

Assessment of different road markings performance under different operating conditions and surfacing types

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Road markings have been identified as key component that influences road safety on the roads. Retroreflectivity ensures that line markings are bright and be easily identified by road drivers even at night conditions. With time, the markings degrade and the reflectivity measurements also decrease. The degradation can happen either because of pavement wear, curvature or existing weather conditions.

The research aim was to monitor the road markings performance under different operating conditions. Performance monitoring was conducted on different surface type, road width, geographical location and temperatures. The research utilized a vehicle-mounted retroreflectometer.

There are various types of road markings on the market from different suppliers. Water based, solvent based and thermoplastic paints were used on the research varying the suppliers, varying the quality and/or thickness of paint applied including the quantity and quality of glass beads. The reflectivity measurements are being conducted every 6 months on the identified sections over a 50cm interval.

Initial results after 6 months indicated that with regards to the three different paint types, traffic, surface types and texture contribute significantly to reflectivity of the line markings over time. Benefits of adding more glass beads can be observed with the reflectivity measurements when compared with normal application. With regards to thermoplastics not much reflectivity is lost during the first 6 months, not much difference is observed in the initial 6 months, when using the high retro thermoplastic compared to normal thermoplastic. Some benefit was observed with reflectivity due to increasing thermoplastic application rate. Comparing the different type of paints under same operating conditions solvent based paint performed better in the first 6 months compared to water based paint.

Comparing the performance based and specified contract type, more benefits were observed with specifying increased glass beads and paint application compared to performance based contract consisting of higher premiums. There is a need to carefully look at the performance based contracts and their benefits. There is a need to understand the cost difference and benefits in increasing slightly both paint and glass bead application compared to premiums paid for performance based contracts.