State Roads in New South Wales
- Enable cost savings from reduced whole of life cost in the installation and maintenance of lane lines on freeways and dual carriageways
- Reduce injury risk from manual installation and maintenance of non-reflective raised pavement markers

## Policy implementation

For new construction or reconstruction of freeway, dual carriageway or multi-lane road projects:

- Non-reflective raised pavement markers should not be installed.
- Lane lines are to be installed in accordance with the 'L1' lane line as specified in Figure 2 of RTA Specification R141 Pavement Markings.
- Profile or non-profile thermoplastic or water borne paint linemarking can be used for lane lines on freeway, dual carriageway, or multi-lane road projects. Profile linemarking offers audio tactile effect, enhanced visibility in wet weather, and long operating life. A higher priority should be given to profile linemarking for lane lines on freeways or dual carriageways, unless noise may be an issue to nearby residential areas.

For existing roads with non-reflective raised pavement markers installed for lane lines:

- For the maintenance of lane lines on a substantial length of road, non-reflective raised pavement markers should be replaced by profile or non profile thermoplastic or water borne paint linemarking in accordance with the L1 lane line as specified in Figure 2 of RTA Specification R141 Pavement Markings, taking into account the time schedule of pavement re-sheet. The relevant Asset Maintenance Manager should be consulted prior to the installation of lane linemarking. A higher priority should be given to profile linemarking for replacement unless noise may be an issue to nearby residential areas.

- In situations where pavement is planned for re-sheet within a short timeframe:
  - It may be more economical to install temporary lane lines (suggested width of 100mm) over the ceramic buttons with water borne paint linemarking.
  - Maintenance for partial dislodgement of non-reflective raised pavement markers may continue in the interim if it is more cost effective to maintain small number of non-reflective RPMs than installing profile or non profile or water borne paint linemarking over sections of short road lengths. The relevant Asset Maintenance Manager should be consulted.

## Additional information

Effective date: This policy is to take effect immediately

Related documents: RTA Specification R141 Pavement Markings  
 RTA Specification R142 Raised Pavement Markers  
 Delineation Manual  
 Model drawings MD.R60.A01.A Pavement Linemarking and Dimensions  
 MD.R62.A01.A Raised Pavement Markers

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