



A survey into the quality of road safety markings on the UK's road network



The Road Safety Marking Association <http://www.rsma.org.uk> represents 95 per cent of the road marking sector. Since its inception in 1975, it has been actively involved in promoting road safety initiatives and is committed to raising the quality of working practices, specifications and products.

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Foreword

Are white lines on roads really important? Surely they represent a bit of cosmetic overlay to make the road look primed and to give drivers an idea which side to stay on.

Think again: The latest Road Safety Foundation¹ report showed looked at the top 10 most improved roads. Fatal and serious injury crashes on just 10 stretches of treated road fell by nearly two thirds from 541 to 209 (2001-2005 and 2006-2010) – a boost to the economy worth £35m every year.

On NINE of these 10 roads, the improvements included changes to signing and lining.

This year's most improved road is a rural 20km (13 mile) single carriageway section of the A605 in Cambridgeshire. Over the two survey periods, fatal and serious crashes fell by 74% from 34 to 9. Among the measures put in place were visual clues of built up areas – such as village gateways and "dragon's teeth" road markings to warn drivers of hazards ahead.

High-quality white lines have proved to be a simple, low-cost solution to improving the way a road user can "read" the road, preventing road-side run-offs or providing safe right-turn pockets.

Furthermore, horizontal road signs in this form are always in the driver's line of sight, and unlike fixed roadside posts, road markings do not present a threat to the road user if the vehicle leaves the road in a crash.

This year's Lifelines Report is the biggest survey of the performance of markings on UK roads. We assessed lines on 7250km of motorways, dual and single carriageways in England, Scotland and Wales. Our findings show that road markings are vanishing at an alarming rate.

The percentage of motorway markings classified as requiring emergency replacement by the Highways Agency's own standard doubled from eight to 17 per cent in the past two years. How can the Department for Transport and the Highways Agency be ignorant of these failings or be unable to grasp the urgency of the problem?

HA motorways and dual-carriageway A roads have a rigorous standard imposed for replacement. The reality is that 17 per cent of motorway markings warrant emergency treatment, and a further 21 per cent should be replaced within the next six months. The same picture stands for HA-managed dual carriageways.

On average, fewer road markings on single carriageways managed by local authorities fall into the emergency bracket than those managed by the Highways Agency.

¹www.roadsafetyfoundation.org/

In Wales and Scotland, the findings are worse. Forty per cent of markings on dual carriageways in Wales are invisible, 21 per cent should be scheduled for replacement. In Scotland, 61 per cent of single and dual carriageway road markings are virtually invisible or fall into the warning zone. Some of Scotland's strategic routes have 90-100 per cent failed white lines.

Despite the Highways Agency having a standard by which its markings are measured and maintained, there is clear evidence of significant decline. Standards are being inconsistently implemented, and it would appear that there is little or no monitoring. Obliterated markings on motorways have doubled from eight per cent in 2010 to 17 per cent to 2012; while the percentage of markings given the highest rating have dropped from 38 per cent in 2010 to just 29 per cent this year.

The Scottish Government, through Transport Scotland and the Welsh Assembly Government, through Transport Wales, have both signed up to the TD26 maintenance standard so they are as much at fault as the HA in failing to enforce the standard. It is only local government that has no equivalent standard, but we know from experience that where decline is seen in HA-maintained roads, local authorities will follow.

National standards are not being enforced and the quality of road markings is declining at an alarming rate. We strongly suspect that the layering of bureaucracy built into the system of maintaining HA roads is stifling results. Taxpayers are paying, but the funds are simply not going on the roads.

George Lee
National Director
RSMA

Background

This year's survey is the tenth national investigation conducted by the RSMA into the quality of road safety markings. The findings in this report relate to site surveys carried out between July and September 2012. The survey covers a total of 7250km of roads. This is nearly three times the distance covered by the 2010 survey, and the largest the RSMA or any body has carried out.

Road marking measurement

Road markings are measured on their retro-reflectivity. A rating of 150mcd (millicandelas) is the level recommended by the industry, with road markings materials available that ensure markings remain clearly visible even at night in wet conditions. Under Highways Agency standard TD26, if the quality of markings falls below 100mcd, they should be scheduled for replacement, and if the quality rates below 80mcd, they must be replaced immediately. A revision of HA's TD26 is due next year.

The RSMA is concerned that Highways Agency ratings for road markings have never been formally adopted by local authorities, leading to inconsistent maintenance standards on UK roads and the potential for the significant maintenance shortfalls identified in the RSMA report.

The survey

The road safety markings were surveyed using Delta LTL-M monitoring equipment brought across from Denmark specifically for the LifeLines study and loaned to the Association for the duration of the research. The free standing unit was mounted on an RSMA vehicle and operated by trained RSMA staff.

The LTL-M is based on a patent-pending technology that makes use of a DELTA developed flash system, digital camera technology and distance triangulation offering accuracy in line with handheld instruments under all driving conditions including bumpy roads and curves.

The system provides continuous measurement of night visibility at traffic speed in full length and width of road markings; additionally LTL-M measures the daylight contrast, the width of markings and records the presence of retro-reflecting road studs. This feature which is not generally available elsewhere will facilitate the expansion of the RSMA survey to evaluate the condition of this additional road safety feature in a manner and volume never previously measured by any highway authority across the UK.

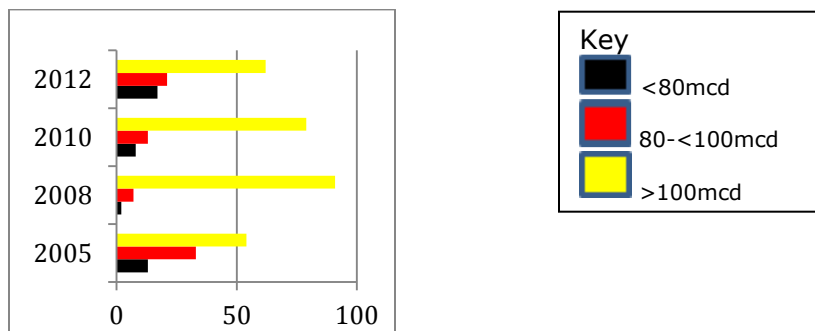
Scope of the Lifelines Report 2012

- All roads surveyed - 7 250km
- England HA motorways, dual and single carriageways - 4474km
- England non HA dual and single carriageways - 1097km
- Scotland motorways, dual and single carriageways - 1030km
- Wales dual and single carriageways - 650km

Survey results

Motorways in England

Managed and maintained by the Highways Agency



Motorway results

- 17% below 80mcd (2010: 8% below 80mcd)
- 21% > 80mcd < 100mcd (2010: 13% > 80mcd < 100mcd)
- 62% above 100mcd (2010: 79% above 100mcd)
- More motorway markings need replacing now than in 2005

Strategic motorway network – England’s best and worst

Bottom Five² (starting with worst)

- 1) M6 Wigan-Standish
- 2) M27 Eastleigh
- 3) M66 Ramsbottom-Bury
- 4) M1 Leicester M69-A46
- 5) M20 M25-Borough Green

Top Five³ (starting with best)

- 1) M5 Tiverton-Tewkesbury
- 2) M3 Eastleigh-Winchester
- 3) M69 Leicester-Coventry
- 4) M1 Leicester West (southbound)
- 5) M53 Chester South

² Highest percentage below 80 mcd

³ Highest percentage above 150 mcd

Comment

Motorways, managed by the Highways Agency, should be maintained at the highest level, with a rigorous standard imposed for replacement.

The percentage of motorway markings classified as needing emergency treatment by the Highways Agency's own standard doubled from eight to 17 per cent in the past two years, and a further 21 per cent should be replaced within the next six months.

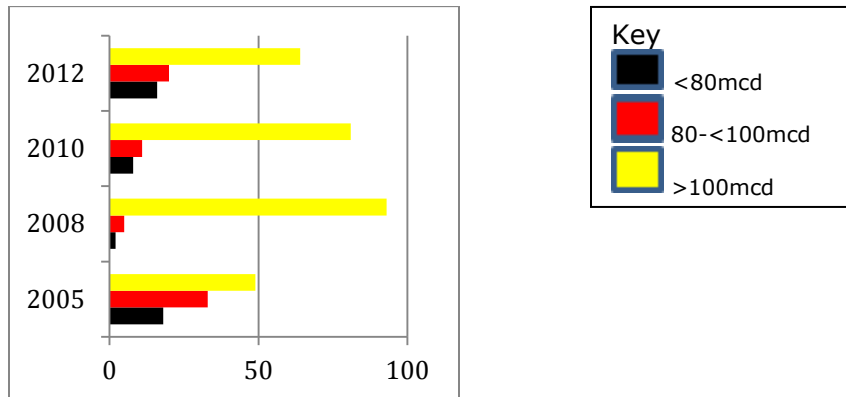
The section of motorway with the poorest quality lines is the M6 Wigan-Standish section, where 66 per cent need emergency replacement and, in total, 96 per cent should be scheduled for replacement based on the Highways Agency's standard.

Following this, the worst stretches of motorway measured were: M27 Eastleigh; M66 Ramsbottom to Bury; M1 from M69 to A46; and M20 from M25 to Borough Green. Here, up to half of all markings were in the danger zone and needed immediate repair.

Not all is doom and gloom. By far, the best motorway markings were found on the M5 Tiverton to Tewkesbury where 80 per cent of markings make the highest rating.

Strategic dual carriageways in England

Managed and maintained by the Highways Agency



HA dual carriageway results

- 16% below 80mcd (2010: 8% <80mcd)
- 20% > 80mcd < 100mcd (2010: 11% > 80mcd < 100mcd)
- 64% above 100mcd (2010: 81% above 100mcd)

Bottom Five (starting with worst)

- 1) A630 M1-Sheffield
- 2) A638 Doncaster-Bawtry
- 3) A59 Birkenhead-Liverpool
- 4) A419 Swindon-Cricklade
- 5) A630 Doncaster

Top Five (starting with best)

- 1) A361 Barnstable-Tiverton
- 2) A6 Buxton-Derby
- 3) A30 Indian Queens-Exeter
- 4) A14 Ipswich south
- 5) A483 Chester-Wrexham

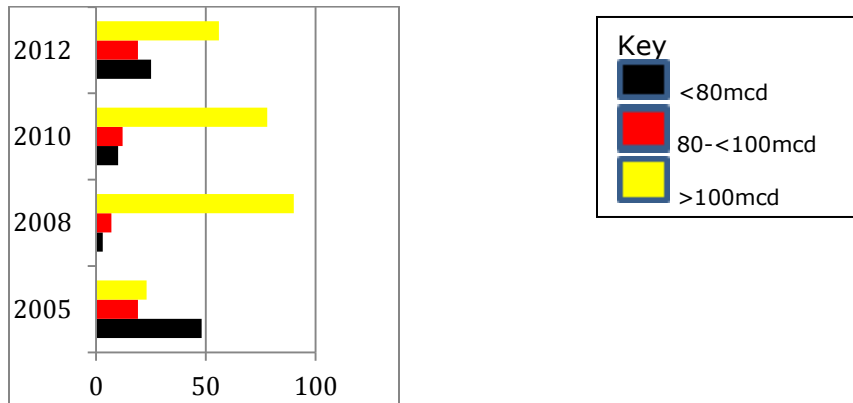
Comment

Findings again mirror the overall decline experienced on the motorway sample, compared with 2010.

Among dual carriageways managed by the HA, the poorest is A630 between M1 and Sheffield with 80 per cent of markings completely worn out and a further 17 per cent to be scheduled for replacement.

Three HA dual carriageways had exemplary white lines with more than 90 per cent in the top bracket: A361 Barnstaple to Tiverton; A6 Buxton to Derby; and A30 Indian Queens to Exeter.

Strategic single carriageways in England Managed and maintained by the Highways Agency



HA single carriageway results

- 25% below 80mcd (2010: 10% below 80mcd)
- 19% > 80mcd < 100mcd (2010: 12% > 80mcd < 100mcd)
- 56% above 100mcd (2010: 78% above 100mcd)

Bottom Five (starting with worst)

- 1) A49 Standish-Chorley
- 2) A52 Nottingham West
- 3) A60 Mansfield-Worksop
- 4) A449 Stourbridge-Wolverhampton
- 5) A449 Worcester-Moreton-in—the-Marsh and A38 Alfreton-Mansfield (joint 5th)

Top Five (starting with best)

- 1) A361 Barnstaple-Tiverton
- 2) A30 Indian Queens-Exeter
- 3) A46 Tewksbury-Evesham and A303 Deptford – Amesbury (joint)
- 4) A1079 Beverley South West and A18 Scunthorpe-Broughton (joint)
- 5) A5127 Lichfield

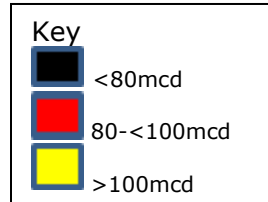
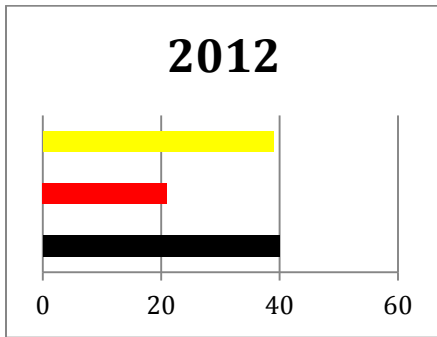
Comment

Nearly half (44 per cent) of the markings on single carriageways managed by the HA fall into the danger or warning zones. The A49, Standish-Chorley, is the poorest performing single-carriageway A road surveyed. The standard of road safety markings on this section is so poor that 85 per cent should have already been replaced and a further 10 per cent fall into the red warning category and should now be scheduled for replacement. The best markings are seen again on the single stretches of the A361 Barnstaple to Tiverton.

Local authority-maintained roads - England

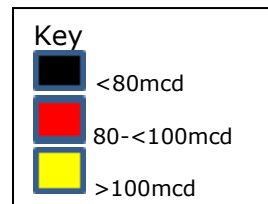
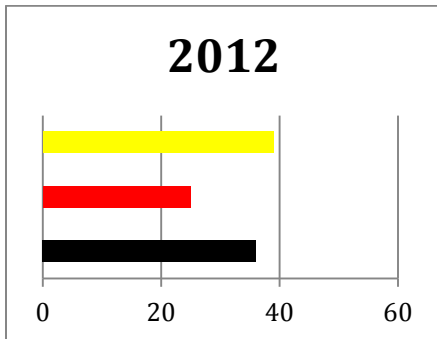
On England's local authority-maintained single carriageways 22 per cent of markings are in a critical condition and a further 20 per cent need replacing. On average, 25 per cent of markings on dual carriageways are in the failed or warning zone.

SCOTLAND



Motorway and dual carriageway results

- 40% below 80mcd
- 21% > 80mcd < 100mcd
- 39% above 100mcd
- No direct comparison with 2010 survey



Single carriageway results

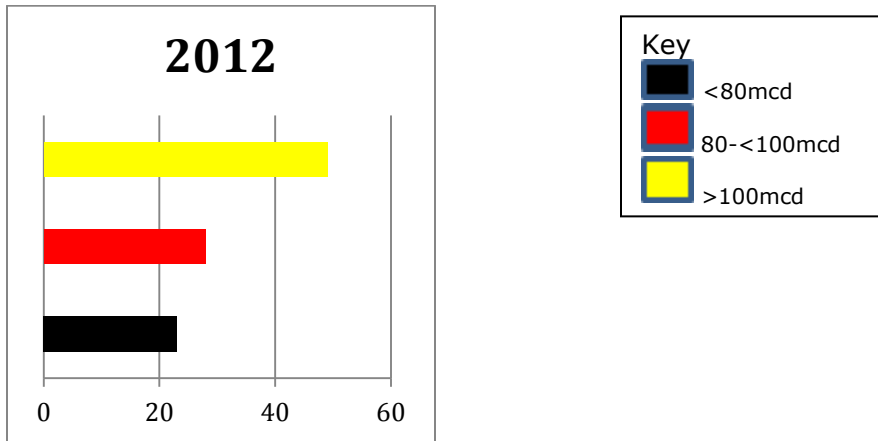
- 36% < 80mcd
- 25% > 80mcd < 100mcd
- 39% above 100mcd
- No direct comparison with 2010 survey

Comment

In Scotland, the findings are a major cause for concern: 61 per cent of single and dual carriageway road markings are invisible or fall into the warning zone. On some strategic dual carriageways, the survey found 90 per cent of markings on the M90 between J1 and J12a northbound have failed and nine per cent are failing.

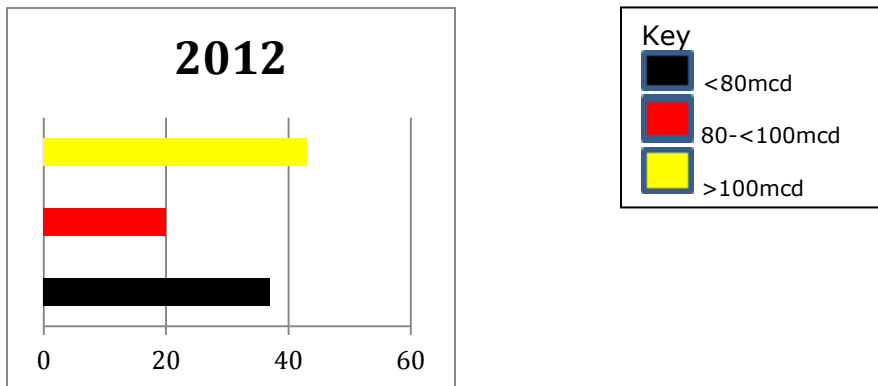
Transport Scotland has signed up to TD26 standards, but there is little evidence of compliance, representing a significant safety issue for drivers in Scotland. Urgent investment is required, along with a clear action plan to deliver continuous and sustained improvement.

WALES



Dual carriageway results

- 23% below 80mcd
- 28% > 80mcd < 100mcd
- 49% above 100mcd
- No direct comparison with 2010 survey.



Single carriageway results

- 37% below 80mcd
- 20% > 80mcd < 100mcd
- 44% above 100mcd
- No direct comparison with 2010 survey.

Comment

Overall, 650km of roads in Wales were surveyed. 40 per cent of markings on dual carriageways in Wales are invisible, and a further 21 per cent should be scheduled for replacement. Ninety-three per cent of markings on the A5156 Wrexham South fall into the danger zone and only three per cent rate as adequate. One stretch of the A466 Chepstow to Monmouth single carriageway has 98 per cent failed markings, whereas nearly half (49 per cent) of markings on the A5 Anglesey are rated excellent.

Written Parliamentary Question from Jim Fitzpatrick, MP for Poplar and Limehouse

25 October 2012

"To ask the Secretary State for Transport, how the Highways Agency monitors contracts requiring the repair or replacement of road markings at times when a section of road is not being renewed?"

The reply from Stephen Hammond MP, Parliamentary Under-Secretary of State for Transport:

"There are no sections of the A1 or A1(M) managed by the Highways Agency that have no road markings. Where defects to road markings require prompt attention because they represent an immediate or imminent hazard, Highways Agency service providers are required to repair them within defined time scales to ensure safety of the road users. Where there is a case for a more comprehensive renewal of road markings, service providers will develop planned maintenance schemes for consideration by the Highways Agency. The value for money of these schemes will be assessed alongside others to ensure the best use of available funds."

Note: the RSMA LifeLines 2012 Report did not include the A1 along several stretches of the road around Lincolnshire and Nottinghamshire this time, but filmed footage, and this, along with photos of the 'no road markings' warning signs in place (seen on front cover), are available on www.rsma.co.uk.