



National Highways Sector Schemes for Quality Management in Highway Works

7

For the application of road marking materials and
road studs to road surfaces

**Published by the Sector Scheme Advisory Committee for
Road Markings (SSACRM)**

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1	5	2009	Update to document control
4	5	2009	Updated Composition of Advisory Committee.
5	5	2009	Updating of implementation guidance and timetable for this revised document
6	5	2009	Revised introduction detailing structure and role of Sector Schemes
8	5	2009	Paragraph 1.1 Interpretation of BSEN ISO 9001. Assertion that SSD shall be referenced in Certification Body issued certification
8	5	2009	Paragraph 2 - Updating of normative references
8	5	2009	Paragraph 3.1 New definition - Road Marking Operative implementing Traffic Management
10	5	2009	Paragraph 3.1 New Definition Road Marking Operative implementing Traffic Management
10	5	2009	Paragraph 3.1 Revised definition – Trainee road marking operative
12	5	2009	Paragraph 4 – New interpretation requiring Quality Plans for all contracts with related actions required.
13	5	2009	Paragraph 5.2 – Revised approach to customer focus and commitment to Sector Scheme
13	5	2009	Paragraph 5.3 – Revised approach to Quality Policy
14	5	2009	Paragraph 5.6 – Revised wording in relation to management reviews of quality management system
14	5	2009	Paragraph 6.2.1 – New interpretation requiring site staff training to fulfil scheme requirements
14	5	2009	Paragraph 6.2.2.1a Competency – Updated and expanded definition to clarify range of NVQ qualification required for operatives, plus timescale for SSD 12D Module T1 qualification
14	5	2009	Paragraph 6.2.2.1b – New competency qualification requirements for supervisors to NVQ Level 3
15	5	2009	Paragraph 6.2.2.2a Awareness & Training – Clarification of new entrant apprenticeship registration and training requirements
15	5	2009	Paragraph 6.2.2.3a Registration – i. Details of CSCS Registration requirements. ii. Range of CSCS Cards available iii. Previous and/or company training schemes/qualification no longer compliant to Sector Scheme
16	5	2009	Paragraph 6.2.2.3b Supervisors– Details CSCS registration requirements and Cards to be issued upon qualification.
16	5	2009	Paragraph 6.2.2.4 Relocation of record keeping requirements (formerly Paragraph 6.2.2.2 (vi. to viii.))
18	5	2009	Paragraph 7.2.3 New requirements to have processes to advise of Sector Scheme status to SSAC and LANTRA
18	5	2009	Paragraph 7.5.1 Control of Product and Service Provision – Expansion of system requirements for control of product and service provision

19	5	2009	Paragraph 7.5.2 Validation of process for production and service provision. Expansion of requirements
19	5	2009	Paragraph 7.5.3 Identification & Traceability. Expansion of requirements
20	5	2009	Paragraph 8.2.2 Internal Audit. Streamlining of requirements
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22	5	2009	Appendix A - Requirements for Quality plans Paragraph 1 – General Requirements Amended details of requirements Paragraph 2 – Contract Specific Statements. Amended requirements
24	5	2009	Appendix B - References updated throughout
27	5	2009	Appendix C1a – Training and Health & Safety Qualifications Revised NVQ Standards and Units specified for operatives, supervisors and managers Appendix C1b – Clarification of Sector Scheme 12d Qualification structure Addition of a general note on Health & Safety
29	5	2009	Appendix C2 - Apprenticeship Scheme revised requirements and schedule
30	5	2009	Appendix C3 - Revised NVQ Standards and Units identified along with revised contact details for registration bodies.
31	5	2009	Appendix C4 - Assessment Record form updated
32	5	2009	Appendix C5 – Apprenticeship Achievement/Record Sheet updated
35	5	2009	Appendix F – Revised guidance on identifying and sourcing a Certification Body to assess Sector Scheme 12d
36	5	2009	Appendix G – The role of the Certification Body and Auditor Qualifications. Substantial revision to entire Appendix
39	5	2009	Appendix G1 – Guidance to Assessors and other auditors' competency requirements for NHSS7 New appendix outlining the specific aspects of the road marking operation and sector training requirements, which the assessor should specifically consider when assessing compliance with the SSD
43	5	2009	Appendix H - Organisation Approval. Fully revised details on Organisation acceptance and Guidelines for new entrants
46	5	2009	Appendix K – The interpretation of certificates issued by certification/inspection bodies. Fully revised
52	5	2009	Appendix L – Updated guidance on performance after trafficking of newly applied road markings

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COMPOSITION OF THE SECTOR SCHEME ADVISORY COMMITTEE, EXCLUSION OF LIABILITY, COPYRIGHT AND SELECTION OF CERTIFICATION BODY

COMPOSITION OF THE SECTOR SCHEME ADVISORY COMMITTEE

CSS

DfT - Highways Agency (HA)

Lloyd's Register Quality Assurance Limited (Lead Certification Body)

Local Government National Training Organisation (LGNTO)

LineTrain

Road Safety Markings Association (RSMA)

Traffic Management Contractors Association (TMCA)

SGS United Kingdom Ltd.

Society of Chief Officers of Transportation in Scotland (SCOTS)

EXCLUSION OF LIABILITY

The Advisory Committee:

- I have and accept no liability whatsoever for any failure of any system or systems assessed under this Sector Scheme Document or for the quality, fitness for purpose, or safety of any product or service, which is the subject of such assessment;**
- II do not provide any representation or warranty as to any aspect of any such system, product or service, and**
- III hereby expressly exclude all and any liability or responsibility (however alleged to arise) for or in connection with the provision of any service or product or any use of any product, all and any such liability or responsibility attaching exclusively to the producer (or user as the case may be) thereof.**

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SELECTION OF CERTIFICATION BODY

It is important to note that due to the specific requirements for assessor competence required by this Sector Scheme a technical expert may be appointed by the Sector Scheme Advisory Committee to assist UKAS in the assessment of Certification Bodies as described in Appendix G.

Prospective companies seeking registration under this scheme should ensure that they engage a certification body specifically accredited to assess against the requirements of this SSD. Specifiers, consultants, engineers etc. that require confirmation of compliance with the contract specification in respect of the supply of products/materials should confirm the current status of the quality assurance certificate issuer and that specific reference is made to this Sector Scheme. (See Appendix F.)

IMPLEMENTATION

ISSUE UKAS 5

- (i) This issue of the SSD is to be implemented immediately from the date of publication on the UKAS website for assessments in accordance with BS EN ISO 9001 latest issue.
- (ii) Assessments against Issue UKAS 4 will continue to be valid until the following assessment carried out by the accredited Certification Body.
- (iii) Implementation relating to training and competency requirements outlined in UKAS4 has now been updated in relation to SSD12 Unit T1

INTRODUCTION

This Sector Scheme Document (SSD) relates to the quality management system requirements for the application/installation, maintenance and removal of road marking materials and road studs to road surfaces. Road marking (materials) shall be deemed to include road studs in the remainder of this document unless otherwise stated.

It sets out to identify a common interpretation of BS EN ISO 9001 (latest issue) for Organizations and Certification Bodies engaged in the sector.

This Sector Scheme is one of the series of NHSSs, which are bespoke integrated management schemes within an ISO 9001 framework that have been developed to interpret BS EN ISO 9001 as it applies to a particular activity/industry within the United Kingdom.

Separate technical advisory committees for each activity within the sector provide advice to UKAS and expert representation is drawn from all sides of industry. Each NHSS technical advisory committee interprets BS EN ISO 9001:2008 in relation to the requirements of their particular activity and comes to a consensus on the minimum levels of workmanship, services, products, testing, and the training and competency of operatives, as appropriate, needed to meet specification requirements as well as auditor qualification and any requirements in respect of Environmental Management Systems (EMS) and other management systems. The details are contained in the individual SSDs.

The individual NHSS technical advisory committees are overseen by the Highways Sector Scheme Liaison Group. This group provides a forum for discussion on the effectiveness of the Sector Schemes and co-ordinates developments so that they can be uniformly taken forward by each of the NHSS technical advisory committees. It is also the venue where dialogue with UKAS and the Certification Bodies on the application of the Sector Schemes takes place.

NHSS's together with BS EN ISO 9001 are designed to:

- Provide an industry benchmark
- Ensure that all processes are planned
- Provide a basis for continuous improvement
- Focus on quality as an objective
- Reduce costs for Client and contractor
- Provide and maintain a properly trained and competent workforce
- Involve all sides of industry in scheme ownership within a partnership framework
- Provide the basis for the technical knowledge and experience that Certification Body auditors will use in the sector concerned
- Promote confidence in quality management systems through provision of a robust transparent system

The Sector Scheme shall apply only where specified by the Client in their Contract for the execution of road marking (permanent or temporary) and/or road studding.

In using this Sector Scheme users shall use best practice in specifying any other relevant NHSSs as appropriate to the nature of the work being undertaken e.g. NHSS 12D.

This SSD also uses these categories to identify an Organization's capability (see Appendix K).

It should also be noted that NHSS's are implemented by Highways Agency, Transport Scotland, Welsh Assembly Government and DRD Northern Ireland, whereby suppliers are required to demonstrate registration to and compliance with the requirements of BS EN ISO 9001 (latest issue) and this SSD as part of their continual improvement within their BS EN ISO 9001

registration. It is anticipated that other highway authorities that use the Specification for Highway Works as the basic document for procuring highway works will also require compliance with BS EN ISO 9001 and this SSD. Other owners of transportation infrastructure may also require their suppliers to comply with this Sector Scheme, e.g. Network Rail.

The SSD is a live document with the SSAC7 meeting at least once a year to develop it as appropriate. Those using the document should always ensure that they have the current version of the document by contacting any of the Certification Bodies in Appendix F, or UKAS at the address below or by visiting the UKAS website (www.ukas.com) from where the document can be freely downloaded.

The Secretary of the SSAC7 shall maintain a list of registered Organizations, based on the information provided by registered Organizations. The Secretary can be contacted at the address below. Lantra Awards also maintains a list of registered Organizations as a schedule of suppliers for the NHSS, details of which can be accessed from their web site www.scheduleofsuppliers.com. The cost of managing the website is defrayed by a small annual charge made by Lantra Awards to those Organizations appearing on the publicly available register. However, it should be noted that only those companies that confirm entry onto the schedule to Lantra Awards are listed. A list of all registered suppliers is held by Lantra Awards (if notified). Lantra Awards should be contacted by email at NHSSscheduleofsuppliers@lantra.co.uk to ascertain/check the status of company if it is not listed on the schedule

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Tel: 020 8917 8418 Z Fax: 020 8917 8499 Z Website www.ukas.com

INTERPRETATION OF BS EN ISO 9001: 2008

1.0 SCOPE

1.1. This document describes the quality management system requirements to be established by the supplier of road markings to road surfaces. It interprets the requirements of British Standard BS EN ISO 9001: 2008 and should be read in conjunction with that Standard. The scheme is applicable to Organizations carrying out the provision, application/installation, maintenance and removal of road markings on road surfaces.

The SSD shall be referenced in the Certificate of Registration issued by the Certification Bodies

1.2. This sector scheme document is currently applicable to the following material types and sub-types:

a) Thermoplastic Systems

- 1) Hand screed
- 2) Raised rib
- 3) Extrusion
- 4) Spray
- 5) Preformed Systems

b) Paint Systems

- 1) Spray
- 2) Airless spray
- 3) Extrusion
- 4) Hand Screed

c) Tape Systems

- 1) Permanent
- 2) Temporary

d) Road Studs

- 1) Inset
- 2) Surface mounted

1.3 References as listed in Appendix B have been utilised in the preparation of this document.

2. NORMATIVE REFERENCE

The following normative documents contain provisions, which constitute provisions of BS EN ISO 9001: 2008 Quality Management Systems – Requirements

- BS EN ISO 9000:2005 Quality Management Systems – Fundamentals and Vocabulary
- BS EN ISO 9004:2000 Quality Management Systems – Guidelines for Performance Improvements.

3. TERMS, DEFINITIONS & ABBREVIATIONS

3.1 Definitions

For the purpose of this Sector Scheme document the following definitions shall apply.

Client:

The body for which the work is being carried out e.g. Highway Authority and its nominated representative.

Certificate of Registration:	A certificate issued by a UKAS accredited Certification Body certifying that the holder operates a Quality Management System complying with BS EN ISO 9001: 2000 and this Document.
Contract Specification:	<p>i) Manual of Contract Documents for Highway Works: Volume 1: Specification for Highway Works (Highways Agency) or as specifically required in the contract documents.</p> <p>ii) Contract Specific Appendices</p> <p>iii) The Contract Drawings</p>
Customer:	The body and its nominated representative engaging the Organization for the purpose of the work described in this Document. (The main contractor where the Organization is a sub-contractor)
Designer	The person responsible for converting requirements into design output in the form of drawings, specifications, plans, instructions etc.
Quality Management System:	The Organization's organizational structure, responsibilities, procedures, processes and resources for implementing Quality Management to BS EN ISO 9001: 2000.
Organization:	The body responsible for the supply of materials, application/installation, maintenance and removal of road marking materials.
*Organization's Manager:	The person named in the Organization's Quality Plan as having managerial responsibility for the road marking operations.
Quality Plan:	The document setting out the specific quality practices, resources and sequence of activities relevant to the contract (see Appendix A)
*Road Marking Lead Operative:	The certified operative (eg Chargehand, Ganger, Foreman) named in the Organization's Quality Plan as having the responsibility, training and experience to establish and control the marking operation to meet the requirements of the Contract

Specification.

Road Marking Materials

All types and sub-types as listed in the scope.

*Road Marking Operative:

A certified operative who works under the control of a Road Marking Lead Operative and is directly involved with the application/installation maintenance or removal of road marking materials.

Road Marking Operative
implementing Traffic Management

A certified operative who works under the control of a Road Marking Lead Operative and is directly involved with the application/installation maintenance or removal of road marking materials and duly qualified to an appropriate level (for the operations undertaken). See Appendix M: Guidance for registered companies in relation to NHSS 12D, which identifies the level of qualification required for the various levels of operation undertaken

“shall”

“Used to indicate a requirement strictly to be followed in order to conform to the standard and from which no deviation is permitted. (See ISO Directives Part 3:1997, Annex E)” (reference “Guidance on the terminology used in ISO 9001: 2008 and ISO 9004: 2000”.

*Technical Manager:

The person named in the Organization’s Quality Plan responsible for the technical interpretation and implementation of the requirements of the Contract Specification.

Trainee Road Marking Operative

An operative receiving training under the direct control of a certified operative on a one to one basis and is formally registered as a Road Marking Construction Apprentice. (see Para 6.2.2.2)

* For minor contracts, some roles may be combined. The Road Marking Lead Operative shall be site based.

3.2 Abbreviations

BSI	British Standards Institution
CB	Certification Body (Accredited by UKAS or equivalent)
CDM	Construction Design Management (Regulations)
CSCS	Construction Skills Certification Scheme
CSS	'County Surveyors Society
CS/CITB	ConstructionSkills / Construction Industry Training Board
DfT	Department for Transport
DRD	Department for Regional Development (Northern Ireland)
DMRB	Design Manual for Roads & Bridges
HA	Highways Agency
LGNTO	Local Government National Training Organisation
MCHW	Manual of Contract Documents for Highway Works
NHSS	National Highway Sector Scheme
NVQ	National Vocational Qualification
RSMA	Road Safety Markings Association
SCOTVEC	Scottish Vocational Education Council
SSD	Sector Scheme Document
SSAC7	Sector Scheme Advisory Committee (for Sector Scheme No.7)
SSACRM	Sector Scheme Advisory Committee Road Marking
STANSPEC	RSMA Standard Specification Document
TSO	The Stationery Office
UKAS	United Kingdom Accreditation Service

QUALITY MANAGEMENT SYSTEM REQUIREMENTS

Clause/paragraph numbers in the following sections 4 to 8 inclusive refer to parallel clauses/paragraphs of BS EN 9001:2008. Where 'no specific interpretation' is recorded under a heading this means that the committee did not consider it necessary to provide supplementary interpretation for that clause

4 Quality Management System

4.1 General Requirements

The organization shall notify LANTRA Awards (Lantra House, Stoneleigh Park, Coventry, CV8 2LG) and the Secretary of SSAC7 of their registration to this NHSS, by provision of a copy of the appropriate certificate, immediately following confirmation from the Certification Body and thereafter annually. In addition the organization shall provide details of a contact point for the organization.

4.2 Documentation Requirements

4.2.1 General

Quality Plans shall be required for all contracts. When specified in the contract documents or requested, the Organization shall submit a Quality Plan or alternative document as defined in the Contract Specification for acceptance or approval by the Client, as appropriate, prior to commencement of work.

The relevant quality plan and standard operating procedures shall be available to operatives and shall be read, and the former signed by each operative.

See Appendix A for further detail.

4.2.2 Quality Manual

The section of the document only applies to organizations seeking certification to the Sector Scheme.

4.2.3 Control of Documents

All contract specific documents shall be controlled. These will include, but not be limited to, as applicable:

1. Correspondence;
2. Delivery notes and certification where required (eg road marking material grades);
3. Records of rejected material;
4. Contract documentation and Customer order;
5. Client/Customer drawings, risk assessments and records;
6. Instructions to Site Staff;
7. Calibration and maintenance records for temperature measuring and temperature control equipment;
8. Any amendments to the documents listed in Appendix B where appropriate to

the scope of registration and Contract Specification; and

9. Inspection, Test results and calibration records (as appropriate) for determination of specified requirements, eg control of temperature of marking material, the ability to apply glass beads evenly to the surface of the freshly applied road markings to the specified requirements, achievement of any minimum specified thickness, correct installation of road stud etc.

4.2.4 Control of Records

- (i) In addition to the Organization's own quality records, Contract specific records shall include, but not limited to, where appropriate:
 1. Customer's specification;
 2. Contract Review records;
 3. Quality Plan;
 4. Instructions to the Operative;
 5. Client/Customer and Organization risk assessments (as appropriate)
 6. Certification of supply of materials;
 7. Purchase orders;
 8. Calibration and verification records;
 9. Production records;
 10. Operator training;
 11. Complaints / concessions;
 12. Reasons for work stoppages / delays;
 13. Results of all tests undertaken which should be made available to the Client on request; and
 14. Traffic management
- (ii) The Organization shall keep all records for a minimum period of *six* years or until the end of the maintenance period whichever is greater. Record disposition after this period shall be defined in the Quality Plan.

5 Management Responsibility

5.1 Management Commitment

No specific interpretation.

5.2 Customer Focus

Processes for determining customer requirements shall consider the interests of the Client and the product end users, i.e. the general public/travelling public and shall be mindful of the Client's interaction with the end users. This will include processes to minimise disruption to traffic.

5.3 Quality Policy

The organization's quality policy statement shall include a statement of commitment to this NHSS.

5.4 Planning

No specific interpretation.

5.5 Responsibility, Authority and Communication

No specific interpretation.

5.6 Management Review

The Organization shall review the quality management system at least once a year to ensure its continuing suitability and effectiveness to conform to this NHSS. Records of the review shall be kept.

6 Resource Management

6.1 Provision of Resources

No specific interpretation.

6.2 Human Resources

6.2.1 General

The control of personnel selection including special requirements for skilled personnel e.g. training of site staff shall be managed in such a manner as to fulfil the requirements of this scheme.

6.2.2 Competence, Awareness and Training

6.2.2.1 Competency

a. Road Marking Lead Operatives & Road Marking Operatives

Experienced Operatives shall be assessed to one or more of the following qualifications relevant to their area of activity:

NVQ Level 2 Road-building (Pavement Marking - Hand Operated Equipment)

NVQ Level 2 Road-building (Pavement Marking - Machine Laid)

NVQ Level 2 Road-building (Pavement Marking – Road Studding)

NVQ Level 2 Road-building (Pavement Marking – Temporary Markings)

For details of NVQ Level 2-see Appendix C1A.

Operatives are required to obtain an NVQ within three years of commencement of employment.

All operatives shall, as a minimum, also be qualified (from January 2010) to the requirements of Sector Scheme 12D Module T1.

The Organization shall review, on a regular basis, the level of qualifications held by operatives, relative to NHSS12D activities, to ensure that the correct level of qualification is held. For details of NHSS12D training modules see Appendix C1B.

b. Supervisors

From January 2010 Supervisors shall be required to be registered for the following qualification:

NVQ Level 3 Occupational Work Supervision

Registered Candidates shall qualify within 18 months of registration and hold the appropriate CSCS Skill Card for Supervisors.

Generic Supervisory and Management NVQs/Qualifications commenced or obtained before August 1st 2009 are deemed to be compliant to this scheme, those commenced after this date are deemed to be non compliant.

6.2.2.2 Awareness and Training

a. Road Marking Lead Operatives & Road Marking Operatives

The minimum training requirement for all new road-marking operatives is training through the Road Marking Apprenticeship scheme, managed by the Road Safety Markings Association. (Details of this scheme are shown at Appendix C3)

Employers shall register, with RSMA, all newly employed unqualified operatives (with no previous road marking experience), to this scheme within two months of the commencement of employment. Training under this scheme shall commence within six months of starting employment.

All operatives are required to obtain qualifications relevant to their role under Sector Scheme 12D through a registered trainer. Details of registered trainers are available through either LANTRA Awards or RSMA (contact details are shown at Paragraph 4.1 or Appendix C3).

6.2.2.3 Registration

a. Road Marking Lead Operatives and Road Marking Operatives

- (i) Operatives are required to be registered with the Construction Skills Certification Scheme (CSCS) and be in possession of one of the CSCS Registration cards detailed at 6.2.2.3 a. (ii) Trainees shall be registered under CSCS and also shall be registered on the approved Apprenticeship Scheme.

(ii) CSCS Registration Cards

A CSCS Card is issued to Operatives in two categories, provided they have satisfied the CSCS conditions of issue, these two categories and conditions of issue are:

Trainee – A CSCS Trainee Card is issued to an operative, without experience, who is undertaking an approved Apprenticeship Scheme and is working towards an NVQ Level 2 in Pavement Marking. In order to obtain the CSCS Trainee Card, the trainee shall be registered for the Apprenticeship Scheme and for the appropriate NVQ, sit and pass the approved CSCS/CITB Health & Safety (Highways) Touch Screen Test.

An operative holding a CSCS Trainee Card has three years in which to complete their apprenticeship and obtain their NVQ and subsequently their full CSCS Card. Failure to do so will result in the withdrawal of the Trainee Card.

Full CSCS Skills Card (Pavement Marking) – The full CSCS Skills Card is

awarded to operatives completing their NVQ Level 2 in Pavement Marking
The card is renewed by sitting and passing the CSCS/CITB Health & Safety (Highways) Touch Screen Test.

All road-marking operatives shall carry a CSCS Card relevant to the activity they undertake and to their status (i.e Trainee or Qualified operative) bearing their photograph and confirmation of status.

NOTE: Operatives may continue to hold a CSCS Experienced Workers Card, previously issued to them. These cards have three year validity, providing the operative the opportunity to obtain the relevant qualification following which a Full CSCS Skills Card will be issued. Experienced Workers cards cannot be renewed and new cards are no longer issued, consequently failure to obtain the relevant NVQ Qualification renders the operative unqualified for the activity and not conforming to the requirements of this NHSS.

(iii) RSMA Road Marking Apprenticeship Scheme

RSMA is the registration body for the Road Marking Apprenticeship Scheme.

All trainees shall be registered to this scheme and shall undertake the training modules, contained within it and appropriate to their work requirements. (See Appendix C2) The Road Marking Apprenticeship Scheme is the only recognised training scheme under this NHSS; company based and/or delivered training schemes are not recognised and are deemed non compliant.

All trainees undertaking the Apprenticeship Scheme are issued with a log book and scheme booklet as part of their work towards an NVQ Level 2 Roadbuilding – Pavement Marking Award

The scheme provides additional training beyond that previously contained in training requirements to NHSS No. 7.

(iv) RSMA/LGNTO Registration Scheme – Certified Operatives

This training scheme and related qualifications, specified under earlier editions of this NHSS are no longer deemed compliant and therefore are no longer valid for companies registered to this scheme. All operatives holding these qualifications are required to obtain CSCS Cards through completion of a relevant Level 2 NVQ Qualification (see 6.2.2.1).

(v) Approved Registration Bodies

A list of the bodies accredited to assess NVQ Level 2 (Pavement Marking) is available from CS/CITB. All operatives undertaking and or completing an NVQ in pursuance of this NHSS must be registered with the approved NVQ registration body.

The approved Registration Body for the Road Marking Apprenticeship Scheme is shown at Appendix C3.

b) Supervisors

(i.) Supervisors and Managers are required to be registered with the Construction Skills Certification Scheme (CSCS) and be in possession of the CSCS Registration cards detailed at 6.2.2.3 b. (ii)

(ii.) A CSCS Card is issued to Supervisors in the following category, provided they

have satisfied the CSCS condition of issue; which are as follows:

Advanced Craft/Supervisory – The Gold Advanced Craft/Supervisory Card is awarded to an individual attaining a Level 3 Qualification in Occupational Work Supervision

(iii) Approved Registration Bodies

A list of the bodies accredited to assess NVQ Level 3 (Occupational Work Supervision) is available from CS/CITB. All Supervisors undertaking and or completing an NVQ in pursuance of this NHSS must be registered with the approved NVQ registration body.

6.2.2.4 Personnel records relating to experience and operative designation

The organisation shall keep the following records as a minimum

Record of Practical Experience

- (i) The Organization shall create and maintain a validated Record of Practical Experience for each road marking charge hand and operative he employs. The record shall include full details of the manner in which the individual has obtained practical experience i.e. dates, types of marking systems worked, duties performed etc.

Unregistered Road Marking Operatives shall at all times be supervised by a suitably experienced and qualified operative, on a 'one to one' basis. Unregistered Operatives will be required to have a minimum of two months recorded supervised experience prior to commencing the approved Apprenticeship training scheme.

The registration to the Apprenticeship Scheme, issue of a logbook, scheme booklet and completion of training modules to the scheme, shall be recorded by the Organization on the individual Record of Practical Experience. (See Appendix C5)

- (ii) Register of Designated Lead Operatives

The Organization shall maintain a Register of Designated Lead Operatives in the style of that shown in Appendix D.

- (iii) Client Requirements

For contracts where the Highways Agency is the Highway Authority all operatives are required to be registered in accordance with Paragraph 6.2.2.3 i. and hold a current CSCS Registration Card. Requirements for other Highway Authorities shall be determined on a contract-by-contract basis.

6.3 Infrastructure

No specific interpretation.

6.4 Work Environment

No specific interpretation.

7 Planning and Product Realization

7.1 Planning of product realisation

The Organization shall determine and document how the requirements for quality will be met. When specified in the contract documents the Organization shall submit a Quality Plan or alternative document as defined in the contract specification for approval by the Client prior to commencement of work. Such quality plans should include reference to environmental issues related to the identified work. The Quality Plan shall, as a minimum, address the topics listed in Appendix A supplemented by the contract specific information. (The Organization's Quality Management System Documents shall be made available for examination by the Client and copies provided if requested.)

7.2 Customer Related Processes

7.2.1 The Contract Specification shall not be changed without written approval from the Client. When the Organization is unable to meet the contract specification it shall be referred back to the Client for resolution prior to works commencing

7.2.2 (i) The processes for review and determination of requirements shall require the Organization to verify that the order placed or any subsequent amendments to that order meet the technical requirements included in the Contract Specification.

(ii) Although not *necessarily* responsible for the design, the Technical Manager shall, prior to commencement of the road marking operation, check the practicality of the proposed measures. Where appropriate, this will include liaison with third parties, in particular the Highway Authority, the Customer, Client and the Police. Where irregularities or inconsistencies with the Contract Specification, health and safety or other requirements are encountered these shall be brought to the attention of the Customer / Client for resolution.

(iii) Matters of a significant nature that arise during the review processes shall be considered during the management review and incorporated as necessary into the quality system.

7.2.3 Customer communication

The Organization shall have a process in place to notify Lantra Awards and the Secretary of the SSAC of its registration status in respect of this NHSS, within 14 days of gaining registration to this NHSS and thereafter annually.

7.3 Design and Development

(i) Where road markings design or development is undertaken, by the road marking company, the Quality Plan will identify the personnel involved with their qualifications/experience appropriate for design. This shall include those involved with design verification and approval.

(ii) The Quality Plan shall identify the level and processes to be used for design verification.

7.4 Purchasing

The Organization shall establish documented procedures to ensure that all sub contractors (as appropriate) and materials conform to the Contract Specification. All copies of certification to verify this shall, on request, be passed to the Client

7.5 Production and Service Provision

7.5.1 Control of Product and Service Provision

- (i) The Organization shall produce method statements for the application/installation, maintenance and removal process of road markings. These shall be submitted to the Client's representative for acceptance or approval as appropriate.
- (ii) The Organization's management and certified operatives shall have a working knowledge and access to the documents listed in Appendix B that are relevant to the work described in the contract.
- (iii) The Organization shall appoint a Registered Road Marking Lead Operative who shall be responsible for the installation of application/installation, maintenance and removal process of road markings. The Registered Road Marking Lead Operative shall be included in the Organization's Contract Specific Quality Plan as having the responsibility, training and experience to meet the requirements of the Contract Specification.

Before site work commences, the Organization shall ensure that the following are documented and issued to the Road Marking Lead Operative. A copy shall be retained for record purposes.

1. Any special instructions to the Road Marking Operatives relating to the programme of work, including relevant risk assessments.
2. The equipment required for the work and the method of application/removal of material to meet the requirements of the contract.
3. Any additional application/removal instructions

The following items shall be considered as part of process control:

1. Ensuring that the purchased materials used are as specified by the Customer;
2. Ensuring that the materials are clearly identifiable;
3. The presence of a Road Marking Lead Operative during application of road markings;
4. A system for dealing with Variation Orders issued by the Client;
5. Setting-out of road markings and control of the equipment to comply with the Contract Specification;
6. Record of road surface condition prior to application of markings;
7. Compliance with the requirements of Chapter 8 of the Traffic Signs Manual , as appropriate, where the road is open to public use. (Note: For high-speed dual carriageways there is a requirement for the traffic management contractor to hold qualification to Sector Schemes 12A, 12B, 12C as appropriate).
8. Sector Scheme 12D has been developed to enhance safety in traffic management and is in part relevant to Companies registered to Sector Scheme 7. Issues of compliance with 12D are explained in Appendix M.
9. Customer notification within 24 hours of any problems which may affect the planned programme of work; and
10. Contract Maintenance Period activities.

7.5.2 Validation of processes for production and service provision

- (i) Inspection and testing shall be undertaken to demonstrate adherence to the specification, e.g. control of temperature of marking material/stud grout, the ability to apply glass beads evenly to the surface of the freshly applied road markings to the specified requirements, achievement of specified requirement. The methods and frequency of testing shall be defined in the Quality Plan (see Appendix A).

Works orders, risk assessment and quality plans shall be signed by the Registered Road Marking Lead Operative or Technical Officer and retained for 6 years, They will also be submitted to the Client if requested.

- (ii) During the review processes checks shall be undertaken to establish whether any additional Client specified testing and inspection regime is to be adopted. For contracts where the Specification for Highway Works is used additional requirements will usually be included in Appendices 0/1, 0/2, 1/5 and 12/3 of the Contract Specification.

7.5.3 Identification and Traceability

- (i) The Organization shall establish documented procedures to ensure that goods returned to stock are placed at the correct location in the material storage area.

There must be an auditable process of document retention which can be clearly identified and traced.

7.5.4 Customer Property

- (i) The Organization shall establish documented procedures to be applied where the Customer or the Client supplies material if this is identified in the Contract Specification.

7.5.5 Preservation of product

- (i) When appropriate to the Contract, storage arrangements and delivery programme for all materials shall be stated in the Quality Plan
- (ii) Stock materials are protected from deterioration and or damage.

7.6 Control of Monitoring and Measuring Devices

The Organization shall establish documented procedures to demonstrate the manner and frequency of the inspection and calibration of the inspection, measuring and test equipment necessary for the proper execution of the Contract. The frequency shall be in accordance with the requirements stated in Appd'x E.

8 Measurement, Analysis and Improvement

8.1 General

No specific interpretation.

8.2 Monitoring and Measurement

8.2.1 Customer satisfaction

No specific interpretation

8.2.2 Internal Audit

- (i) The Organization shall establish documented procedures to ensure that internal audits are undertaken which cover within each twelve-month period all aspects of the Quality Management System as applied at both site and depot operations.

Internal auditors shall have a working knowledge of the application/installation, maintenance and removal process of road markings Internal audits shall be carried out under the control of the nominated quality manager. Guidance and technical requirements for internal auditors are provided at Appendix G1.

8.2.3 Monitoring and measurement of processes

This includes the ongoing impact of the application/installation, maintenance and removal processes for road markings on other works including congestion and traffic flows

8.2.4 Monitoring and measurement of product

In line with the requirements of Appendix A Paragraph 2.9

8.3 Control of Non-conforming Product

Any materials and/or work not conforming to the Contract Specification shall either be reworked to conform or must formally be accepted in writing by the Client, the materials and/or work shall otherwise be considered to be rejected.

8.4 Analysis of Data

No specific interpretation.

8.5 Improvement

- 8.5.1 The corrective and preventative action processes shall include analysis of incidents and occurrences

APPENDIX A: REQUIREMENTS FOR QUALITY PLANS

1. General Requirements:

- 1.1 Definition of the product or service to be provided
- 1.2 The structure of the Organization describing the line of command and stating the names of the Organization's Manager responsible for the contracted work, the Technical Manager, Road Marking Lead Operative and Designer and their training. An Organization's representative who can be contacted at all times when works are being undertaken must be identified. Where it is proposed to use a road marking sub-contractor or term maintenance contractor/in house operation, this should be stated and details provided. All road marking sub-contractors and term maintenance contractor/in house operators shall be registered to the requirements of this Sector Scheme.
- 1.3 Identification of the parts of the Organization's Quality Management System relevant to the product or service being provided.
- 1.4 The control of equipment.
- 1.5 Any environmental conditions impacting upon the specified works

2. Contract Specific Statements

These are required for the following:

- 2.1 Names and contact details of the staff involved with the contract including the:
 - 2.1.1 Customer's nominated Quality Manager, project manager and/or other representatives through whom communication is to be made throughout the contract.
 - 2.1.2 Road Marking Supervisors.
- 2.2 Details of the contract specific equipment to be used and any certification required to be issued to the Customer/Client.
- 2.4 Details of the communications required between the Organizations staff and the Customer/Client or any other party.
- 2.5 Work programme and details of deliverables.
- 2.6 Liaison with the Police and the Highway Authority or other competent authority.
- 2.7 Materials storage details and location
- 2.8 Method statements for application/installation, maintenance and removal of road markings, detailed drawing(s) to be supplied.
- 2.9 Inspection and testing regime to be adopted covering frequency, methods of test, responsibility for testing and acceptance criteria.
- 2.10 Control of non-conforming product.

2.11 How performance requirements are to be achieved.

3. Contract Specific Information

This shall be obtained directly by the Organization and documented in the Quality Plan, and shall include as a minimum the following:

- 3.1 Name and address of Customer, including his nominated quality manager, project manager and/or other representative through whom communication is to be made throughout the contract.
- 3.2 Location of sites for the contract and means of access.
- 3.3 Specification and/or Contract Drawings.
- 3.4 Extent of the works and the commencement and completion dates for the contract.
- 3.5 Type(s) and thickness of marking to be applied, including reflectorised material or not, additional surface applied glass beads or not.
- 3.6 Type(s) of surfaces including existing markings on which the material is to be applied and the need or otherwise for any surface preparation.
- 3.7 Type(s) of Road Studs to be installed
- 3.8 All relevant information relating to speed restrictions, safety requirements, existing markings, marking removal method, time of working and any other environmental requirements.
- 3.9 Any client specified testing requirements and responsibility for testing including supply of test equipment
- 3.10 Disposition of records after six years or the end of the maintenance period if longer.

Note: Where certain aspects of this information cannot be obtained or, is not provided, this fact shall be noted in the Quality Plan against the appropriate section.

The Organization should also be aware that there may be further general requirements for quality plans within a contract, for instance Appendix 1/24 of the Manual of Contract Documents for Highway Works, which may also need to be addressed.

APPENDIX B: REFERENCE DOCUMENTS

Reference Documents relevant to this Sector Scheme at the date of issue.

The listing is not comprehensive; other documents may be required to fulfil the requirements of the contract. Organizations shall ensure that they have a working knowledge and access to all the documents including amendments unless stated otherwise in the specification.

1. Manual of Contract Documents for Highway Works:
Volume 1 Specification for Highway Works - TSO

Series 000 Introduction
Series 100 Preliminaries
Series 1200 Traffic Signs
Any additional clauses identified in the contract
Relevant Sector Scheme Documents from Appendix A including:

Scheme 12A&B Static Temporary Traffic Management on Motorways and High Speed Dual Carriageway Roads including on line widening.

2. Manual of Contract Documents for Highway Works:
Volume 2 Notes for Guidance on the Specification for Highway Works - TSO

Series NG000 Introduction
Series NG100 Preliminaries
Series NG1200 Traffic Signs

Note - Volumes 1 and 2 of the Manual of Contract Documents for Highway Works were revised and published in March 1998. Amendments are made to these volumes from time to time, possibly at intervals of three months. The Organization shall ensure that there is a system in place to monitor publication of amendments to these documents. Information can be obtained from the Highways Agency's Information Line 08457 504030

3. Manual of Contract Documents for Highway Works:
Volume 3 Highway Construction Details D Series - TSO

4. Design Manual for Roads and Bridges: (TSO)
Volume 8: Traffic Signs and Lighting
Section 2: Traffic Signs and Road Markings

TD 26/07 - Maintenance of Road Markings
TA 8/80 - Carriageway Markings: Markings for Right Turning Movements at Cross-Road Junctions

TA 78/97 - Design of Road Markings at Roundabouts

TD 70/08 - Design of Wide Single 2 + 1 Roads

Section 5: Pedestrian Crossings

TD 28/87 – Pedestrian Crossings: Pelican & Zebra Crossings
TA 52/87 – Design Considerations for Pelican & Zebra Crossings

5. Traffic Signs Manual - TSO
 - Chapter 1: Introduction (1982)
 - Chapter 3: Regulatory Signs (2008)
 - Chapter 5: Road Markings (2003)
 - Chapter 8: Traffic Safety Measures and Signs for Road Works and Temporary Situations Part 1 Design & Part 2 Operations (2009)
6. Traffic Signs Regulations and General Directions (2002) - TSO
7. 'Zebra, Pelican and Puffin Pedestrian Crossing Regulations and General Directions (SI 1997 No. 2400) - TSO
8. Safety of Street Works and Road Works: A Code of Practice 2002 - TSO
9. TRMM (Trunk Road Maintenance Manual Volume 2 Part 1) – HA 1996
 - Chapter 1.15: Road Studs
 - Chapter 1.16: Road Markings
10. User Manual for the Highways Agency's Routine Maintenance Management System (RMMS) – HA 1996
11. Notes for Guidance Safety at Roadworks
 - Third Edition
 - Joint Working Party
 - (Department of Transport/County Surveyors' Society)
 - (C.S.S. publication 1994)
12. Update your Road Safety Markings – 2006 Edition
 - A Review of Road Marking Legislation and Practice
 - (Road Safety Marking Association 2006)
14. Lining up for Safety On the Road - RSMA DVD
 - (Road Safety Marking Association 2009 – Available September 2009).
15. Appropriate Manufacturers' Road Stud Installation Procedures.
16. RSMA StanSpec 2009 – Standard Specification Document for Road Marking and Road Studs. (Updated annually)
17. European Standards
 - a) BS EN ISO 9000: 2005 Quality Management Systems – Fundamentals and Vocabulary
 - b) BS EN ISO 9001: 2008 Quality Management Systems – Requirements
 - c) BS EN ISO 9004: 2000 Quality Management Systems – Guidelines for Performance Improvements
 - d) BS EN 1423: 1998 Road Marking Materials – Drop on materials, glass beads, antiskid aggregates and mixtures of the two
 - e) BS EN 1424: 1998 Road Marking Materials – Premix glass beads

- f) BS EN 1436: 2007 Road Marking Materials – Performance for road user
 - g) BS EN 1463-1:1998 Road marking materials Retro-reflecting road studs – Initial Performance requirements
 - h) BS EN 1463- 2: 2000 Road marking materials Retro-reflecting road studs – Road Test Performance Specification
 - i) BS EN 1790:1998 Road Marking Materials Pre-formed road markings
 - j) BS EN 1824:1998 Road Marking Materials – Road trials
 - k) BS EN 1871: 2000 Road marking Materials – Physical properties
- 18 Guidance for Safer Temporary Traffic Management (CSS/HA/HSE) – 2002

This list of standards and documents are date specific, however, the Organization shall have procedures in place to ensure that the latest version is always available.

APPENDIX C1: TRAINING AND HEALTH AND SAFETY - NVQ QUALIFICATIONS

C1a.

NVQ Level 2 Road-building - Pavement Marking (Machine)

NVQ Level 2 Road-building - Pavement Marking (Manual Operations) Permanent or Temporary

NVQ Level 2 Road-building - Pavement Marking (Road Studs)

The following Units of Competence are contained within the NVQ Level 2 Qualification Road-building Pavement Marking and refer to the specific operational qualification available.

NVQ Level 2 Road-building - Pavement Marking (Machine)

Unit no. VR01 *Conform to General Workplace Safety*

Unit no. VR02 *Conform to Efficient Work Practices*

Unit no. VR360R *Establish Work Area Protection and Safety*

Unit No. VR376I *Operate and Control Operations of Road Plant or Machinery*

NVQ Level 2 Road-building - Pavement Marking (Manual Operations) Permanent or Temporary

Unit no. VR01 *Conform to General Workplace Safety*

Unit no. VR02 *Conform to Efficient Work Practices*

Unit no. VR360R *Establish Work Area Protection and Safety*

Unit no. VR377 *Apply and Remove Pavement Markings Manually*

NVQ Level 2 Road-building - Pavement Marking (Road Studs)

Unit no. VR01 *Conform to General Workplace Safety*

Unit no. VR02 *Conform to Efficient Work Practices*

Unit no. VR360R *Establish Work Area Protection and Safety*

Unit no. VR378 *Install and Remove Permanent Road Studs*

Training requirements for all NVQ Level 2 Pavement Marking qualifications are satisfied by the completion of the Road Marking Apprenticeship, managed by RSMA.

NVQ Level 3 – Occupational Work Supervision qualification

To satisfy the requirements of this NVQ, candidates must achieve the 5 Mandatory Units, plus 2 Unit Options

MANDATORY UNITS

Unit No. VR209 Confirm Work Activities and Resources for the work

Unit No. VR210 Develop and Maintain Good Working Relationships

Unit No. VR211 Confirm the Occupational Method of Work

Unit No. VR212 Implement and Maintain Health, Safety and Welfare

Unit No. VR213 Co-Ordinate and Organise Work Operations

OPTIONAL UNITS

Unit No. VR214 Allocate and Monitor the Use of Plant and Equipment

Unit No. VR215 Monitor Process Against Work Schedules

Unit No. VR216 Confirm Work Meets Quality Standards

Unit No. VR217 Implement Procedure to Support Team's Performance

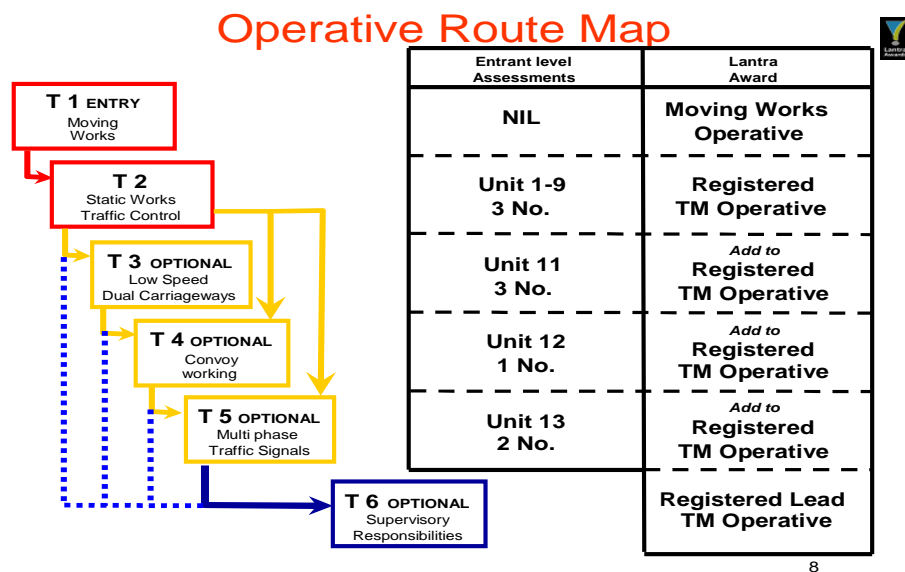
Unit No. VR218 Contribute to the Circulation of Information

The above units outlined for Level 2 and level 3 Qualifications are correct at the time of revision of this scheme, although they will themselves be subject to ongoing revision. Applicants to this Sector Scheme should ensure that their operatives are registered, where appropriate, to the current NVQ Qualification.

C1b. SECTOR SCHEME 12D QUALIFICATIONS

A range of qualifications are specified in National Highways Sector Scheme 12D and Organizations should satisfy themselves that operatives have obtained the level of qualification relevant to the activities they are required to undertake. All operatives in road marking require at least qualification to Unit T1. For road marking operatives qualified to NVQ Level 2 in Pavement Markings assessment requirements specified for Units T2 to T6 are reduced by 1 assessment. All operatives in road marking require at least qualification to Unit T1.

A qualification for Managers and Clients is available within NHSS 12D, with the introduction of an additional Module T7. Further details are available within the NHSS 12D.



General Note on Health and Safety

Organizations are reminded of the legal requirements to provide health and safety training for all operatives as appropriate in accordance with the Health and Safety at Work Act 1974.

The training and assessment of operatives required by this scheme is aimed primarily at technical competence in the application/installation, maintenance and removal processes of road markings. It is intended to provide awareness to carry out work in a safe manner; however, it remains the responsibility of the organization to determine and implement safe systems of work.

Highways Organizations are reminded of the requirements for temporary traffic management on all highways including high speed dual carriageways and motorways. For work on high-speed dual carriageways and motorways such works shall be carried out by an Organization registered to NHSS 12A or 12 B as appropriate. For works on other roads NHSS 12D applies and Organizations need to ensure that they have appropriately skilled personnel to set out the necessary temporary traffic management measures. Guidance is given in Appendix M of NHSS 12D.

If they are working adjacent to live highways it is a requirement that personnel pass the specialist test questions for Highway Works included in the CSCS Health & Safety touch screen test.

APPENDIX C2: TRAINING AND HEALTH AND SAFETY - ROAD MARKING APPRENTICESHIP SCHEME

(For the Training of Road Marking and Studding Operatives)

The following modules make up the core elements of the Road Marking Apprenticeship Scheme and are delivered in a series of off the job training courses (shown below), supplemented by on the job work experience. The qualification is completed over an 18 month period, which culminates in assessment for an NVQ Level 2 Qualification. Employers shall register, with RSMA, all newly employed unqualified operatives (with no previous road marking experience), to this scheme within two months of the commencement of employment. Training under this scheme shall commence within six months of starting employment.

All operatives, prior to their working on site, shall successfully complete the CSCS/CITB Health & Safety (Highways) Touch Screen Test.

Note 1: Modules may be delivered in differing order or timescale only with the approval of the registration body

Note 2: Where a training module for other applications is not available Clause 6.2 of BS EN ISO: 9001: 2008 shall apply.

Mod Ref.	Course Module Description	Off Site Duration	Off-Job Training Dates
KS	Key Skills	5 days	Month1
1	Scheme Registration and NVQ Induction	½ day	Month 2
2	Formal Training – Manual Handling	½ day	
3	Formal Training - First Aid Appointed Person	1 day	
4	Road Marking Health & Safety	1 day	
5	Introduction to Industry Regulations, Road Marking Materials and Equipment	2 days	
6	Hand Screed Applied Markings	3 days	Month 4
7	Traffic Management to Sector Scheme 12d Unit T1 Banksman (Marshalling) ADR Appreciation <ul style="list-style-type: none"> • Chemical Awareness • Selection And Use of Fire Extinguishers 	2 days	
8	Pedestrian Applicator	3 days	Month 7
9	Hand Held Line Removal	1 day	
10	Preformed, Temporary Markings & Surface Mounted Road Studs	1 day	
11	Fork Lift Truck	3 days minimum	Month 10
12	Paint Machines	2 days	Month 15
13	Inset Road Studs	1 day	
14	Machine Applied Road Markings	1 day	
15	On site training, unit assessments and final sign off to be completed by month 24		Month 18-24
	Totals	27 days	

APPENDIX C3 – APPROVED REGISTRATION BODIES

The following bodies are approved to issue registration cards for operatives seeking qualifications or holding qualifications under this scheme. These centres retain records of operatives qualified to the relevant schemes.

Details of Centres/individuals approved to either assess NVQ Level 2 or train operatives to the Road Marking Apprenticeship Scheme are available from the registration bodies.

NVQ Qualification Registration Body for Sector Scheme No.7, covering

NVQ Level 2 Road-building - Pavement Marking (Machine)

NVQ Level 2 Road-building - Pavement Marking (Manual Operations) Permanent or Temporary

NVQ Level 2 Road-building - Pavement Marking (Road Studs)

NVQ Level 3 Occupational Work Supervision

Construction Awards Alliance

Bircham Newton

King's Lynn

Norfolk PE31 6ED

Information is also available from

Road Safety Markings Association

Unit 35 Corringham Road Industrial Estate

Gainsborough

Lincolnshire DN21 1QB

Tel: 01427 610101

Fax: 01427 610106

Road Marking Apprenticeship Scheme Registration Body

Road Safety Markings Association

Unit 35 Corringham Road Industrial Estate

Gainsborough

Lincolnshire DN21 1QB

Tel: 01427 610101

Fax: 01427 610106

The Apprenticeship Scheme can only be delivered through centres approved by the Road Marking Apprenticeship Scheme Registration Body.

Construction Skills Certification Scheme

CSCS Card registrations through with CSCS at:

Construction Skills Certification Scheme

B & CE Benefit Schemes

Manor Royal

Crawley RH10 9QP

APPENDIX C4 - ASSESSMENT RECORD FOR NVQ EXPERIENCED/QUALIFIED OPERATIVES

Each Organisation shall maintain a record of the date of each operative's C-SCS and NVQ Registration, Unit Attainment and Training Modules undertaken where these modules were. This form should not be used to record training and qualification of new entrants into road marking (use Appendix C.5)

Operative Name & Date employment commenced																					
NVQ Reg.																					
Health & Safety Test Passed																					
CSCS Reg																					
Skill Match Profiling																					
Training completed following Skill Match																					
Unit VR01																					
Unit VR02																					
Unit VR360R																					
Unit VR3761																					
Unit VR377 Temporary																					
Unit VR377 Permanent																					
Unit VR 378																					

APPENDIX C5: RECORD OF APPRENTICESHIP REGISTRATION AND TRAINING

Each Organisation shall maintain a record for apprentice road marking operatives. An example of an entry in a register is as below.

Name of Company

Name of Operative

Q.A. Certification Body

Registration Number

	R SMA Apprenticeship Registration No.	Name of Training Provider	Date of Achievement	Signature of Training Provider	Name and Signature of Organisation's Manager
Apprentice registered					
Modules 1-5 – Formal training (1)					
Module 6 – Hand Screed Work					
Module 7 – Line removal					
Module 8 – Formal training (2)					
Module 9 – Pram Work					
Module 10 – Paint machine					
Module 11 – Preformed and Temporary Markings					
Module 12 – Inset Road Studs					
Module 13 – Machine Applied					
Module 14 – NVQ Assessment Completion					

APPENDIX E: REQUIREMENTS FOR THE CONTROL OF MONITORING AND MEASURING DEVICES

(BS EN ISO 9001: 2008 CLAUSE 7.6)

The following does not represent an exhaustive list of monitoring and measuring devices and therefore equipment not included should be calibrated to an acceptable standard.

Item No	Equipment	Purchase Specification	Calibration Control	Calibration Frequency
1	Thermometers and temperature control equipment	Equipment must operate within a tolerance of $\pm 10^{\circ}\text{C}$ at working temperature	Calibration traceable to national standards	3 monthly (may be extended to 12 months upon demonstration of continued calibration accuracy)
2	Pressure measuring equipment	Appropriate British or International standard	Calibration traceable to national standards	Annually
3	Thickness/height measuring equipment	Maximum allowable error at any point in working range value $\pm 5\%$	Calibration traceable to national standards	Annually
4	Measuring wheels, tapes and rules	Maximum allowable error $\pm 1\%$ of the measurement range undertaken (upon purchase only)	Verification check when signs of wear or damage appear	Checks as required

Note

1. Visual daily checks of items 1 and 2 shall be carried out on site to confirm that the equipment is working correctly and is not damaged. Records of the daily checks shall be kept.
2. If in-house calibration equipment is used for the calibration of items 1 and 2 it shall not be used for any other purpose and shall itself be calibrated traceable to national standards at intervals not exceeding two years.
3. If in-house calibration equipment is used for the calibration of item 3 it shall not be used for any other purpose and shall itself be calibrated traceable to national standards at intervals not exceeding five years.
4. Records of all equipment in use, its calibration status and calibration or verification checks undertaken shall be established and maintained.

APPENDIX F: LIST OF CERTIFICATION BODIES

When implemented, information on certification bodies accredited against this scheme can be found on the UKAS website www.ukas.com. To identify the certification bodies on the website:

- place the cursor onto 'about accreditation' in top grey menu bar
- move down to 'accredited bodies'
- move across to 'certification body schedules' and left click on this to take you to the list of schedules
- move down past 'key abbreviations' to 'search within the schedules' – click on 'advanced search'
- type 'Highway Sector Scheme No. 7' in the box and tick the square by 'search UKAS documents'
- left click 'search'
- this then lists the certification bodies who are accredited and their details can be found by clicking on the appropriate links.

Note 1: Advice on the current accreditation status of certification bodies to assess against this document should be sought from UKAS (Tel 0208 917 8400)

As at 01/4/2009, the following certification bodies have been accredited by UKAS for assessing to this document.

Certification Body

BSI

Lloyds Register Quality Assurance Limited

Moody International

NQA

SGS United Kingdom Ltd

APPENDIX G: THE ROLE OF THE CERTIFICATION BODY AND AUDITOR QUALIFICATIONS

1. Role of Certification Bodies

- 1.1. The independent assessment of conformity of Organizations to the requirements of BS EN ISO9001 and the additional requirements required by this SSD rely upon the assessment expertise, competence and capability of accredited certification bodies.
- 1.2. The CB role is to ensure, through assessment, that Organizations have management systems in place which address the enhanced BS EN ISO9001 requirements detailed in this SSD.

2. Certification Body Accreditation

- 2.1. To ensure consistency and to demonstrate independent capability Certification Bodies are required to be accredited against the requirements of ISO 17021:2006 by the United Kingdom Accreditation Service (UKAS) or an equivalent International Accreditation Forum (IAF) member for assessment and registration of BS EN ISO9001 quality management systems interpreted in accordance with this NHSS.

3. Assessor and Assessment Team Competence.

- 3.1 The CB must be able to demonstrate to UKAS that it possesses and can maintain the necessary assessor experience and technical understanding of the application/installation, maintenance and removal process of road markings covered in the scope of this Sector Scheme. These assessment areas shall include, but not be limited to the following:

- i) knowledge, understanding and application of this SSD

- ii) knowledge of the manufacture and supply in the application/installation, maintenance and removal processes of the road markings industry, including the methods and techniques sufficient to understand the processes employed and the controls necessary to ensure delivery of conforming product. Typically this would include knowledge of the product and processes.

(Conveyance of this knowledge to auditing teams will be determined by the CB and will be audited by UKAS).

- iii) maintenance of demonstrable technical highway engineering background, capable of reading and understanding specifications and drawings, including knowledge of the Specification for Highway Works and design standards requirements for the application/installation, maintenance and removal processes of road markings.

- iv) ability to demonstrate that they have ongoing suitable health and safety training which shall include appreciation of the risks involved in the manufacture, supply and installation road markings; and

- v) preferably knowledge of relevant road marking materials

- 3.2. The CB must also ensure that assessors have sufficient knowledge of health & safety requirements related to working on live highways where appropriate, knowledge of temporary traffic management, working in confined spaces and working at height for

assessment of guidance provided on this aspect.

3.3. Guidance to CBs on assessor competence related to this Sector Scheme is given in the Certification Body guidance document – National Highway Sector Scheme Accreditation, Registration and Assessment Guidance for Certification Bodies – NHSS 0 Part 4 when available.

3.4 The CB is responsible for ensuring that the assessment teams possess demonstrable expertise in the assessment areas detailed above as they relate to the scope of client activities under assessment.

3.5 Minimum assessor qualifications and competence for assessment of this NHSS, which may reside in a single individual, or in an assessment team are as follows:

- i) International Register of Certificated Auditors (IRCA) Registered ISO9001:2008 Lead Auditor qualification or CB equivalent and demonstrable expertise in leading assessment teams;
- ii) BS EN ISO9001:2008 assessment experience obtained from assessments of NHSS No. 7 activities in at least two different Organizations;
- iii) technical assessment competence in the categories of the application/installation, maintenance and removal process of road markings;
- iv) knowledge, understanding and application of this SSD;
- v) knowledge of the manufacture and supply in the Sector Scheme No. 7 industry, including the methods and techniques sufficient to understand the processes employed and the controls necessary to ensure delivery of conforming product. Typically this would include knowledge of road markings and processes. (Conveyance of this knowledge to auditing teams will be determined by the CB and will be audited by UKAS);
- vi) demonstrable technical highway engineering background, capable of reading and understanding specifications and drawings, including knowledge of the Specification for Highway Works and design standards requirements for the application/installation, maintenance and removal process of road markings;
- vii) ability to demonstrate that they have ongoing suitable health and safety training which includes appreciation of the risks involved in the sector scheme activities of the road marking sector; and
- viii) preferably, knowledge of road marking and studding operations and materials.

4. Conduct of Assessments.

4.1. CBs shall ensure that 25% of the initial and continuing assessment duration is devoted to assessing operational activities at sites and locations where the application/installation, maintenance and removal process of road markings covered by the scope of this NHSS are being undertaken.

4.2. CBs shall make every endeavour to ensure that during a three year certification cycle there is evidence of assessment of all activities covered by the Organization's scope of

registration. CBs shall undertake surveillance visits at intervals of not greater than one year.

5. Format and Content of Registration Certificates.

5.1. Certificates of registration issued by CBs, which include within the scope of registration reference to compliance with this NHSS, shall be in a format and contain the content detailed in Appendix K of this SSD.

5.2. The NHSS Logo shall be included in any Certificate of Registration which has this NHSS detailed in the Scope of Registration. The logo shall only be used and applied in the manner detailed in any conditions of use which may be published from time to time.

6. National Highway Sector Schemes Schedule of Suppliers.

6.1. CBs shall monitor the NHSS Schedule of Suppliers posted at www.scheduleofsuppliers.com to ensure equivalence between their clients registered to this NHSS and the listed Organizations.

6.2. CBs shall provide to NHSS Schedule of Suppliers administrator at Lantra Awards details of registered Organizations whose scope of registration against this NHSS has ceased to be applicable within 10 working days of that situation occurring.

6.3. CBs shall audit the Organization to ensure that Lantra Awards have been notified by the Organization of their NHSS registration. (See 4.1(i))

7. Reporting on NHSS Performance.

7.1. Each CB accredited for this NHSS shall provide to the Chairman of the SSAC a summary report which includes as a minimum:

- a) Observations and comments on the implementation and assessment findings related to the NHSS including any omissions or deficiencies in its scope.
- b) recommendations for improving/clarifying the SSD
- c) feedback on deficiencies against contract documentation
- d) a list of Organizations whose scope of registration includes this NHSS for comparison against the Schedule of Suppliers

7.2. The report shall be provided at or in the month before each NHSS Liaison Committee meeting (normally held each May and November), so that it may be considered during the Group Sessions of the Liaison meeting. This is to be issued to the Chairman of the NHSS Liaison Committee and the Chairman of this SSAC.

7.3. CBs shall ensure they are all represented by at least one nominated individual (who will represent all CBs) at SSAC. This does not preclude other CBs from attending, as appropriate.

7.4. CBs shall be represented at the NHSS Liaison Group.

APPENDIX G1: GUIDANCE TO ASSESSORS' AND OTHER AUDITORS' COMPETENCIES REQUIREMENTS FOR NATIONAL HIGHWAY SECTOR SCHEME NO 7 FOR THE APPLICATION OF ROAD MARKING MATERIALS AND ROAD STUDS TO ROAD SURFACES

General Information

The CB group (reporting to the NHSS Liaison Group) has proposed that an e-learning programme for assessors based on the information provided by each SSAC should be made available to third party assessors to enable them to have a fuller appreciation of the particular activities involved in highway construction and maintenance. The information contained in this appendix has been collated by this SSAC to provide CB assessors with the background information that is considered appropriate for carrying out an assessment against BS EN ISO 9001 and these NHSS documents. During the development of the Appendices it was realised that this information would also provide useful guidance for first and second party auditors of the system. It is hoped that it will be possible in the near future for access to the e-learning programme to be available to all assessors and auditors; information on this development will be made available through revision issues of the relevant NHSS document posted on the UKAS web-site.

Requirements

In addition to an assessor/auditor having a general appreciation of the requirements and processes required by BS EN ISO 9001 (latest issue), a CB assessor or internal auditor should be aware of the following when completing an audit.

A Overview of *scheme activity*

The assessor(s) should satisfy themselves that the company has policies and procedures in place to ensure compliance with the specific requirements of this SSD as detailed in the relevant clauses of the document and appropriate interpretation of general requirements in the document.

The following areas require particular assessment and are divided into core areas:

A1 to A4 Assessor's Checklist items specific to NHSS 7

- A1 safe working practices
- A2 operative/supervisor training and qualifications
- A3 maintain equipment
- A4 public protection

A5 to A8 Core competencies expected of an auditor assessing companies to NHSS 7

- A5 environment
- A6 testing/inspection/workmanship
- A7 Health and Safety
- A8 Relevant Material & Industry standards

A1 – Safe Working Practices

The assessor should satisfy themselves that the organisation provides the following:

- correct Personal Protective Equipment suitable for the proposed tasks and that they ensure this is worn by operatives;
- equipment approved (as required) and suitable for intended purpose;
- evidence of the organisation's awareness of relevant H&S legislation as applicable to the registered activity;
- awareness training for all staff to ensure even non operatives are aware of their H&S obligations;
- relevant briefing to ensure that all staff are able to understand their job sheet, risk assessment etc; and understand English;
- appropriate method statements/work procedures and specific risk assessment(s);
- induction card/skills card (as appropriate, including those specified within the SSD);
- procedures to ensure vehicles/loads are inspected and drivers are qualified, where this is a legal requirement (Note: Under specific circumstances drivers of road marking vehicles are exempted from LGV Licensing requirements);
- access to a site visit to provide opportunity for assessment of installation (if possible) and verification of techniques undertaken;
- awareness of current best practice including traffic management measures; and
- records identifying those operatives designated as Lead Operatives and deemed qualified and experienced to undertake a charge hand/ganger/foreman role as identified in the definitions contained in the SSD. Recording of this information should be in the form of that contained in Appendix D of the SSD.

A2 Training and Qualifications

The assessor should ensure that the organisation can demonstrate that operatives either working for the organisation or any sector specific sub contractors retained by the organisation, satisfy the following:

- for experienced operatives - have completed and obtained the specific occupational NVQ, relevant to their area of operation, detailed at paragraph 6.2.2.1 of the NHSS 7 and hold the relevant skills card. Details should be recorded utilising Appendix C4 of this SSD;
- for trainees and new and recent recruits – have registered for the specific occupational NVQ relevant to their area of operation and have been registered to the road marking apprenticeship scheme (within two months of the commencement of employment, with approved training starting within six months of commencement of employment) detailed at paragraph 6.2.2.2 of NHSS 7 and hold the relevant skill card. Details should be recorded utilising Appendix C5 of this SSD;

- for all operational staff – hold a skill card identifying the level of competency obtained (i.e. Experience Worker or Trainee) should be held by all operatives working to this NHSS as required at paragraph 6.2.2.3 of the SSD;
- for all operational staff – have been inducted on relevant specific equipment (by employer) or if appropriate (i.e. under training) is supervised by a competent person; and furthermore have been inducted on site specific H&S issues (daily if necessary);
- for all Supervisory and Management Staff operating at NVQ Level 3 or NVQ Level 4 that they either hold a relevant qualification or are registered to and are undertaking such qualifications as defined in 6.2.2.1 b of the SSD;
- for all staff at or above supervisory level within the organisation - Awareness and understanding of the relevant requirements of this NHSS including the use of Quality Plans; and where appropriate an awareness and understanding of the provisions for implementation of training in NHSS 7; and
- hold the relevant skills card.

A3 Maintenance and Operation of equipment

The assessors should satisfy themselves that the organisation complies with the requirements of the SSD in that they have the policies and procedures in place to ensure:

- all operatives are inducted in the safe and appropriate use of all equipment that they are required to operate;
- the maintenance and calibration of equipment specified in Appendix E of the SSD satisfies the requirements detailed within the Appendix and that this information is accurately and suitably recorded;
- policies and procedures are in place to monitor the safety and efficiency of any or all equipment/vehicles used in the installation of road markings and road studs;
- daily checks are undertaken for safety and operational critical aspects of road marking vehicles; and
- maintenance checklists are available and have been completed on a regular basis.

A4 Public Protection

The assessors should satisfy themselves that the organisation has in place the policies and procedures to ensure that:

- operative/supervisor is aware of need to protect public during installation operations;
- operative/supervisor has been trained to carry out a visual site risk assessment to ensure that the public will not be put at risk during installation/maintenance operations;
- where appropriate operative/supervisor is aware of the Highways Agency Traffic Officer role;

- operatives/supervisors have identification; and
- the Organisation has a complaints procedure in place

(Note: Public in this instance includes personnel employed by the customer/client)

A5 Environment

Auditors should be sufficiently competent to make general observations on the effectiveness of the Organization's provisions in respect of the environment and in particular management of waste and its reduction.

A6 Testing/Inspection/Workmanship

Auditors should be aware of:

- the importance of testing and inspection of the product. In particular auditors should be aware of and have an understanding of the Guidance for Clients contained in Appendix L of this scheme.

A7 Health and Safety

Auditors should be aware of:

- the current Health and Safety Legislation and related legislation, such as CDM regulations, as it applies to this NHSS;
- The RSMA DVD Lining Up for Safety on the Road, which provides a detailed outline of the Health & Safety requirements of the sector.

A8 Relevant Material & Industry Standards

Auditors should have:

- knowledge of the relevant British and European Standards relevant to the materials used in road marking and studding operations and as detailed in Appendices B and L of this SSD, in particular those relating to product conformity, type testing and their requirements; and
- familiarity with the current Specification for Highways Works (Series 1212), Notes for Guidance (NG1212) and the RSMA StanSpec Document.

APPENDIX H: ORGANIZATION APPROVAL

1.0 Organization Acceptance

- 1.1 For work carried out on roads managed by the Highways Agency, Welsh Assembly Government, Transport Scotland and DRD (Northern Ireland), only those Organizations holding a valid Certificate of Registration for work within the scope of this SSD will be accepted as complying with Clause 104 and Appendix A of the Specification for Highway Works.
- 1.2 For work carried out on roads managed by other highway authorities, acceptance of the Organization will depend on the requirements of the contract.

2.0 Guidelines for New Entrants - Requirements

- 2.1 Organizations must have the required experienced and qualified Road Marking Operatives and management who meet the requirements of this NHSS. Organizations will need to demonstrate that their equipment and systems meet the requirements of this NHSS.
- 2.2 Organizations must have applied for registration with a CB that is accredited by UKAS to audit against this NHSS. Organizations will have to demonstrate that they have been audited for office based and site based activities.
- 2.3 In addition to the requirement for the Organization to notify the Secretary of the SSAC, as detailed in paragraph 4.1 of section 4 of this SSD, the Organisation is advised to notify LANTRA Awards (Lantra House, Stoneleigh Park, Coventry, CV8 2LG) of their registration to this NHSS immediately following confirmation from the certification body and thereafter annually. This will allow inclusion of the Organization in the published list of registered Organizations maintained by Lantra Awards. In addition the Organization should provide details of a focal point for the Organization.

3. Trade Associations

3.1 Membership of a trade association is not a requirement of this NHSS, however, the following associations support this Scheme along with the training and competency routes discussed in Appendix C. Their details are included here for information.

Road Safety Markings Association, Unit 35 Corringham Road Industrial Estate,
Gainsborough Lincolnshire DN21 1QB

APPENDIX J1: FEEDBACK

Any observations or complaints relating to this document or the process described herein may either be

a) reported electronically through the Highways Agency's Standards Improvement System (SIS)

or

b) addressed to the SSAC Secretary using the form below

a) Standards Improvement System (SIS)

SIS is implemented through Highways Agency Standard HD34/03 - The Implementation and Use of Standards Improvement System (DMRB Volume 5 Section 3.1 (DMRB 5.3.1)). HD34 was published in November 2003 followed in December 2003 by the launch of SIS.

SIS is the successor to the Quality Control Reporting System (QCRS) - a paper based system, which relied on designers to complete reports and Highways Agency staff to enter them on an old mainframe computer. The difficulty in entering reports and the fact that QCRS was perceived as a means of only recording defects with an emphasis on redress meant that QCRS had fallen into disuse.

The revised system overcomes both of these shortfalls. SIS is simple to use being available to anyone with Internet Access and is aimed at improving standards rather than reporting defects. It also provides a feedback system to the original author to advise him of the actions being taken. (HD 34/03 can be accessed through the Highways Agency web site (<http://www.highways.gov.uk/business/techinfo.htm>) or directly via: <http://www.officialdocuments.co.uk/document/deps/ha/dmr/vol5/section3/hd3403.pdf>)

NOTE: It will be necessary to be authorised to use the system, and in the first instance you are requested to contact the Specifications and Policy Unit

FEEDBACK FORM

THE Sector Scheme Advisory Committee
RSMA
Unit 35 Corringham Road Industrial Estate
Gainsborough
Lincolnshire DN21 1QB

Tel: 01427 610101

Fax: 01427 610106

Problem Identified:

Suggested Action:

Name:

Organization:

Address:

Contact details:

Date:

APPENDIX J2: COMPLAINTS TO CERTIFICATION BODIES

Complaints relating to certification matters in respect of alleged deficiencies in the product provided under this scheme should in the first instance be taken up with the Organization. In the event that the matter cannot be satisfactorily resolved written complaints should be made to the Organization's certification body, detailing the problem identified. Contact addresses may be obtained by following the procedure given in Appendix F.

Problem Identified:

Organization's Details:

Name:

Address:

Complaints

Name:

Organization:

Address:

Date:

Signed:

APPENDIX K: THE INTERPRETATION OF CERTIFICATES ISSUED BY CERTIFICATION BODIES

The Certification Bodies issue a variety of styles of Certificates of Registration, which may or may not include the scope of the registration and the location of premises that are covered by the certificate of registration.

In order for the registration to be valid with respect to this Sector Scheme the scope of registration must include specific reference to the Sector Scheme. A list of work activities appropriate to the Specification for Highway Works is not sufficient to indicate compliance. The words 'National Highway Sector Schemes' must be included along with the scheme number, eg:

[Certification Body Name / Logo]

C E R T I F I C A T E O F R E G I S T R A T I O N

[ORGANIZATION NAME]

[Organization Address]

[Town]

[County]

[Post Code]

[Certification Body Name] issues this certificate to the above named company after assessing the company's quality management system and finding it in compliance with

BS EN ISO 9001:2008 AND NATIONAL HIGHWAY SECTOR SCHEME 7

For the following scope of registration

The application and removal of road marking materials and road studs to road surfaces incorporating the following systems and types:

Thermoplastic Systems

- Hand screed
- Raised rib
- Extrusion
- Spray
- Preformed Markings

Paint Systems

- Spray
- Airless spray
- Extrusion
- Screed

Tape Systems

- Permanent
- Temporary

Road Stud Types

- Inset
- Surface mounted

Certificate Number: *[Certificate Number]*

Issue Date *[date]*

Renewal Date *[date]*

Signature

[Name & Title of Certification Body Official]

[Certification Body standard footer: Name / Logo / UKAS Logo / NHSS Logo]

The figure below shows an example of an Appendix for scope of registration. The italic text in square brackets indicates where specific text would need to be included. Where appropriate the information on location and their respective scopes may be included on the Appendix for scope of registration.

[Certification Body Name / Logo]

APPENDIX

To Certificate Number *[Certificate Number]* Appendix No.*[1]* Page 1 of *[1]*

This Appendix declares the scope of registration of the certificate granted to:

[ORGANIZATION NAME]

[Organization Address]

[Town]

[County]

[Post Code]

Scope of Registration:

National Highway Sector Scheme 7

The application and removal of road marking materials and road studs to road surfaces incorporating the following systems and types:

<i>Depot, Regional Office etc</i>	<i>Applicable Sector Scheme(s)</i>	<i>Scope of Registration</i>
<i>[Depot 1 New road, Newtown]</i>	<i>Sector Scheme 7 for the application and removal of road marking materials and road studs to road surfaces</i>	<i>All road marking systems</i>
<i>[Depot 2 Old Road, Oldtown]</i>	<i>Sector Scheme 7 for the application and removal of road marking materials and road studs to road surfaces</i>	<i>All road stud types</i>

[Certification Body standard footer: Name/ Logo/ UKAS Logo/NHSS Logo etc.]

Certification Bodies (CB) issue Certificates of Registration (CoR) in a variety of styles as suits their particular house style. They may consist of a single CoR containing all the requisite information or the CoR may be a standard certificate with appendices or addendum attached providing the full scope of certification (services) and the location(s) where these services are offered by an Organization. In the latter case, the CoR refers to the relevant appendices or addenda, which form an integral part of the certificate.

A valid NHSS CoR is only issued by a CB accredited by UKAS against the relevant NHSS (See Appendix F of this document) or by a recognised equivalent accreditation body.

As a minimum a valid CoR will contain the following information:

- The scope of registration including specific registration to BS EN ISO 9001:2000 and this NHSS including the scheme title e.g. NHSS 7 for **the Application of Road Marking Materials and Road Studs to Road Surfaces**.
- The identification of each and every location to which the CoR is applicable.
- The services/product offered by the Organization at each location identified on the CoR for NHSS 7 and any applicable categories with associated typical sub-categories where applicable.
- Logos for the NHSS, UKAS (or equivalent) and the CB.
- The name and address(es) of the Organization
- The validity of the certificate (3 years for ISO 9001*, one year for inspection)
- A unique reference number/code
- The signature of a relevant CB official with his name and title

*Note where an Organization has an extension to scope to include for this NHSS, the expiry date of the certificate remains as 3 years after their initial assessment/or triennial assessment and not 3 years after obtaining the extension to their certificate i.e. the validity of the certificate will not be reset following their NHSS assessment.

Categories of services offered are

- *Category 1 (named)*
- *Category 2 (named)*
- *etc*

Sub-categories include

- *Sub-category 1*
- *Sub-category 2*
- *etc*
- Any combination of sub-categories.

(Note: These lists are not exhaustive and the description of the categories and sub-categories may vary.)

The following are example models for the certification.

Figure 1 shows the scope of registration for a generic certificate

Figure 2 shows an example of a generic Appendix.

The italic text in square brackets indicates where specific text would need to be included.

These example models in figures 1 & 2 are for information only and show the information required to be included on any such certificate. They do not imply any specific layout or format nor is it intended to inhibit the house style of Certification Bodies.

Figure 1 Example Model Certificate of Registration.

¹	
2	<i>[Certification Body Name / Logo]</i>
C E R T I F I C A T E O F R E G I S T R A T I O N	
3	<i>ORGANIZATION NAME]</i>
<i>[Organization Address]</i>	
<i>[Town]</i>	
<i>[County]</i>	
<i>[Post Code]</i>	
<i>[Certification Body Name]</i> issues this certificate to the above named company after assessing the company's quality management system and finding it in compliance with	
3.1 BS EN ISO 9001:2000 AND THE FOLLOWING NATIONAL HIGHWAY SECTOR SCHEMES	
For the following scope of registration	
<i>[List of appropriate highways related works].</i>	
National Highways Sector Schemes	
3.1.1.1 <i>[Sector Scheme number and Title]</i>	
3.1.1.2 <i>[Sector Scheme number and Title]</i>	
<i>[Sector Scheme number and Title]</i>	
Certificate Number:	<i>[Certificate Number]</i>
Issue Date	<i>[date]</i>
Renewal Date	<i>[date]</i>
Signature	
<i>[Name & Title of Certification Body Official]</i>	
3.1.2 <i>[Certification Body standard footer: Name / Logo / UKAS Logo/NHSS Logo etc.]</i>	

Figure 2 Example Model Appendix

[Certification Body Name / Logo]

3.1.2.1.1.1.1 APPENDIX

To Certificate Number *[Certificate Number]* Appendix No.*[1]* Page 1 of *[1]*

This Appendix declares the scope of registration of the certificate granted to:

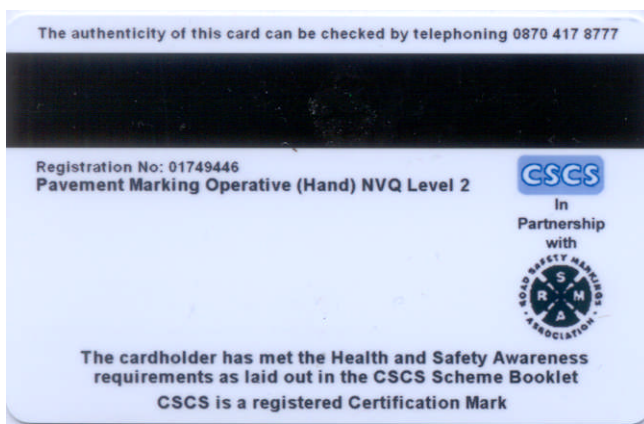
[ORGANIZATION NAME]

[Organization Address]
[Town]
[County]
[Post Code]

3.1.2.1.1.2 Scope of Registration
[List of appropriate highways related activities]
National Highway Sector Schemes
[Sector Scheme Number and Title]
[Sector Scheme Number and Title]
[Sector Scheme Number and Title]

[Certification Body standard footer: Name/ Logo/ UKAS Logo/NHSS Logo etc.]

APPENDIX K1: SAMPLE SKILLS CARD (WHERE RELEVANT)



Apprentices are issued with a card similar to that above only with the word **TRAINEE** printed across in white in a red box across the bottom of the card face.

APPENDIX L: GUIDANCE FOR CLIENTS

Background

It is recommended that Clients acknowledge the requirements of this sector scheme as a contract requirement.

This guidance is primarily of relevance to Clients and their supervisory staff.

Reference should be made to Appendix M before deciding whether to specify that Organizations should be registered to NHSS 12D as registration to other NHSSs may include relevant requirements for the application/installation, maintenance and removal process of road markings. The NHSS for the application/installation, maintenance and removal process of road markings was originally conceived as a document for use by Clients to specify the minimum standards for quality, training and competence of Organizations used by them to carry out the application/installation, maintenance and removal process of road markings.

The implementation of the Sector Scheme and development of training and competency requirements is intended to provide:

- a) A qualified workforce competent at carrying out the application/installation, maintenance and removal process of road markings
- b) Requirements to evaluate risks and develop processes associated with the application/installation, maintenance and removal process of road markings and the production of an associated comprehensive quality plan for each contract.

It is necessary for the Client to ensure that all those involved in carrying out the application/installation, maintenance and removal process of road markings are appropriately trained and skilled, whether or not they are directly employed. The training and assessment of competency schemes described in this SSD are designed to cater for the range of skills within the overall process of the application/installation, maintenance and removal process of road markings.

Clients and Customers that require confirmation of compliance with the Contract Specification in respect of the supply of services, products or materials should confirm that the quality management system certificate issuer is accredited by UKAS or equivalent and that specific reference is made to relevant Sector Schemes on certificates.

For the Sector Scheme to achieve its objectives it is essential that Clients, either directly or via the agents and individuals they employ, ensure that the requirements of this document are complied with. This includes ensuring that sub-contractors employed directly or indirectly, are registered to the Sector Scheme. Supervisory staff must be instructed to carry out spot checks of identification cards.

Lantra Awards have established and manage a schedule of registered companies that have been registered to National Highways Sector Schemes; free access to the schedule is obtained by logging on to the Lantra Awards website www.scheduleofsuppliers.com. However, it should be noted that only those companies that confirm entry onto the schedule to Lantra Awards are listed. The list of all registered suppliers is held by Lantra Awards (if notified); Clients should contact Lantra Awards by email at NHSSscheduleofsuppliers@lantra.co.uk to ascertain/check the status of company if it is not listed on the schedule.

2 Road Death Investigation

Attention is drawn to the ACPO Road Death Investigation Manual, which indicates that in the advent of a collision or other road incident particularly one where there has been a fatality, the police may ask the relevant highway authority to provide information on the state of the road.

In respect of this National Highway Sector Scheme information that is likely to be sought includes the following:

- a) High level general policy statements
- b) Specific local maintenance policies and standards
- c) Authority procedures
- d) Works records including the results of any test carried out
- e) The quality of systems for traffic management
- f) Condition of existing road markings

An Authority may be required to present data to the Police at short notice in case of a fatality on the network. It should ensure that it has, or can obtain, the relevant information from the Contractor.

4.0. GENERAL

4.1 For the Sector Scheme to achieve its objectives it is essential that clients, either directly or via agents and individuals they employ, ensure that the requirements of this document are complied with. This includes ensuring that the road marking companies, employed directly or indirectly as sub-contractors, are registered to the sector scheme, and that all road marking operatives are appropriately trained and skilled.

4.2 Designers should ensure that contractors are supplied with accurate detailed scaled drawings, with designs complying with the current Traffic Signs Regulations and General Direction (TSRGD) and relevant documents detailed in Appendix B of this document. In cases of doubt, regarding the accuracy of the carriageway markings design, the designer or client must be contacted.

4.3 Client's or their agents' supervisory staff should satisfy themselves that operatives involved in the application of road markings and road studs are suitably qualified (see clause 6.2.2.3) and hold CSCS registration cards.

4.4 To ensure that materials are capable of achieving the Client's specification, supervisory staff should check the relevant BSI road trial certificates or other relevant test certificates complying with BS EN 1824. On site, supervisory staff should ensure that all material containers carry an appropriate BSI kite mark symbol.

4.5 Where specified, and in addition to the requirements of Appendix A, supervisory staff should satisfy themselves that the road markings are being laid to the correct application thickness as this affects the durability of the product. (Normally 6 mm maximum height, with exemptions listed in Regulation 32 of the TSRGD.)

5.0 APPLICATION PROCESS

5.1 There are a number of methods employed in the application of road markings which the client's supervisory staff should be aware of, as follows:

- 5.1.1 Spray - the main benefits are speed of application and thin coat application (1.5 mm minimum with thermoplastic material).
- 5.1.2 Extrusion - the advantage of this process is that it gives a precise thickness of application (3 mm minimum with thermoplastic material). The process is particularly suited as the first application of marking on new surfacing, especially if it is an open textured surface.
- 5.1.3 Hand screed - this is the original method of application of thermoplastic material and is used for the application of letters, numerals, symbols, transverse lines and transverse yellow bar markings (2 mm minimum); MMA (cold plastic) can also be screed applied at 1.5mm-2mm thick.
- 5.1.4 Hand cart screed (PRAM) - the hand cart is used for longitudinal and other markings where the use of an extrusion vehicle would be inappropriate. Particular attention in adjustment of the shoe is required prior to work commencing to ensure that the specified thickness is attained (2 mm minimum).
- 5.1.5 Raised rib - a derivative of the extrusion process and is a specialist marking designed to create an audible warning when drivers stray onto it.
- 5.1.6 Embossed - another derivative of the extrusion process which achieves high initial values of retro-reflectivity in both wet and dry conditions whilst maintaining good levels of skid resistance (typically initial dry values can exceed 400 mcd/lux/m² and 200 mcd/lux/m² in the wet, with skid values in excess of 55).
- 5.1.7 Preformed - an adhesive is applied during the manufacturing process and is used in conjunction with a primer which is sprayed onto the road surface.
- 5.1.8 Permanent tapes - these are applied in one of two methods, either by using an adhesive or inlaid into new hot asphalt during the rolling process.

6.0 DIFFERENT MATERIALS

Thermoplastic - heated plastic material, which can be used in a variety of ways.

Paint - predominantly water based paints and with some cases of chlorinated rubber being used on airfields. Paint is renowned for its luminance and affinity to glass beads thus producing high performance markings.

Methyl methacrylate paint (MMA) - this material is renowned for its durability and long life, it also produces good wet night visibility and skid resistance when it is extruded onto the road surface. This system is capable of achieving high levels of initial dry and wet retro-reflectivity, which is comparable with embossed thermoplastic markings.

7.0 SPECIFICATION

7.1 Engineers currently have a wide choice of road markings available, following the introduction of European Standard BS EN 1436 in August 2000 and the withdrawal of BS 3262. The new standard allows specifiers to choose categories of performance classes, to which the road marking must perform over the following two years. Prior to the new standard, road markings in the UK were governed by BS 3262, which was in essence a

'recipe' of components of the thermoplastic, and BS 6044, The Specification for Pavement Marking Paints, which controlled the production of road marking material and its use on the road.

7.2 Clients should therefore ensure that their specifications comply with the new performance standards detailed in the Specification for Highway Works (SHW). Alternatively, a standard specification document for road markings and road studs (STANSPEC) is available from RSMA.

PERFORMANCE CHARACTERISTICS

Visibility by day is achieved by contrast with the road surface, mainly through the use of pigments such as titanium oxide in white material and chromates in yellow material. These are enhanced by the use of high quality resins and clean white aggregate to achieve high luminance values.

Visibility by night relies entirely on retro-reflectivity, by the incorporation of tiny glass beads in the materials. These are added to the product during manufacture and also applied to the line during application as 'surface applied beads' to provide instant retro-reflectivity. The minimum retro-reflectivity value required of a road marking in the UK is 100 mcd/lux/m². On trunk roads the intervention level is 100mcd/m²/lux and the action level has been reduced to 80mcd/m²/lux.

Skid resistance – this can be a function of both the surface texture of the road surface and of the marking material. The thicker the material the lower the influence of the road surface. The minimum skid resistance of a road marking is required to be 45. The skid resistance value (SRT) can be increased by the incorporation of high quality aggregates or by 'surface dressing' at the same time as the glass bead application. It should be noted that large surface areas, such as transverse yellow bar markings, require an increased skid resistance value of 55, complying with BS EN 1436, Table 7, Class S3. However, it should be noted that the incorporation of aggregates to attain high values of skid resistance will adversely affect the retro-reflectivity of 'flat' lines.

Wet night visibility – this can be achieved by the use of profiled, embossed or a combination of large 'surface applied beads' and aggregates, laid directly onto a 'flat' thermoplastic line. Typical wet values in excess of 200 mcd/lux/m² can be achieved, with initial dry values in excess of 400 mcd/lux/m².

TESTING AND INSPECTION

To ensure 'performance' markings are achieving the specification requirements, clients should arrange for random tests to be carried out. Ideally, these tests should be carried out initially and towards the end of the 24 month performance term (say at 18 months). Tests should include for retro-reflectivity, skid resistance, luminance, wear and erosion. The results of any client tests should be made available to the road marking organization for inclusion in their quality documents.

Note:

For thermoplastic systems:

Drop on beads may be added to the surface of a road marking, immediately after application, to provide retro reflectivity. It is possible that some road markings may suffer a drop in retro reflectivity in the period between the loss of the surface

applied beads and the exposure of premixed beads.

(As a consequence of the above, specifiers measuring performance need to be aware of these potential inconsistencies and ensure that sufficient measurements are taken to ensure a valid assessment of performance is achieved.)

For MMA systems

Initial values may be slightly lower until such times as the surface applied beads have been trafficked and the beads exposed.

9.1.1 Initial inspections of road markings should include for:

- 11.5.1 Dimensions (length, gap, width)
- 11.5.2 Thickness
- 11.5.3 Contamination
- 11.5.4 Profile (if appropriate)
- 11.5.5 Workmanship
- 11.5.6 Glass bead application

10. GLASS BEAD APPLICATION

There are four methods of application:

- a) Air assisted
- b) Mechanical metered feeder
- c) Gravity fed
- d) Hand applied

The effectiveness of the reflectorised marking can be assessed visually. The use of a magnifying glass is recommended and loose beads should be brushed off the line before inspection. The two principal areas to check are bead embedment and distribution. It should be noted that the optimum embedment in thermoplastic material is 60%; more than that and the surface applied beads will initially be less effective, and less than 60% will mean a high initial loss of beads from the line.

11.0 REMOVAL

11.1 Hot Compressed Air (HCA) Lance – this equipment works by using hot compressed air to vaporise the marking. A flame is not used and the marking is not burnt off; it is regarded as a mechanical method of removal. The temperatures involved are likely to cause damage to the road surface and for this reason it is inappropriate to use the method on thin bituminous surfacings. Noise, smoke and fumes are also important issues that need to be considered. The HCA lance operates at a relatively high noise level (120 dba) and its appropriateness close to other site operations and urban areas must therefore be assessed. The vaporised thermoplastic can cause clouds of smoke, which will affect drivers' visibility and, although not toxic, may be a health and safety issue.

11.2 Mechanical Scabbling – this method grinds the marking from the surface, but total removal is not possible without damaging the surface. Small amounts of marking are left in the voids of the surface and this has to be masked or removed by other methods. The main use of mechanical scabbling is for the removal of the bulk of the markings and the removal of raised rib line markings that are exceptionally thick. This method produces large amounts of debris that must be cleaned up quickly to avoid the thermoplastic re-adhering to the surface. The equipment is also relatively noisy and

operates at 90 dba but can peak at 104 dba.

- 11.3 Forced Air Abrasive (Shot Blasting) – Abrasive particles are projected by ‘high pressure’ air at the road marking. The particles abrade the road marking from the road surface. This method leaves very little scarring as heat is not generated during the process but some polishing of the aggregate is likely. Total removal of road markings from porous/thin layer surfaces can only be done with this process. The equipment is relatively noisy and operates at 105 dba. If this method is specified, the time factor must be considered, because removal of road markings may be slow if ‘low pressure’ systems are used (optimum performance is achieved with a 250 cfm compressor). Consideration must be given to the environmental effects of the discarded abrasive material used during the process, especially close to watercourses. Captive shot blasting can be considered but the binder that is recycled with the abrasive material tends to clog the machinery.
- 11.4 Mechanical/hand Chipping – this method is only suitable for removing temporary studs and tape.
- 11.5.1 New Developments – ‘Hydro blaster’ is the latest technology in road marking removal. Road markings are removed from the road surface with water directed through jets in a rotating head at up to 40,000 psi without causing any rutting, overheating or displacement of bitumen from the surface. The equipment embraces all the advantages of captive hydrology combined with a vacuum recovery system and a versatile ‘buggy’ to ensure maximum versatility at road level. There is no debris, dust or fumes, and the system operates at about 90 dba – so it is relatively quiet.

12.0 ROAD STUDS

- 12.1 Following the introduction of BS EN 1463 and withdrawal of BS 873 Part 4, all retro-reflecting road studs must be tested and certificated to particular classes and definitions specified in BS EN 1463 Parts 1 & 2. This supersedes the previous DfT ‘type approval’ system of products, published in SA1. As road studs are no longer ‘approved’, a list of compliant road studs for use in the UK is detailed in SA1/05 contained in MCHW Volume 0 Section 3.
- 12.2 Direction 57 of the Traffic Signs Regulations and General Directions 2002 (TSRGD) specifies the minimum requirements and performance classes of road studs which may be legally used on the public highway in the UK. Studs that fall outside them, eg those with a light source, will require special authorisation from the Secretary of State under Direction 58.
- 12.3 There are many types of permanent and temporary road studs which have been tested to the relevant British/European standards. It is essential therefore that, before Clients specify types of road studs, they consider the type of road surface, traffic type, its density and environmental conditions. To do this they must understand the new standards to ensure the correct performance product codes are specified.
- 12.4 Permanent road studs can be defined under three headings:
- a) Surface bonded non-depressible
 - b) Embedded non-depressible

c) Embedded depressible

12.5 BS EN 1463 – Part 1 (initial performance requirements)

Types of road stud are classified by the following:

By use:

- Permanent - P
- Temporary - T

By reflector:

- Glass - 1
- Plastic - 2
- Plastic with abrasion resistant layer - 3

By design:

- Non-depressible - A
- Depressible - B

By way of example:

The product type description for a temporary non-depressible surface bonded road stud would be T2A; and for a permanent embedded depressible road stud would be P1B.

12.6 Night-time visibility – Class PRP1 (permanent road studs)

Clients should be aware that there are different photometric requirements for both permanent and temporary reflectors used in road studs, ie minimum 'R' values at an entrance angle of 5 degrees as follows:

Permanent Type 1 (Glass)	20 mcd.lux*
Permanent Type 2 (Plastic)	220 mcd.lux*
Permanent Type 3 (Plastic & abrasion resistant)	150 mcd.lux*
Temporary Type 1 (Glass)	13 mcd.lux*
Temporary Type 2 (Plastic)	60 mcd.lux*
Temporary Type 3 (Plastic & abrasion resistant)	40 mcd.lux*

* The 'R' value is multiplied by the appropriate colour factor specified in Table 5 of BS EN 1463 – Part 1

12.7 Dimensions

The height of that part of the road stud designed to be above the road surface shall be as follows:

Class H0:	No preference
Class H1:	Up to 18 mm
Class H2:	More than 18 mm up to 20 mm
Class H3:	More than 20 mm up to 25 mm

Maximum horizontal dimensions:

- Class HD 0: No preference
- Class HD 1: in the direction of travel, length 250 mm. Width 190 mm
- Class HD 2: in the direction of travel, length 320 mm. Width 230 mm

Maximum horizontal dimensions (temporary studs)

- Class HDT 0: No preference
- Class HDT 1: in the direction of travel, length 35 mm. Width 84 mm
- Class HDT 2: in the direction of travel, length 75 mm. Width 90 mm

12.8 Colorimetric requirements (NCR 1) – retro-reflective radiation

The colours of all road studs shall conform to the permitted regions defined in Table 9 of BS EN 1463 – Part 1

13.0 BS EN 1463 – part 2 (road test performance)

13.1 Under this part of the standard, a road trial assessment is undertaken using a sample of 50 road studs. The trial period is 12 months for permanent studs and 4 months for temporary studs. **After this period there is no Pass or Fail,** instead road studs receive classifications on their performance.

13.2.1 Primary assessment

- Class 0 no performance determined
- Class S1 42 and above studs remaining
- Class S2 35 – 41 studs remaining
- Class S3 1 – 34 studs remaining

13.2.2 Night-time visibility

- Class R0 no performance determined
- Class R1 mean R 100% or more of BS EN 1463-1:1997, 5.3.1
- Class R2 mean R 50% to 99% of BS EN 1463-1:1997, 5.3.1
- Class R3 mean R 20% to 49% of BS EN 1463-1:1997, 5.3.1
- Class R4 mean R 1% to 19% of BS EN 1463-1:1997, 5.3.1

13.2.3 Day-time visibility

- Class DV0 no performance determined
- Class DV1 80% or more of the luminance factor of BS EN 1463-1:1997, Table 10
- Class DV2 1% to 79% of the luminance factor of BS EN 1463-1:1997, Table 10

13.2.4 Consequently, the full product description for a depressible embedded road stud authorised for use in the UK would be as follows:

13.2.5 Product Type

- P (Permanent)
- 1. (Glass reflector type)
- B (Depressible)

13.2.6 Performance Classification

- H3 (Height from more than 20 mm to 25 mm)
- HD1 (Horizontal dimension in the direction of travel, length 250mm, width 190 mm)
- PRP1 (Reflective performance as new)
- NCR1 (Any colour of reflected light)

13.2.7 Road Performance Classes

- S1 (Number of road studs at close of test)
- R1 (Reflective performance after road test)

13.2.8 The final code for this product would read:

P1B, H3, HD1, PRP1, NCR1, S1, R1

14.0 Further information may be obtained from Reflective Equipment Manufacturers Association (REMA), who provides detailed information of all road studs supplied by its members, which have been tested and certificated under the relevant British and European Standards.

15.0 Reinstatement of carriageway following removal of inset road stud

The reinstatement of the carriageway following the removal of an inset road stud is best achieved through the use of a mix of filled bitumen and 20mm dry pre coated chippings. Details of this process is available from the RSMA or by visiting www.rsma.co.uk

APPENDIX M: GUIDANCE FOR REGISTERED COMPANIES IN RELATION TO NHSS 12D

- 1 NHSS 12D – Installing, maintaining and removing temporary traffic management on rural and urban roads – was issued in July 2005 and relates directly to all those activities on the highway that are performed in the presence of live traffic. All operatives engaged in such activities, whether they are responsible for setting up the temporary traffic management (TTM) arrangements or simply working within their protection, must be aware of the dangers of working adjacent to live traffic. NHSS 12D sets out training and registration requirements for all those operatives who are involved in the installation, maintenance or removal of TTM, even when these operations are incidental to the actual work being carried out on the highway, such as road marking.
- 2 It is not necessary for NHSS 7 registered companies to extend their scope of registration to include registration to NHSS 12D. However, the training and assessment requirements described in the NHSS 12D document are considered as a minimum.
- 3 The organization must, by carrying out risk assessments, give consideration to the level and number of qualified operatives needed to implement "12D" type TTM measures for the particular activity. Details should be described in quality plans and/or method statements. The "12D" document includes a form (Annex A of Appendix A) to assist with the TTM assessment for most road and traffic conditions. Below is a summary of the "12D" operative training and registration requirements. Further information regarding the training scheme, including registered training centres, can be obtained from Lantra Awards, Lantra House, Stoneleigh Park, Coventry, Warwickshire, CV8 2LG.
- 4 **Moving Works Operatives (MWO)** – must successfully complete the basic half-day training module T1; moving works operations include such activities as road line markings where 'traffic control' is not required.
- 5 **Registered TMOs** – fall into two categories, Lead RTMOs and others (LRTMO or RTMO). RTMOs are required to successfully complete at least training modules T1 and T2; T2 is a half-day classroom session followed by a one day 'training centre' based assessment. TTM covered in T2 includes all forms of traffic control on single carriageway roads, except multi-phase traffic signals. Other training modules, covering dual carriageways (40 mph or less), convoy working, and multi-phase traffic signals, are available and Registration Cards will signify which modules the operative has completed. To achieve LRTMO status a RTMO must successfully complete the two-day training module T6, which covers all the content of modules T1 to T5 plus supervisor_responsibilities.
- 6 It is anticipated that for most operations it will be sufficient for the organization to ensure that one member of the team is registered, either as a LRTMO or RTMO, and has successfully undertaken the relevant training and competency assessment for the type of TTM to be implemented. It is possible for three or less TMOs to work without a RL TMO provided that at least one of them is registered. Temporary traffic management installation on any one site requiring more than three and up to six TMOs must be supervised by a RL TMO.

- 7 **Unregistered Traffic Management Operatives (TMO)** - shall at all times be supervised by a RTMO on a one to one basis. This supervised experience should include practical experience of installing, maintaining and removing traffic management schemes and shall be recorded as part of the training records of an unregistered TMO.
- 8 Where operationally the works are extensive, or are to be carried out on roads other than rural and urban roads, the employment of a specialist TTM contractor to set up and remove TTM measures will need to be considered. This will form part of the organization's and client's risk assessments and be incorporated in the organization's quality plan for carrying out the works.
- 9 For works on motorways and dual carriageways operated by the Highways Agency, it is mandatory for the TTM measures to be installed, maintained and removed by TTM contractors registered to NHSS 12A/B and/or 12C. Other highway authorities operating similar roads in the UK may have similar requirements.
- 10 For work on other roads managed by the HA, it is anticipated that the Agency will require registered 12D contractors to be employed for setting up and dismantling TTM measures.