

TOP MARKS 1999

INTRODUCTION

Welcome to Top Marks, The Road Safety Markings Association guide to the Road Marking Industry in the UK.

Top Marks has been designed to help clients, large and small, public or private in identifying the best contractors and materials to their requirements. It is also designed to give details of the changes and improvements that are taking place in the road marking industry – from new material standards to improvements in the qualifications of the operatives across the industry.

Top Marks provides details of Road Safety Markings Association member companies, from contractors and manufacturers to main national suppliers and equipment builders. Road Safety Markings Association members are required to be quality Assured – so customers can feel confident that they will have their job undertaken to a high standard.

We hope that you will find Top Marks useful and would welcome any comments you have for future editions.

JOINING THE ROAD SAFETY MARKINGS ASSOCIATION

The Road Safety Markings Association has represented the road marking industry for more than 20 years. Promoting the use of road markings and working to establish industry and material standards. Strong in defence of its members, the Association also maintains high standards in terms of quality it expects from its members.

The Association is also the only Assessment Centre for the new pavement marking NVQ and members enjoy substantial discounts for NVQ assessment and verification.

Members also receive discounts on RSMA publications and videos.

If you are interested in receiving information about joining the Road Safety Markings Association contact George A. Lee or Joyce Bury on 0161 763 7711.

Making a Mark

New Standards Imminent For ROAD MARKINGS

This year 2000 will see the implementation of the new standards for road marking materials, presenting with it a major challenge to specifiers and contractors – George Lee, National Director of the Road Safety Markings Association and John Lloyd RSMA Technical Committee Chairman outline the changes.

In addition to trying to cope with the technological difficulties associated with the millennium, Highways Engineers have another potential headache to address come the year 2000, with the change over to new European Standards for road marking materials and the end (certainly in new contracts) of the old recipe specifications for road markings.

The new European Standards for road marking materials are performance driven and from 2000 all new contracts for road markings will necessarily be based on performance, bringing with it monitoring and measurement requirements.

The purpose of material standards is of course to provide a level of quality assurance to customers and clients at all levels and the purpose of a European Standard is to open up the European internal market whilst maintaining that quality assurance.

In the road marking field quality assurance is delivered through BS3262, whereby both laboratory tests (under BS3262 Part 1 – Specification for constituent materials and mixtures) and Road Trials (under BS3262 Part 2) provide the yardsticks by which quality is measured. Under the current time scales BS3262, which is already declared obsolescent, is scheduled for withdrawal on 31st December 1999, to be replaced with the new European Standards BSEN 1871, BSEN 1824 and BSEN 1436.

THE KITE MARK

The Kite mark is the sign of quality and this will continue for the foreseeable future albeit to a different standard. The easiest way to highlight the changes that will take place is to compare the current Kite mark Scheme (under BS3262 Pt 1) with the new scheme (under BSEN 1871).

BS 3262 defines the type of raw materials and the permitted proportions for these materials. The properties of the marking material when tested in the laboratory are also specified. These properties are shown in figure 1.

Figure 1: Current Kite mark scheme
BS 3262: part 1 – Specification for constituent materials and mixtures

Property	Requirement	After heat stability
Softening point	65°C min	N/A
Luminance	white – 70 min yellow - 50 min	65 min 45 min
Flow resistance	25% max	N/A
Skid resistance	45 SRT	N/A

In addition to the properties shown in Figure 1. BS 3262 Part 1 also specifies the type of container and container markings; the appendices to the standard giving guidance on information for tenders, sampling procedures and laboratory test methods.

On withdrawal of BS 3262, the replacement Kite mark scheme will be to BSEN 1871 – Road Marking Materials – Physical Properties and Laboratory Tests – which covers paints, thermoplastic and cold plastics. The physical properties are specified both before and after heat stability, as shown in figure 2.

Figure 2: New Kite mark scheme EN 1871: Road marking materials – physical properties

Property (Thermoplastics)	Before heat stability	After heat stability
Trichromatic co-ordinates	v	v
Luminance factor	v	v
Softening point	v	v
Alkali resistance	v	X
Cold impact	v	X
Heat stability		
Indentation	X	v
Troger wear	X	v
UV ageing	X	v
Troger wear after UV ageing	X	v

The differences between the old system and the new are quite marked in that; the new system removes restrictions on constituent materials and mixtures. The EN Standards have looser gradation requirements, which allow for greater experimentation, for instance with beads of a more uniform size. The changes also mean that thermoplastics will no longer have to contain a minimum of 18% binder or 20% glass beads. This will allow for flexibility in approach although it may also allow materials of poorer quality to ‘creep’ into the system.

In terms of the physical properties of materials the new standard covers a wider variety, although not all will necessarily be applied in each country e.g. The Troger test was specifically included for countries with studded tyres. Within the UK we are likely to retain the following parameters within the Kite mark scheme: -

- Luminance factor
- Heat Stability
- Softening point

Along with additional requirements for

- Tri-chromatic colour co-ordinates

The test methods for these changes is to broaden the options available to the specifier and this will require more detailed attention, certainly until the specifier is familiar with the new system.

In terms of packaging, the markings, the markings to appear on each container are detailed in BSEN 1971, whilst the sampling method contained in BS 3262 Part 1 will be replaced by the yet to be published Factory Production Control EN. The BS EN ISO 9002 compliance requirement to obtain a licence to use the Kite mark will remain unchanged.

PERFORMANCE ON THE ROAD – BSEN 1436 AND TRIALING FOR PERFORMANCE BSEN 1824

BSEN 1436 has introduced into a standard for the first time a demanding series of performance requirements for road markings on the road and represents a fundamental change for industry and specifier. As a standard it is also closely linked to the new road trial standard BSEN 1824, the latter providing the methodology whereby products are tested against the categories laid down in BSEN 1436.

The intention of this change is to provide the highway engineer with the opportunity to determine the level of performance that he wants. It is the performance categories and range of classes that will enable priorities to be given to the different aspects of performance and consequently for the class to match the type and conditions of the road.

The categories of performance covered are shown in figure 3.

Figure 3: BSEN 1436 Road Marking materials – road performance users

- Luminance Coefficient under diffuse illumination – Qd
- Coefficient of retro-reflected luminance –
 - RL for dry road markings
 - RL in conditions of wetness
 - RL in conditions of rain
- Luminance factor β for dry road markings
- Corner points of chromaticity regions for white and yellow road markings
- Skid resistance

The fundamental change introduced within BSEN 1436 is that the specifier calling up the standard will no longer be able to call up specific minimum values outside of the classes designated within the standards. For instance when specifying a retro-reflectivity level using the new standard, a class such as R2 (200mcd) will have to be specified and not a specific minimum value such as 150 mcd.

The possible permutations across the road performance parameters are many, however, it is likely that the preferred options will quickly ‘narrow down’.

It is worth remembering at this point, in respect to BSEN 1436, that classes of high performance cannot always be achieved for two or more of the road performance parameters simultaneously. This is particularly the case in respect to retro-reflectivity and skid resistance, where a gain in one of these areas is often achieved at the expense of the other.

Another fundamental part of BSEN 1436 is the concept of a ‘functional life’ for a marking, this is defined as “the period during which the road marking fulfils all the requirements initially specified by the responsible road authority”

In effect it is left to the client to determine, although unrealistic specifications/functional life requirements will necessarily increase contract costs.

As indicated above, products are tested by methods laid out in BSEN 1824 and are categorised against the performance classes contained within BSEN 1436, as shown in Figure 4.

Figure 4: BSEN 1824 Road marking materials: road trials

- Luminance factor -- performance classes
- Retro-reflectivity -- performance classes
- Skid resistance -- performance classes
- Erosion -- rating system
- Colour co-ordinates -- colour box

Because of the use of performance categories, each with a number of classes, there will no longer be straightforward pass or fail criteria for road trials. Performance will instead fall into one class or another. The only exception to this is the category for colour co-ordinated, in which the colour will either lay inside or outside the box.

The new system will also mark the end of the old ‘Class A’ Certificate, with its replacement by a Road Trial Report. The report will show the performance class at the outset and at the end of the trial period, it will also show other details such as application rate for materials and drop on materials, the type of application, type of road surface etc.

At a practical ‘on the road’ level, the new road trial regime differs substantially from the current BS 3262, the changes being summarised in Figure 5. The new system covers a full weather cycle of 12 months as compared to the previous trial time of 2 years, however, other changes introduced should mean that this does not represent any dilution in the standard.

Figure 5: Road trial differences

- Trial duration –BS 3262 – 2 years
- BS EN 1824 – 12 month minimum then determined by number of wheel passages
- Reports replace certificates
- Reports apply to single product
- Some changes in test parameters

The new standard requires measurement of wheel passages rather than just time, consequently it is possible to determine the various classes relating to vehicle volumes, the performance level achieved will of course be shown on the report, thereby providing the specifier with greater flexibility to suit conditions. It is this element of wheel passages and the detailed analysis of their distribution that ensures that the reduction in road trial time should not necessarily mean a reduction in the stringency of the trial.

At the first trials laid to the new standard (in September 1998) yellow products were laid on the UK trial site for the first time – this means that the colour of yellow products over time can now be assessed.

Manufacturers will no longer be able to extend their certificates to cover high performance grades, because of the ‘trade off’ in performance classes highlighted earlier; consequently all products now need to be road tested, providing specifiers with more assurance on quality.

Changes in test parameters should also afford the specifier greater flexibility in obtaining the marking closest to need. Changes such as testing for retro-reflectivity in wet conditions and colour co-ordinates underline this.

Overall the new trial regime and report structure are more comprehensive and should work in favour of the specifier who has a clear idea of his requirements, however, in the interim there is a clear potential for confusion because of the fundamental change the new system will represent to the majority of specifiers.

From the industry perspective we believe that the new system can and will require clear benefits to our clients, however, these benefits will only be optimised where constructive dialogue and partnership are entered into, to overcome the teething problems of any new system and ensure that unrealistic objectives are not set in revised specifications.

The precise withdrawal date in 2000 for BS 3262 and the introduction of the new European Standard is, at the time of writing, awaiting confirmation. Readers wishing to be kept up to date with information regarding the withdrawal date and any further developments are asked to e-mail rsma@dial.pipex.com or call 0161 763 7711.

NVQ

A Major step forward in Quality Contracting

Background

The National Vocational Qualification covering road marking has been some time in development; however, the qualification is now available and along with on site assessment, is set to revolutionise the training structure within the industry.

The RSMA has been working closely with the Construction Industry Training Board over the last few years to develop the NVQ and as of February 1999 is also a CITB/City & Guilds Approved Assessment Centre for the qualification.

The industry believe that the NVQ is the natural development for training and qualifications within the sector and that it marks a progression from the Local Government Management Board administered Certified Operatives scheme, which remains available.

So what's new about NVQ?

The RSMA is committed to the on going development of the NVQ in the road marking sector, as it believes that it represents the best route to providing clients with quality workmanship – through an educated competent workforce with development opportunities they hitherto would not have had.

The NVQ is an instantly recognisable qualification, something that has been lacking throughout the construction industry in general and more specifically within our sector. With this qualification our industry will be able to offer a recognised qualification, no more the proliferation of vague cards and training schemes.

The Level 2 Construction (Pavement Marking) NVQ – to give the formal title of the qualification, is one of a new generation of NVQs subject to On Site Assessment. This requires all candidates for the qualification to be assessed whilst undertaking the task, in addition to collating various evidence to support their qualification. The assessment of the performance of the operative and the validity, currency and sufficiency is in the first instance by a qualified Assessor.

As an accredited Assessment Centre the Association will therefore be able to underwrite the quality and consistency of the qualification, since it has direct control over the work of the RSMA NVQ Assessors and Verifiers. From this the national standard of a RSMA Assessed Qualification will be consistent and not dependent on a patchwork of trainers.

This assured consistency will provide clients with an opportunity to measure in advance the quality of the work they are likely to obtain from the contractor even as early as the tendering stage.

The NVQ is much more than a training scheme or training qualification; it is a measure of the competency of the operative, a clearer measure than current schemes of their ability to undertake the job that they are expected to do.

The qualification is a rigorous test of all aspects of the road marking operation and recognises the skills and abilities of the operative. Furthermore since the assessment takes place on site, the client and the operative can be assured that it clearly measures the practical implementation of skills in a 'live' environment and not merely in a trainer's classroom or company yard. The fact that operatives also have to display consistency, through repeatedly undertaking the task and not merely attending a training event, provides confidence that they are capable of doing a quality job.

Once again the key to the value of the NVQ Qualification is consistency – more than a training scheme – the NVQ will assure client and employer that the operative can consistently undertake work that is to a high standard. The RSMA and the Awarding Bodies (CITB & City & Guilds) rigorously monitor Assessors, working to ensure they employ consistent standards – assessing operatives that need to show consistency to obtain their qualification.

NVQ – What will it mean?

The NVQ will over the next two to three years become the predominant qualification within the road marking industry; furthermore, with the development of NVQ Qualifications across the entire road-building sector, it is likely to become so in many of the industries within the sector.

In road markings, the qualification will be written into the 3rd Edition of Sector Scheme No. 7 – The Quality Assurance Scheme for road markings (due for implementation in 2000) required within the Specification for Highway Works. Within this document the qualification will have equivalence with the LGMB Certified Operatives Training Scheme, with the proviso that a periodic review of health and safety and industry practice is undertaken.

From its inclusion within the Sector Scheme Document it is anticipated that best practice will see the NVQ qualification incorporated, as the accepted proof of a skilled workforce, within many local authority specifications in a very short time. Allied to Best Value initiatives it is anticipated the development and implementation of the qualification will provide the specifier with more opportunity to ensure that the specifying authority is obtaining high quality work from their contractor.

The Association is recommending to Client side organisations that certainly within the next 2 years they should not solely specify the NVQ Qualification as the sole required qualification, due to the lead time required for the NVQ to be obtained by reasonable numbers of operatives.

NVQ – What's next?

Currently the RSMA has Assessors working towards their Assessor qualifications in 30% of member companies; some of these Assessors will also undertake assessments outside their own companies. It is likely that more Assessors will be trained later this year.

The Association anticipates that within two years the vast majority of member companies will have NVQ qualified operatives. With 93% of our contracting members also Quality Assured, this shows the commitment that RSMA members have to providing the client with a quality service.

For contractors interested in training experienced members of staff to become Assessors and/or wanting to put their operatives through the NVQ, generous subsidies are available to RSMA members (in addition to BITB grants). Non-member

companies in scope to CITB will attract grant payments but will not receive RSMA subsidies.

FOR MORE INFORMATION CONTACT GEORGE A. LEE AT THE ROAD SAFETY MARKINGS ASSOCIATION.

Are your lines UP TO THE MARK?

RSMA Ecodyn Survey Highlights Worrying Trend

The recent RSMA publication 'Up to the Mark?' has identified a worrying trend on UK roads, with a decline in the performance levels of many of the markings on some of the most heavily trafficked roads in England & Wales. The publication is based on data from an RSMA commissioned Ecodyn Survey of some 1000kms of UK roads and shows a substantial decline in the retro-reflectivity of UK road markings on all road categories between 1996 and 1998.

RSMA National Director George Lee explains, 'In 1996 the Association commissioned an Ecodyn survey of a specific 'circuit' of motorways, A roads and B roads throughout the UK, to provide baseline sample data on the retro-reflectivity of markings across the country. This circuit was repeated in 1998 with the updated data indicating that there had been a sharp decline in the performance of the markings in all road categories.'

This decline in performance meant that across all roads on the test circuit 49% of all markings failed to meet the minimum criteria for retro-reflectivity performance of 100mcd/m², as laid down in the new European standard, in comparison to 29% two years ago.

This overall figure has been broken down across all road types and analysis has identified major declines in the performance of markings on: -

- Motorways – 51% below 100 mcd/m² compared to 24% in 1996
- Major A roads (dual carriageways) – 54% below 100mcd/m², compared to 24% in 1996

These declines are a matter of major concern for all those involved road safety and indeed coupled with the joint research undertaken by the RSMA and the Association for Road Traffic Safety and Management (ARTSM) published in the 'Cosmetic or Crucial?' report in 1998 indicate an area where public resources are not being put to adequate use. (Cosmetic or Crucial? undertook a cost benefit analysis of signing and lining treatments, proving their value in reducing accidents and saving public funds.)

As a result of the 'Up to the Mark?' report, the RSMA has been calling for urgent Government action in the following areas: -

- Immediate investment to bring markings on UK roads up to standard.
- Creation of a schedule of programmed performance measurement and maintenance.
- Specialised specification criteria for markings on UK roads.
- All responsible authorities (central and local government) should develop and implement a plan to improve safety on UK roads.

Copies of 'Up to the Mark ' are available from the RSMA.