Manual

Traffic and Road Use Management
Volume 3 – Signing and Pavement Marking

Part 2: Pavement Marking Usage
Chapter 1: General principles

July 2019
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## 1 General principles

Refer to MUTCD Part 2 Sections 5.1 and 5.2.

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<tr>
<th>5.1 Scope</th>
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<tbody>
<tr>
<td>This Section specifies the lines, patterns, symbols, letters and numerals and markers used in or on road pavements and kerbs or adjacent to the road, for the purpose of guiding traffic.</td>
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<tr>
<td>NOTE: Raised islands or medians are not defined as pavement markings, although their surfaces may be marked.</td>
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<td>Requirements for longitudinal pavement markings on sealed pavements of various cross sections are included also in Clause 4.2.2.</td>
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<tr>
<th>5.2 General principles</th>
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<tr>
<td>5.2.1 Purpose</td>
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<tr>
<td>A system of clear and effective pavement markings is essential for the proper guidance and control of vehicles and pedestrians.</td>
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<td>Pavement markings may simply guide traffic or give advance warning, or they may impose restrictions which are supported by traffic regulations. They may act as a supplement to other road devices, but they are often the only effective means of conveying certain regulations and warnings to drivers.</td>
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<tr>
<td>It is essential to check their use against the traffic laws and regulations before they are installed or removed, to avoid possible conflict or confusion.</td>
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<th>5.2.2 Removal of markings</th>
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<td>Markings required on account of particular road conditions or to impose restrictions shall be removed or obliterated if those conditions cease to exist or the restrictions are withdrawn. Steps should be taken to ensure that marking removal does not leave a change in surface texture that could be mistaken for a marking or that covering material does not produce a slippery surface.</td>
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<td>Substantial changes to pavement markings may require pavement resurfacing.</td>
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<th>5.2.3 Limitations</th>
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<td>Pavement markings have the following limitations:</td>
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<td>a) They may not be clearly visible if the road is wet or dusty, for example, near an edge or a median.</td>
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<tr>
<td>b) They are subject to traffic wear and usually require frequent maintenance.</td>
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<tr>
<td>c) They can be obscured by traffic.</td>
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<tr>
<td>d) Their effect on skid resistance requires careful choice of materials and precludes the use of large marked surface areas. Markings within a traffic lane may be a hazard to motorcycles and should, where practicable, be avoided on curves.</td>
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<tr>
<td>In spite of these limitations they have the advantage under favourable conditions of conveying information to drivers without diverting their attention from the road.</td>
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</tbody>
</table>
1.1 Types of markings

The following types of markings are described in this section:

a) Longitudinal lines
   - Dividing lines .................................................. Section 2.2.1
   - Barrier lines .................................................... Section 2.2.2
   - Lane lines ....................................................... Section 2.2.3
   - Edge lines ...................................................... Section 2.2.4
   - Continuity lines ............................................... Section 2.2.5
   - Turn lines ...................................................... Section 2.2.6
   - Outline markings .............................................. Section 2.2.7
   - Longitudinal lines at intersections ....................... Section 2.2.8
   - Wide centreline ............................................... Section 2.2.9

b) Transverse lines
   - ‘STOP’ and ‘GIVE WAY’ lines ............................... Section 2.3.1
   - Crosswalk lines ............................................... Section 2.3.1
   - Other transverse lines ....................................... Section 2.3.1

c) Other markings
   - Diagonal and chevron markings ............................ Section 2.4.1
   - Messages on pavements ..................................... Section 2.4.2
   - Marking of parking and loading areas .................. Section 2.4.3
   - Kerb markings ................................................ Section 2.4.4
   - Multi-lane roundabouts ...................................... Section 2.4.5

d) Raised pavement markers
   - General .......................................................... Section 2.5.1
   - Permanent retroreflective pavement markers ........ Section 2.5.2
   - Non-retroreflective pavement markers ................ Section 2.5.4
   - Temporary raised pavement markers ..................... Section 2.5.4
   - Pavement bars ................................................ Section 2.5.5
   - Audio-tactile line markings ............................... Section 2.5.6
1.2 Materials

Refer to MUTCD Part 2 Sections 5.2.5, 5.2.6, 5.2.7 and 5.2.8.

5.2.5 Pavement marking materials and reflectorisation

Pavement marking materials of various kinds are specified in AS4049 (Series).

All longitudinal lines, chevrons and diagonal markings having application at night shall be reflectorised. Reflectorisation should also be considered for other markings where an adequate level of skid resistance can be maintained. Glass beads for use in the reflectorisation of pavement markings are specified in AS/NZS 2009.

5.2.6 Colours

Except as specified following, the colour of pavement markings shall be white.

Yellow markings shall be restricted to the following uses:

a) Parking spaces whose use is restricted to certain user classes (see Part 11).

b) Edge lining to indicate no stopping.

c) Tram lane lines.

d) Longitudinal lines in snow areas except for the edge line where stopping is to be permitted.

Black may be used in the gaps of a broken pavement line to heighten contrast where a light coloured pavement does not allow adequate line definition to be obtained. This does not establish black as a standard colour.

Where yellow is used, the colour shall be Golden Yellow, Colour No. Y14 in AS2700. The colour coding for RRPMs differs from that for pavement markings (see Clause 5.6.2).

5.2.7 Size of markings

The size, spacing and pattern of longitudinal lines are shown in Figure 5.1.

5.2.8 Profile line marking

Longitudinal lines may be installed as profile markings in the form of regularly spaced ribs added to a uniform thickness line. Profile markings provide an audible warning when vehicles run over the lines and aid wet night visibility.

Road pavements may be marked by one or more of the following materials:

a) paint – with or without glass beads embedded or premixed (see AS4049.3) – limited to line marking only.

b) in situ plastic materials – with or without reflective properties.

c) pre-cut sheeting – with or without reflective properties.

d) raised pavement markers – studs which may be retroreflective (RRPM) or non-retroreflective (NRPM) set into the roadway or attached to the road surface with adhesives, lane dividers or pavement bars.

e) line marking tape – without reflective properties, usually black in colour to cover existing line markings on final pavement surfaces for temporary roadwork operations.
Refer to Part 4 of this document for information on pavement marking materials.

1.2.1 Performance criteria

Longitudinal line marking, excluding audio-tactile line marking, when applied, shall have a minimum retroreflectivity of 350 mcd/lux/m² measured up to 20 days of wear.

Transverse markings shall incorporate an anti-skid treatment, with a skid resistance greater than 45 BPN when measured under wet conditions.

The application of anti-skid shall comply with the manufacturer's requirements.

Refer to Transport and Main Roads Technical Specification MRTS45 for additional details on material performance criteria.

1.3 Colours

White paint shall have a colour equivalent to or whiter than Off White, Colour Y35 in AS2700.

Where yellow is used, the colour shall be Y14, Golden Yellow as detailed in AS2700.

Coloured pavement surfacings should be applied in accordance with best practice to ensure that these treatments are durable and have adequate skid resistance. Until such time as a Technical Specification has been developed for these coloured pavement surfacings, Transport and Main Roads Supplementary Specification Colour Surfacings for Cycleways (MRSS10B) should be used.

For further advice or to obtain a copy of the Supplementary Specification MRSS10B, please contact the Principal Engineer (Asphalt and Surfacing) from Transport and Main Roads' Pavement Research and Innovation Unit on telephone (07) 3066 7725.