5.8 Road Markings

Background

Road paint or thermoplastic road markings are used on the road surface to convey warnings, to provide information and to indicate required manoeuvres and can make a significant contribution to the safe and efficient operation of the network. As with traffic signs, regulations and standards are normally specified nationally so that there is consistency in intersection layout and marking throughout the country.

To be effective, road markings need to be visible in all weather conditions and should convey the information required by drivers clearly and unambiguously. Road markings should be used in conjunction with road signs (see 5.7).

Problems

Although most developing countries often have national standards for road marking, few appear able to show a well marked, well maintained network. This is partly due to the fact that road marking paint available locally often tends to be very poor quality while imported road marking paint is very expensive.

The poor conditions of roads (potholes, deformations, etc) can also make road marking difficult to apply in any effective manner. Shortage of specialist machinery, skilled/trained technicians and the cost of imported thermoplastics all make its use problematic in many of the less wealthy countries.

Thermoplastic can be a problem in dry countries since the thermoplastic becomes black with rubber deposits left by vehicle tyres, and the rainfall is inadequate to provide any cleaning effect.

The limited budgets available make it difficult for engineers to keep the road markings to an acceptable standard. As a result pedestrian crossings, intersections, etc, often have no road markings to provide guidance to drivers. This significantly increases the risks and dangers to all road users.

Summary

Road markings play a very important role in guiding the driver and providing him with the information necessary to negotiate conflict points on the road network and should be a high priority for those seeking to improve road safety. The driver can be given appropriate information through the use of different types and colours of road marking. Stop and glue-way lines at intersections ......
Possible Solutions/Benefits

Road markings guide and assist the driver to negotiate conflict points and to be positioned at precisely the right location to make his manoeuvre in the safest and quickest way so that the time he is exposed to risk is minimised. National standards should be developed by the central highway authority of each country, ideally by adapting the UN conventions. These should then be widely distributed to all local highway authorities to encourage consistency of approach, layouts, signs and markings.

- Stop and give way lines on roads can position drivers so that they are brought to the safest point from which to make their manoeuvres through the intersection.
- Centreline and edgemarking of rural roads can help to delineate the road ahead so that any horizontal or vertical curvature can be clearly seen by approaching road users.
- Centreline markings can be used to convey information about whether or not it is safe to overtake, while painted marks in the centre of lanes can indicate particular hazards ahead (e.g., painted diamonds are used in S Korea to give advance warning of a pedestrian crossing ahead).
- Frequent repainting can give good results even if the paint quality is not high. If frequent repainting is not feasible, specialist contractors should be employed to apply thermoplastic markings. (These can last as much as 8 times longer than paint but are more expensive.)
- Where unlit roads occur, night-time visibility of road markings and hence any horizontal or vertical alignment can be markedly improved by mixing small glass beads into the paint or thermoplastic before applying it to the road surface. This solution is particularly appropriate for developing countries as many urban and rural roads are unlit in such countries.

Fig 5.29
Various road markings and their functions as used in the UK
(UK Highway Code)

Other relevant sections: 4.2.6, 5.7, 6.8.6
Key external references: 1, 5