LINE AND ROAD MARKING

1. PURPOSE

This technical note documents recent developments and changes in VicRoads' practices in line and road marking. It also informs users of linemarking services of a number of options available.

2. CURRENT PRACTICE

Types: The following types of line and road markings are used:

- Solvent borne or water borne paint placed 300 microns minimum dry film thickness (DFT) with 400 micron nominal size drop-on glass beads (AS 2009-1991) with 250 g/m^2 retained in the painted marking;
- Water borne paint placed 200 microns minimum dry film thickness with 400 micron nominal size drop-on glass beads (AS 2009-1991) with 250 g/m^2 retained in the painted marking;
- Water borne paint placed 300 microns minimum dry film thickness with 800 micron nominal size drop-on glass beads (Type E20) with 250 g/m^2 retained in the painted marking;
- Water borne paint placed 400 microns minimum dry film thickness with 1000 micron nominal size drop-on glass beads (Type 3 or Visibeads) with 250 g/m^2 retained in the painted marking (seldom used);
- Cold applied plastic and thermoplastic placed 2 to 3 mm thick with glass beads premixed into the product (as part of the manufacturing process) and 400 micron nominal size drop-on glass beads (AS 2009-1991) with 250 g/m^2 retained on the marking surface;
- Thermoplastic audio tactile patterned edge lines, to VicRoads standard, normally with each thermoplastic bar 50 mm long, 150 mm wide and 8 mm high placed with a specified gap of 150 or 200 mm (between each bar) with glass beads premixed into the product and 400 micron nominal size drop-on glass beads (AS 2009-1991) with 250 g/m^2 retained on the marking surface;
- Raised Reflective Pavement Markers (RRPMs) are acrylic or glass faced reflectors coloured white, red, yellow and green. Non reflective white raised pavement markers (RPMs) are also used.

Recent changes: For the majority of the road network, VicRoads commenced using water borne line and road marking paint in 1996. The reasons for the change from solvent borne to water borne paint are:

- better retention of bigger glass beads which provide better night visibility and safety in wet conditions;
- improved durability;
- water borne paint is non-flammable and safer to use;
- more environmentally friendly.

3. GENERAL TRENDS

In the inner metropolitan area, major rural cities and on heavily trafficked routes much of the line and road marking is carried out using 'longlife' products. These products are:

- thermoplastic which is generally used on longitudinal lines, within intersections and for general road markings;
- cold applied plastic which is generally used at intersections and for general road markings.

4. LIFE AND USES

Tables 1 and 2 provide an indication of the relative life, cost and typical uses of various products used by VicRoads.

5. LINE MARKING PRACTICES FOR RETREATMENTS

The following practices are recommended for pavements which have been resurfaced:

Spray seal surfaces: On a new surface line and road mark with a solvent based paint or water borne paint (both at 300

micron DFT) and remark within two months using water borne paint (300 micron DFT) or a longlife product. It is necessary to remark spray seal surfaces within two months because the durability on unpainted stones is poor.

Asphalt surfaces: In the Metropolitan area and other busy locations, line and road markings should be replaced with longlife products (thermoplastic or cold applied plastic) for significantly improved effectiveness and improved safety.

RRPMs and RPMs: All RRPM's and RPM's affected by resurfacing works should be removed before resurfacing and replaced after resurfacing treatments.

6. CONTACTS

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Table 1 : Generic Life of Line and Road Markings

Material	Expected Life	Initial Relative Cost
Solvent paint (300 micron DFT)	6 to 12 months	1.0
Water borne paint (200 micron DFT)	12 to 24 months	0.8 to 0.9
Water borne paint (300 micron DFT)	18 to 24 months	1.2 to 1.4
Water borne paint (400 micron DFT)	20 to 24 months	1.4 to 1.6
Thermoplastic	5 to 10 years	3.5 to 4.5
Cold applied plastic	5 to 10 years	4.5 to 5.5
Audio tactile edge lines	8 to 10 years	6 to 8
RRPMs and RPMs	2 to 5 years	NA

Table 2 : Generic Use of Line and Road Marking Types

Material	Location	Uses (See below for Legend)			
		Edge lines	Centre lines	Intersection markings (stop lines, approach lines)	Chevrons painted islands
Solvent paint[1] (300 micron DFT)	High traffic				
	Low traffic				
Water borne paint (200 micron DFT)	High traffic			NA	NA
	Low traffic			NA	NA
Water borne paint (300 micron DFT)	High traffic				
	Low traffic				
Water borne paint (400 micron DFT)	High traffic			NA	NA
	Low traffic	NA	NA	NA	NA
Thermoplastic	High traffic				
	Low traffic				
Cold applied plastic	High traffic	NA	NA		
	Low traffic	NA	NA		
Thermoplastic Audio Tactile edge lines	High traffic		NA	NA	NA
	Low traffic	NA	NA	NA	NA
RRPMs and RPMs	High traffic				NA

[1]Solvent based paint is no longer used extensively by VicRoads except as an option for the first treatment on a sprayed seal surface.

Legend of Uses

Can be used

Likely to be economical

Probably most economical

For improved safety reasons

NA Not applicable