



National Highways Sector Schemes for Quality Management in Highway Works

2C

For the design, supply installation and repair of
environmental barriers (structural) for Infrastructure
Works

**Published by the Sector Scheme Advisory Committee for
Environmental Barriers (Structural) (SSACEBS)**

DOCUMENT CONTROL

Issue statement.

Issue UKAS 1: April 2004
Issue UKAS 2: November 2005

This sector scheme document (SSD) evolved from SSD2A.

The changes and additions between 1 and 2 are noted below:

Implementation

Introduction

4.1

4.2.4

5.5

7.1

Appendix A, B, C, F, G, K and L

Revisions

Revisions to this document relating to the previous issue are described on this page in general terms. The Sector Scheme Advisory Committee will determine whether the notes for any other particular revision are to be retained for a longer period.

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CONTENTS

	Page No.
COMPOSITION OF SECTOR SCHEME ADVISORY COMMITTEE, AND EXCLUSION OF LIABILITY	4
SELECTION OF CERTIFICATION BODY AND IMPLEMENTATION OF ISSUE UKAS 2	5
INTRODUCTION	6
INTERPRETATION OF BS EN ISO 9001 : 2000	
1.0 SCOPE	8
2.0 NORMATIVE REFERENCE	8
3.0 TERMS AND DEFINITIONS	8
4.0/8.0 QUALITY MANAGEMENT SYSTEM REQUIREMENTS	11
ANNEX 1	19
ANNEX 2	29
APPENDIX A: MODEL REQUIREMENTS FOR QUALITY PLANS	31
APPENDIX B: REFERENCE DOCUMENTS	33
APPENDIX C: TRAINING AND HEALTH & SAFETY	35
APPENDIX D: REGISTRATION OF DESIGNATED LEAD FENCE INSTALLERS	38
APPENDIX E: GUIDANCE FOR THE CONTROL OF MONITORING, AND MEASURING DEVICES	39
APPENDIX F: LIST OF CERTIFICATION BODIES	40
APPENDIX G: THE ROLE OF THE CERTIFICATION BODY AND AUDITOR QUALIFICATIONS	41
APPENDIX H: ORGANIZATION ACCEPTANCE AND GUIDELINES FOR NEW ENTRANTS	43
APPENDIX J1: FEEDBACK	44
APPENDIX J2: COMPLAINTS TO CERTIFICATION BODIES	45
APPENDIX K: INTERPRETATION OF CERTIFICATES ISSUED BY CERTIFICATION BODIES	46
APPENDIX L: GUIDANCE TO CLIENTS	51

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

Composition of Sector Scheme Advisory Committee

BM Trada Certification Limited

BSI

CSS (formerly known as County Surveyors Society)

Environmental Noise Barrier Association (ENBA)

Fencing Contractors Association

Highways Agency

Lantra Awards

Lloyds Register Quality Assurance Limited

National Quality Assurance Limited

Network Rail

SGS UK Ltd

Society of Chief Officers of Transportation in Scotland

Exclusion of liability

The Advisory Committee:

Have and accept no liability whatsoever for any failure of any system or systems assessed under this SSD or for the quality, fitness for purpose, or safety of any product or service which is the subject of assessment;

Do not provide any representation as to any aspect of any such system, product or service, and,

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 only certification bodies accredited by UKAS under the guidance of the Technical Expert appointed by the Sector Schemes Technical Committee are permitted to certificate companies to this scheme, 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.

Implementation of Issue 2

This document takes effect from the date of publication and posting on the UKAS website.

INTRODUCTION

This Sector Scheme Document describes the quality management system requirements for Environmental Barriers (Structural) (EBS), which are to be established and maintained by the Organizations supplying and installing Environmental Barriers products for projects procured by infrastructure providers. It should be read in conjunction with relevant International, European and British Standards, other legislative requirements and reference material applicable. It is important that Main Contractors and Clients, when assessing tenders for the supply and installation of EBS ensure that tenders meet the SSD requirements and are registered to this sector scheme by a Certification Body accredited by UKAS or equivalent.

This SSD encompasses the following:

- Scope, definitions, certification of registration and quality system requirements for companies working in their chosen sector.
- Model requirements for Quality Plans and details of reference material applicable to each sector.
- Design and installation competence requirements.
- An example of an in-house register, which must be maintained by, companies to show their designated lead environmental barriers (structural) installers and designers.
- Details of the role of Certification Bodies and Auditor qualifications.
- Guidelines and requirements for new entrants wishing to work in the sector.
- Observations or complaint forms relating to the SSD or the process described herein for feedback to the committee.

Users of this Sector Scheme shall specify other relevant National Highway Sector Schemes as appropriate to the nature of work being undertaken, e.g. National Highway Sector Scheme No 4 Natural and Conferred Durability of Timber and National Highway Sector Scheme 2B Vehicle Safety Fencing.

Where traffic management is required companies should either employ a National Highway Sector Scheme 12 approved company or where applicable have skilled registered traffic management operatives.

The certification of registration shall include the type, subtype and element of environmental barriers (structural) as appropriate. Please see Appendix K for example.

This SSD is a live document maintained and updated by the SSACEBS which intends to meet two or three times a year to develop it appropriately. The scope of training and competency for fencing installers including EBS installers is determined through the Fencing Industry Group of Lantra SSC which has responsibility for the development of the fencing industry.

A liaison committee oversees all the SSD committees to ensure they operate to a common format.

Any observations or complaints relating to the SSD or the process described herein should be made by completing the feedback forms, see Appendix J.

INTERPRETATION OF BS EN ISO 9001 : 2000

1.0 SCOPE

This SSD describes the management system requirements to be established by Organizations providing design, supply, installation and repair of Environmental Barriers (Structural). The document interprets the requirements of British Standard BS EN ISO 9001 : 2000 and should be read in conjunction with that standard. The SSD is applicable to Organizations carrying out the design and/or supply installation and repair of

- (a) Environmental Barriers (Structural) and
- (b) Vehicle Restraint Systems where attached.

The SSD shall be referenced in the Certification of Registration see Appendix K which shall state the category and level of assessed capability.

Where applicable organizations are also required to be registered to the SSD2B to work on VRS/EBS combined systems.

2.0 NORMATIVE REFERENCE

The following normative documents contain provisions which constitute provisions of BS EN ISO 9001 : 2000:

BS EN ISO 9000 : 2005 Quality Management Systems – Fundamentals and Vocabulary

BS EN ISO 9004 : 2000 Quality Management Systems – Guidelines for Performance Improvements

3.0 TERMS AND DEFINITIONS

For the purpose of this Sector Scheme Document the following definitions shall apply:

Certificate of Registration	A Certificate issued by a UKAS or equivalent accredited certification body certifying that the holder operates a Quality Management System complying with BS EN ISO 9001 : 2000 and with this SSD see Appendix K.
Client	The body for which work is being carried out.
Components	All necessary elements, including fastenings, which separately and together are necessary to create an environmental barriers (structural) as required.
Contract	The agreement between the Organization and the Customer governing the provision of the Works to which this SSD relates.
Contract Supervisor	The person responsible for the supervision of the Environmental Barriers (Structural) installation. The Contract Supervisor could be responsible for a number of contracts and is not always necessarily on site.

Customer	The body engaging the Organization for the purpose of work described in this SSD. This may be the main contractor where the Organization is a sub-contractor.
Designer	The company/person/authority responsible for converting requirements into design output in the form of drawings, calculations, specifications, plans, instructions etc.
Design Development	Set of processes that transform requirements into specified characteristics or into the specification of a product, process or system. (Ref. ISO 9000 : 2005 3.4.4).
Environmental Barriers (Structural) EBS	Environmental barriers (structural) covers all types of constructed environment barriers excluding earth barriers.
Environmental Barriers (Structural) Installer	A person who works under the control of a Lead Environmental Barriers (Structural) Installer and is a skilled EBS Installer/Repairer (see Appendix C).
Environmental Barriers (Structural) Operative	A person who works under the control of a Lead Environmental Barriers and is a competent (not skilled) EBS Operative (see Appendix C).
FISS/CSCS	Fencing Industry Skills Scheme/Construction Skills Certification Scheme – joint national skills card registration scheme.
Infrastructure Provider	Client Organization – see Client.
Lead Environmental Barriers (Structural) Installer	Responsible for the correct supervision of key elements on the barrier installation in accordance with given instructions, is a skilled EBS installer (see Appendix C) and appointed by the company as a designated LEBS Installer/Repairer (see Appendix D). The LEBS Installer is in charge of the gang, reports to the Contracts Supervisor and will always be on the site during the installation process.
LA	Lantra Awards.
NVQ	National Vocational Qualification – a vocational qualification approved by the Qualification Curriculum Authority
Organization	The organization undertaking design and/or supply, installation and repair of environmental barriers (structural).

Quality Plan	The document setting out the specific quality practices, resources and sequence of activities defined in the Contract. (See appendix A).
SHW	The Highways Agency's Manual of Contract Documents for Highway Works Volume 1: The Specification for Highway Works (and any subsequent amendments) published by The Stationery Office (formerly Her Majesty's Stationery Office).
SSAC	Sector Scheme Advisory Committee.
SSD	Sector Scheme Document.
SVQ	Scottish Vocational Qualification
Scheme	The systematic arrangement for incorporating Quality Management into the work described in the contract.
'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 terminology used in ISO 9001 : 2000 and ISO 9004 : 2000'.)
Supply (including that from an external registered source)	To provide [environmental barriers (structural)] in accordance to British Standards, specifications, drawings and other Sector Schemes referred to in the contract.
UKAS	United Kingdom Accreditation Service

4.0 QUALITY MANAGEMENT SYSTEM REQUIREMENTS

Introduction

This document needs to be read in conjunction with the ISO 9001 : 2000 requirements augmented by the following supplementary requirements. Paragraphs numbers in this section reference appropriate paragraphs of BS EN ISO 9001 : 2000. Where 'no specific interpretation' is recorded under a heading this means that it is not considered necessary to provide an interpretation for that clause.

4 Quality Management System

4.1 General Requirements

The organization shall notify Lantra Awards (Lantra House, NAC, Stoneleigh Park, Coventry CV8 2LG) and secretary of the sector scheme of their registration to this scheme immediately following confirmation from the certification body and thereafter annually by provision of the copy of the appropriate certificate. In addition the organization shall provide details of a contact point for the organization. Lantra Awards will make a nominal charge for entry on to the register.

4.2 Documentation Requirements

4.2.1 General

Quality Plans are required for all Works being carried out. When requested, the Organization shall submit a Quality Plan to the Customer for approval by the Customer prior to the commencement of the Works.

4.2.2 Quality Manual

No specific interpretation.

4.2.3 Control of Documents

No specific interpretation.

4.2.4 Control of Records

See point 5 in Appendix A.

5 Management Responsibility

5.1 Management Commitment

No specific interpretation.

5.2 Customer Focus

The Organizations should consider the interests of the Client and the product end users, for example, the general public / travelling public; and shall be mindful of the Client's interaction with the end users.

The Organization's quality policy statement shall include a statement of commitment to this Sector Scheme.

5.3 Quality Policy

No specific interpretation.

5.4 Planning

No specific interpretation.

5.5 Responsibility, Authority and Communication

Management and communication systems shall be maintained to ensure customer requirements are adequately and accurately communicated to staff carrying out the work.

5.5.1 Responsibility and Authority

No specific interpretation.

5.5.2 Management Representative

No specific interpretation.

5.5.3 Internal Communication

No specific interpretation.

5.6 Management Review

5.6.1 General

For the purposes of this Scheme, this shall be at intervals not exceeding six months.

5.6.2 Review Input

No specific interpretation.

5.6.3 Review Output

No specific interpretation.

6 RESOURCE MANAGEMENT

No specific interpretation.

6.2 Human Resources

6.2.1 General

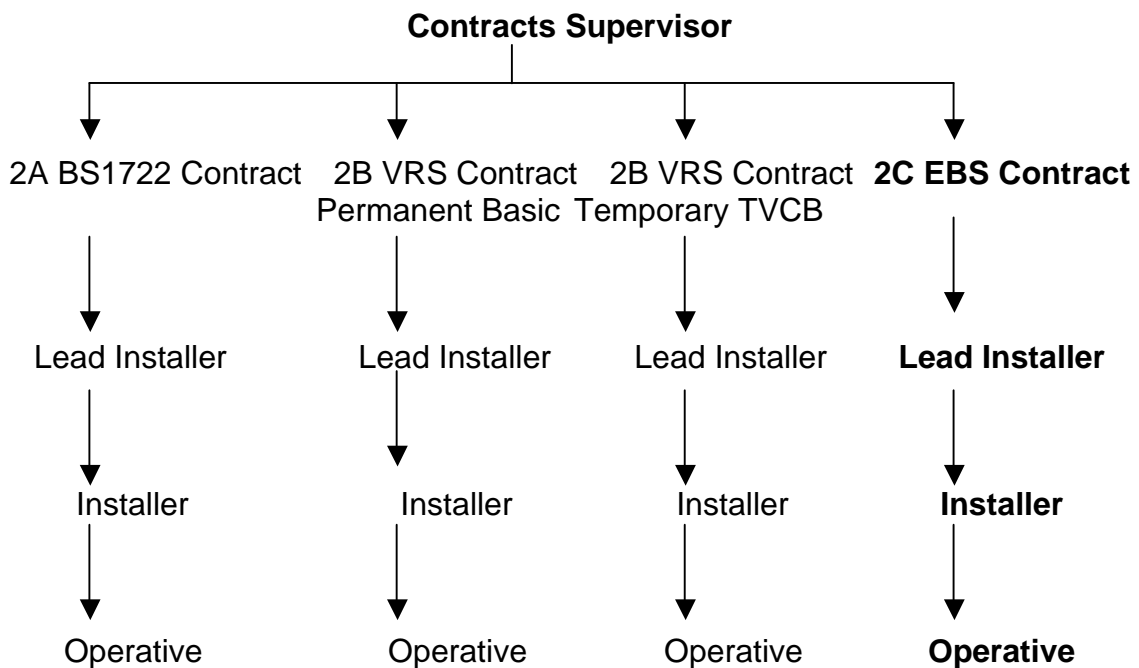
The training and assessment of operatives required by this scheme is aimed primarily at technical competence for the installation of fencing. It is intended to provide awareness to carry out work in a safe manner however it remains the responsibility of the organization to determine and implement safe systems of work.

6.2.2 Competence Awareness and Training

Organizations must meet the scheme requirements and ensure all their installers and team members are registered and working towards relevant qualifications mentioned in the FISS/CSCS registration scheme. A copy of the FISS/CSCS leaflet, which details all the requirements, is available from Lantra Awards. A brief outline of these categories and contact address is detailed in Appendix C.

Structure of the Installation Team for Environmental Barriers (Structural)

Organization flowchart showing an example of a fencing installation team:



6.3 Infrastructure

No specific interpretation.

6.4 Work Environment

No specific interpretation.

7 Product Realization

7.1 Planning of Product Realization

The Planning of product realization shall be recorded in a Quality Plan. The Quality Plan may be a largely standard document as indicated in Appendix A in conjunction with “contract specific” information.

7.2 Customer Related Processes

7.2.1 Determination of Requirements Related to the Product

No specific interpretation.

7.2.2 Review of requirements Related to the Product

No specific interpretation.

7.2.3 Customer Communication

- (i) The Customer needs to be informed about the products, that is, they require detailed information as appropriate regarding materials, components, manufacturing details etc. for the purposes of:

- (a) as-built records for maintenance/health and safety requirements.

- (b) for their own monitoring of the effectiveness/performance of the product.

The Quality Plan shall identify what and when relevant information is passed on to the Customer or their agent.

- (ii) The Organization shall determine and implement arrangements to demonstrate that timber and timber products, where used, come from legal and managed sustainable sources. This shall include provision of third party certification to the Client.

7.3 Design & Development

7.3.1 Design and Development Planning

The Organization shall take note of the relevant requirements of the Reference Documents as scheduled in Appendix B.

The design and development planning processes shall include but not be limited to

- site assessment
- site constraints
- post design
- rail design
- foundation design
- fixings design
- design risk assessments/CDM regulations

7.3.2 Design and Development Inputs

Where the contract prescribes levels of acoustic performance they will be designated in accordance with the ratings as detailed Annex 2.

7.3.3 Design and Development Outputs

No specific interpretation.

7.3.4 Design and Development Review

No specific interpretation.

7.3.5 Design and Development Verification and Validation

7.3.6

The Organization shall identify within the quality plan the verification and validation processes being adopted to ensure compliance with the contract (specification).

The records of the verification and validation processes shall include information to demonstrate compliance with the contract (specification) irrespective of whether the customer expressly requests it or not.

The Organization shall ensure the technical approval process relating to the design is implemented in accordance with the contract requirements.

An example of an Approval in Principle (AIP) form is given in Annex 1.

7.3.7 Control and Design and Development Changes

No specific interpretation.

7.4 Purchasing

7.4.1 Purchasing Process

- (i) Where supply of materials/products is required the materials/products shall be selected in accordance with the contract (specification) documents including compliance with other relevant Sector Schemes (Appendices A and B of the Specification for Highway Works).
- (ii) Where timber is used the purchasing process shall include systems to establish timber sources (that they be procured from legal and managed sustainable sources), species and preservative treatment (that Sector Scheme 4: Natural and Conferred Durability of Timber be used). This shall apply to supplier selection, evaluation and re-evaluation processes.

7.4.2 Purchasing Information

No specific interpretation.

7.4.3 Verification of Purchase Product

No specific interpretation.

7.5 Production and Service Provision

7.5.1 Control of Production and Service Provision

The Organization shall identify and plan the supply and installation processes. Examples of conditions, which shall be controlled, include:

- (a) an agreed procedure for carrying out emergency repairs including health and safety requirements.
- (b) **either**
when the Organization is the main contractor, location and identification of underground and over ground services and structures including vehicle restraint systems together with the names, addresses and telephone numbers of persons responsible for them,
or
when the Organization is a sub-contractor, the taking of all reasonable steps to ensure this information is available from the main contractor and is suitable to the extent that the Organization is satisfied it is safe to carry out the sub-contract works.

The Organization's management shall have a working knowledge of the documents listed in Appendix B that are relevant to the work described in the Contract. Also see Appendix B for client contract specification.

A Lead Environmental Barriers (structural) Installer shall control no more than four Environmental Barriers (structural) Installers at any one time and shall be present on site at all times.

Without prejudice to the above clause, where a specialist sub contractor is employed e.g. piling, the Lead Environmental Barriers (structural) Installer can be replaced with an equally qualified person.

7.5.2 Validation of Processes for Production and Service Provision
No specific interpretation.

7.5.3 Identification and traceability
Where timber is used it shall be controlled and records made to allow for the timber source to be identified. This shall be used to demonstrate that sustainable sources have been used.

7.5.4 Customer Property
Customer supplied product may include the re-use of undamaged components from existing fences as customer instruction.

7.5.5 Preservation of Product
No specific interpretation.

7.6 Control of Inspection, Measuring and Test Equipment

The Organization's system shall include documented procedures to demonstrate the manner and frequency of the calibration of the measuring and test equipment. See Appendix E for guidance.

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
No specific interpretation.

8.2.3 Monitoring and Measurement of Processes
No specific interpretation.

8.2.4 Monitoring and Measurement of Product

Where required in the contract, the organization shall provide an environmental barrier (structural) test report for the environmental barrier (structural) assessed against BSEN1793 and 1794 as appropriate by UKAS accredited testing and/or certification body or equivalent (or where appropriate by a notified body). The acoustic ratings for sound absorption and airborne sound insulation are given in BSEN1793 Part 1 and Part 2 and are reproduced in Annex 2.

The certificate shall be accompanied by full details of the EBS system.

8.3 Control of Non Conforming Products

Any material and /or work not conforming to the specification shall either be reworked to conform to the specification or must formally be accepted in writing by the customer. The materials and/or work shall otherwise be considered as rejected.

8.4 Analysis of Data

No specific interpretation.

8.5 Improvement

No specific interpretation.

Annex 1
Sample of an Approval in Principle

Approval in Principle

Date

Contractor's Address

List of Contents	Page
Chapters and Appendices	
1 Approval In Principle	21
Appendix A: Schedule of Documents Relating to Design of Highway Bridges and Structures	27
Appendix B: Drawings	28

APPROVAL IN PRINCIPLE

Name of Project

Name of Bridge or Structure *Environmental Barriers (Structural).*

Structure Ref. No. *Give carriageway/chainages for barrier.*

1. HIGHWAY DETAILS

1.1 Type of highway

1.2 Permitted traffic speed

1.3 Existing weight restriction/Environmental Restrictions

Existing weight restrictions - Not applicable.

Environmental restrictions - Contractor to complete.

2. SITE DETAILS

2.1 Obstacles crossed

3. PROPOSED STRUCTURE

3.1 Description of structure

3.2 Structural type

3.3 Foundation type

3.4 Span arrangements

3.5 Articulation arrangements

3.6 Road restraint system type

3.7 Proposed arrangements for maintenance and inspection

3.7.1 Traffic management

3.7.2 Access

3.8 Materials and finishes

3.9 Risks and hazards considered

Construction:

Maintenance:

3.10 Estimated cost of proposed structure together with other structural forms considered and the reasons for their rejection including comparative whole life costs with dates of estimates

3.11 Proposed arrangements for construction

3.11.1 Traffic management

3.11.2 Service diversions

3.11.3 Interface with existing structures

4. DESIGN CRITERIA

4.1 Live loading, Headroom

4.1.1 Loading relating to normal traffic under AW regulations and C&U regulations

4.1.2 Loading relating to General Order Traffic under STGO regulations

4.1.3 Footway or footbridge live loading

4.1.4 Loading relating to Special Order Traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross-section

4.1.5 Any special loading not covered above

4.1.6 Heavy or high load route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening

4.1.7 Minimum headroom provided

4.1.8 Authorities consulted and any special conditions required

4.2 List of relevant documents from the TAS

4.2.1 Additional relevant Standards

4.3 Proposed departures from Standards given in 4.2 and 4.2.1

4.4 Proposed methods for dealing with aspects not covered by Standards in

4.2 and 4.

5. STRUCTURAL ANALYSIS

5.1 Methods of analysis proposed for superstructure, substructure and foundations

5.2 Description and diagram of idealised structure to be used for analysis

5.3 Assumptions intended for calculation of structural element stiffness

5.4 Proposed earth pressure coefficients (k_a , k_0 or k_p) to be used in the design of earth retaining elements

6. GEOTECHNICAL CONDITIONS

6.1 Acceptance of recommendations of Section 8 of the Geotechnical Report to be used in the design and reasons for any proposed changes

6.2 Geotechnical Report Highway Structure Summary Information (Form C)

6.3 Differential settlement to be allowed for in the design of the structure

6.4 If the Geotechnical Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations

7. CHECKING

7.1 Proposed Category

Category 1

7.2 If Category 3, name of proposed independent Checker

7.3 Erection proposals or temporary works for which an independent check will be required, listing parts of the structure affected with reasons for recommending an independent check

8. DRAWINGS AND DOCUMENTS

8.1 List of drawings (including numbers) and documents accompanying the submission

9. THE ABOVE IS SUBMITTED FOR ACCEPTANCE

Signed
Name
Design Team Leader
Engineering Qualifications
Fencing Contractor or their designer
Date

10. THE ABOVE IS SUBMITTED FOR ACCEPTANCE

Signed
In the capacity of
Name
Main Contractor
Date

11. THE ABOVE IS AGREED SUBJECT TO THE AMENDMENTS AND CONDITIONS SHOWN BELOW

Signed
Name
Position Held Team Leader (SSR OS TAG)
Engineering Qualifications
TAA
Date

Appendix A: Schedule of Documents Relating to Design of Highway Bridges and Structures

British Standards

Department of Transport Local Government and the Regions (DTLR)

Miscellaneous

The Manual of Contract Documents for Highway Works (MCDHW)

Volume 1: Specification for Highway Works (February 2003)

Volume 2: Notes for Guidance on the Specification for Highway Works (February 2003)

Volume 3: Highway Construction Details (February 2003)

The Design Manual for Roads and Bridges (DMRB)

Bridges and Structures, Advice Notes (BA Series)

Bridges and Structures, Standards (BD Series)

Bridges and Structures, Technical Memoranda (BE Series)

Traffic engineering and Control, Standards (TD Series)

Highways, Advice Notes (HA Series)

Highways, Standards (HD Series)

Appendix B: Drawings

List of Drawings:

Annex 2
EN 1793-1 1997
(normative)

Categorisation of single-number rating

If, in addition to specifying the value of DL_a , there is a need to categorise absorptive performance, then the categories listed in table A.1 shall be used.

Table A.1	
Categories of airborne sound insulation	
Category	DL_R dB
A0	Not determined
A1	< 4
A2	4 to 7
A3	8 to 11
A4	> 11

(informative)

Guidance note on use of the number rating DL_a

The single-number rating DL_a is most directly relevant to characterising absorptive performance in situations where the sound radiating from the traffic stream reflected from absorptive surface and travels directly to the receiver position without further reflections from surfaces or undergoing diffraction over barriers or obstacles. In more complex situation where multiple reflections occur or where sound waves are diffracted, the original spectrum of the traffic noise will be altered so that the low frequency components may be emphasised at the receiver positions. In these latter conditions it is important to consider the performance of absorptive materials as a function of frequency.

Annex 2 cont
EN 1793-2 : 1997

(normative)

Categorisation of single-number rating

If, in addition to specifying the value of DL_R , there is a need to categorise airborne sound insulation, then the categories listed in table A.1 shall be used.

Category	DL_R dB
B0	Not determined
B1	< 15
B2	15 to 24
B3	> 24

(informative)

Guidance note on use of the number rating DL_R

The single-number rating DL_R is most directly relevant to characterising airborne sound insulation in situations where the sound incident on the barrier is received directly from the traffic stream without this sound having undergone reflections from surfaces or having been diffracted from barrier edges or obstacles. In more complex situations, where multiple reflections occur or where sound waves are diffracted, the original spectrum of the traffic noise will be altered so that the low-frequency components may be emphasised at the barrier surface. In these latter situations, it is important to consider the performance of materials as a function of frequency.

APPENDIX A
MODEL REQUIREMENTS FOR QUALITY PLANS

Where appropriate the Quality Plan shall include:

1. Definition of the product/service to be provided.
2. The structure of the Organization describing the chain of command and stating the name(s) of:
 - 2.1 the senior manager responsible for the contracted work;
 - 2.2 the Organization's on-site management representative;
 - 2.3 the Lead Environmental Barriers (structural) Installer(s)
 - 2.4 the Designer, where appropriate
3. Identification of the procedural content of the Organization's Quality Manual relative to the product or service being provided. A copy of this shall be made available to the Customer on request. Special attention shall be given to the inspection and test plan.
4. Control of personnel selection including special requirements for skilled personnel.
5. Contract Specific procedures are required in respect of each installation.
 - 5.1 Where appropriate the following information shall be obtained by the Organization:
 - a) Name and address of Client;
 - b) Address of Site;
 - c) Means of Access;
 - d) Contract Documents;
 - e) Length and location of environmental barriers (structural) and position of gates;
 - f) Details of environmental barriers (structural) to be used, including materials and timber source, species and preservative treatment information;
 - g) Information to be supplied to the Customer/Client including any third party certification;
 - h) Specified sample panels shall be produced for acceptance by the customers;
 - i) Site terrain, subsoil, underground obstructions and voids;
 - j) Location and identification of underground and overground services and structures including vehicle restraint systems;
 - k) Delivery Programme and storage areas for materials;
 - l) Agreed areas of cutting and filling;
 - m) Location of buildings, trees, roads, railways, tramways, vehicle restraint systems and other factors likely to affect environmental barriers (structural) installation;
 - n) other relevant information e.g., foundation design, environmental aspects, other relevant sector scheme compliance, materials/products supplier details, including tracability to control materials as required within the contract.

- 5.2 Where certain aspects of the information described in Clause 5.1 cannot be obtained or is not provided, the fact shall be recorded in writing and a copy given to the Customer.
 - 5.3 The record retention, storage and distribution will be agreed with the customer and where specified with the client and documented in the Quality Plan.
 - 5.4 Where specified fencing components shall be manufactured in accordance with Series 300, 400 and 2500 of the Specification for Highway Works, Interim Requirements Road Restraint Systems and the drawings referred to in the Contract.
-
6. Details of how the organization shall address health and safety issues including risk assessment on a site specific basis.
 7. Procedure for environmental management.
 8. Concrete shall be in compliance with BS8500 Part 1 and EN206-1 and shall have product certification in accordance with Appendix B of the Specification for Highway Works

APPENDIX B
REFERENCE DOCUMENTS

The Organization shall use the Reference Documents and British Standards relevant to the Contract or as otherwise stated

- 1a Standards
- 1a.1 BS 1722 Part 7 wooden post and rail fences
 - 1a.2 BS EN 12839 Precast Concrete Products – Elements for Fencing
 - 1a.3 BSEN 1793 – 1 Road Traffic Noise Reducing Devices – Test Method for determining acoustic performance
 - Part 1 Intrinsic Characteristics of Sound Absorption
 - Part 2 Intrinsic Characteristics of Airborne Sound Insulation
 - Part 3 Normalized Traffic Spectrum
 - BS EN1794 Road Traffic Noise Reducing Devices – non acoustic performance
 - Part 1 Mechanical Performance and Stability Requirements
 - Part 2 General Safety and Environmental Requirements
 - 1a.4 BS8417:2003 Preservation of Timber - Recommendations
- 1b National Highways Sector Scheme No 2B Installation of Vehicle Safety Systems see website www.ukas.com – publications section.
- 1c National Highways Sector Scheme No 4: Natural and Conferred Durability of Timber issued by UKAS see website www.ukas.com – publications section.
- 1d National Highway Sector Scheme No 12A/12B/12C/12D Temporary Traffic Management see website www.ukas.com – publications section.
- 1e Design Manual for Roads and Bridges published by the Stationery Office.
- 1e.1 HA 66 Environmental Barriers : Technical Requirements. (Volume 10, Section 5, Part 2)
 - 1e.2 HA 65 Design Guide For Environmental Barriers (Volume 10, Section 5, Part 1)
 - 1e.3 BD2 Technical Approval of Highways Structures (Vol 1Section 1)
 - 1e.4 IAN24 Use of temporary safety barriers at road works
 - 1e.5 IAN44 Interim Requirements for Road Restraint Systems
- 2a The Manual of Contract Documents for Highway Works:
In particular:
- 2a.1 Volume 1: Specification for Highway Works:
Series 000 Introduction

- Series 100 Preliminaries
- Series 300 Fencing
- Series 400 Safety Fences, Safety Barriers & Pedestrian Guardrails
- Series 600 Earthworks
- Series 1600 Piling
- Series 1700 Structural Concrete
- Series 1800 Structural Steelwork
- Series 1900 Protection of Steelwork against Corrosion
- Series 2400 Brickwork, Blockwork and Stonework
- Series 2500 Special Structures [Clause 2504 Environmental Barriers]
- Appendix A Quality Management Schemes
- 2a.2 Volume 2: Notes for Guidance on the Specification for Highway Works:
 - Series NG300 Fencing
 - Series NG2500 Special Structures
- 2a.3 Volume 3: Highway Construction Details (Fences, Stiles & Gates)
- 3. Railway Infrastructure Specific Documents
 - 3a Network Rail Company Standards
 - 3a.1 RT/CE/C/008 Model Clauses for Specifying Civil Engineering Works (Section 240 – Fencing and Gates)
 - 3a.2 RT/CE/C/030 Lineside Security
 - 3b Railway Infrastructure Standards as prepared by other railway authorities as appropriate
- 4. Contract Specific Documents.
- 5. BS EN ISO 9000 : 2005 Quality Management Systems – Fundamentals and Vocabulary
BS EN ISO 9001 : 2000 Quality Management Systems – Requirements
BS EN ISO 9004 : 2000 Quality Management Systems – Guidelines for Performance Improvement.
- 6. National Building Specification Fencing Section Q40
- 7. BWPDA Guidance Note on the Handling of Treated Wood Waste

APPENDIX C COMPETENCY, TRAINING AND HEALTH AND SAFETY

Training for the installation of Fencing

The approved qualifications are the NVQ/SVQs in Fencing (general) at Level 2 and Fencing level 3.

These qualifications are linked to the joint Fencing Industry Skills Scheme (FISS) and Construction Skills Certification Scheme (CSCS) which is a national register for fence installers. It provides a framework for skill development combined with Health and Safety training. This gives clients assurance that installers have achieved or are working towards a qualification or they have completed the appropriate training.

The FISS/CSCS scheme is split into the following categories.

Green card - This card is for a Fencing Operative who works under the supervision of a Lead Fence Installer. The Fencing Operative will be supervised at all times.

Red card – This card is for a trainee Fence Installer who has registered for and is working towards the NVQ/SVQ in Fencing at level 2 or 3. Red cards expire 3 years from date of issue. Trainee Fence Installers will be supervised by a blue cardholder at all times.

Blue card – This card is for Fence Installers who work under a Lead Fence Installer and who have achieved the NVQ/SVQ in Fencing at level 2. The card is also for Lead Installers who are appointed by their organization and who supervise Fence Installers and Fencing Operatives.

Gold card – This card is for Lead Fence Installers or Fencing Supervisors who have achieved the NVQ/SVQ in Fencing at level 3.

All cardholders must complete the Lantra Awards Health, Safety and Environmental Awareness Course (CLSA34X) and pass the CITB health and safety test and then repeat them every five years in order to maintain their card.

All installers and operatives must hold a FISS/CSCS card stating their registered category.

For more information please contact:

Lantra Awards, Lantra House, NAC, Kenilworth, CV8 2LG

Tel: 024 7641 9703 Fax: 024 7641 1655 Email: awards@lantra.co.uk

2 Health and Safety

Organizations are reminded of the legal requirement to provide health and safety training for each Operative, Installer and Lead Installer in accordance with the Health and Safety at Work etc Act 1974.

The training and assessment of operatives required by this scheme is aimed primarily at technical competence for the installation of environmental barriers. 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.

There is a requirement for all site personnel to carry a CSCS/FISS card as detailed in Table 1.

Table 1

		FISS/CSCS			
		Job Title			
		Fence Operative	Fence Installer	Lead EBS Installer	Fencing Supervisor
CITB H&S Test		#	#	#	#
H&S Course CLSA34X		#	#	#	#
Card Category	Green (no N/SVQ required)	#			
	Red (registered for N/SVQ)		Trainee #		
	Blue (N/SVQ Level)			Experienced #	
	Gold (N/SVQ Level 3)			#	#

Notes:

1. Attend and successfully complete a FISS/CSCS approved training course
2. Successfully complete CITB Health and Safety test
3. Contract Supervisors who are not existing FISS/CSCS card holders will be required to achieve the NVQ/SVQ in fencing level 3
4. EBS Installers who are not existing FISS/CSCS card

- holders will be required to achieve the NVQ/SVQ in fencing level 2
5. Application details for FISS/CSCS cards can be obtained from Lantra Awards.

3. Temporary Traffic Management

Guidance on temporary traffic management is provided in Appendix M in National Highways Sector Scheme 12D. Organizations shall carry out contract specific risk assessments which includes the required level of competency for operatives.

4 Reference Documents

NVQ/SVQ in Fencing (General) –Level 2 and level 3 specifications.

All the above reference documents are available from the Lantra Awards.

APPENDIX D

REGISTER OF DESIGNATED LEAD ENVIRONMENTAL BARRIERS (STRUCTURAL) INSTALLERS

Name of Organization:	
QA Certification Body:	QA Registration Number:

Full name of lead EBS installer	Blue N/SVQ level 2 or industry accreditation (4)	Gold N/SVQ level 3 or industry accreditation (4)	Date of designated by company	Name and signature of authorised manager
				Name Signature
				Name Signature

APPENDIX E
GUIDANCE FOR THE CONTROL OF MONITORING AND MEASURING DEVICES:
BS EN ISO 9001 : 2000 PARAGRAPH 7.6

Equipment Title	Purchase Specification	Calibration Control	Calibration Frequency
Steel Tape	EC Class II	Issue control and function check by user	In Use Check †
Fibre Tape	EC Class III	Issue control and function check by user	In Use Check †
Spirit Level			In Use Check ‡
Cable Avoidance Tools		Service in accordance with manufacturers instructions	In Use Check
Surveying Equipment		Service in accordance with manufacturers instructions	In Use Check

† check to confirm legibility/readability for required dimension.

‡ confirm level reading by reversing the spirit level (daily pre-use check)

APPENDIX F LIST OF CERTIFICATION BODIES

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 2A' 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.

BMTRADA

www.bmtrada.com

BSI

www.bsi-global.com

Lloyd's Register Quality Assurance

www.lrq.com

National Quality Assurance Ltd

www.nqa.com

QA International Certification Ltd

www.qai.co.uk

SGS UK Ltd

www.sgs.co.uk

Copies of this SSD can be obtained from UKAS www.ukas.com – see publications section.

APPENDIX G

THE ROLE OF THE CERTIFICATION BODY AND LEAD AUDITOR OR PRINCIPLE AUDITOR QUALIFICATIONS

Scope

This appendix provides specific requirements relating to the necessary expertise and experience that certification bodies and their evaluation teams shall have in order to operate and administer the scheme in addition to the normal requirements of United Kingdom Accreditation Service (UKAS) for accreditation.

A Qualifications of Certification Body

A1. The Certification Body shall be accredited against the requirements of BS EN45012 by UKAS or an equivalent national accreditation organisation which is a member of the European Cooperation for Accreditation and/or a member of the International Accreditation Forum, Inc to issue certificates for quality systems in accordance with BS EN ISO 9001 : 2000 and this SSD.

A2. The Certification Body must be able to demonstrate to UKAS that it possesses and can maintain the necessary in-house expertise and experience within its organization for the assessment of technical competence of design and/or supply, installation and repair of environmental barriers (structural).

B Evaluation

B1 The Certification Body is responsible for ensuring that the evaluation team, which carries out the audit for the Quality System Certificate, possesses a demonstrable expertise in design and/or supply, installation and repair of environmental barriers (structural). Minimum qualifications for this is that the evaluation team, which may consist of a single individual, shall have the following qualification:

- IRCA Registered Lead Auditor of quality management systems or equivalent.
- knowledge of the design and/or supply, installation and repair of environmental barriers (structural).
- Or) have been on at least three fencing assessments as assistant/trainee assessor/auditor.
- have a minimum of 2 years construction or similar experience.
- have successfully attended an appreciation course (when available).

B2 The Certification Body shall audit the organization to confirm that Lantra Awards (Lantra House, NAC, Stoneleigh Park, Coventry CV8 2LG) and secretary of the sector scheme have been notified of their registration to this scheme immediately following confirmation from the certification body and thereafter annually by provision of the copy of the appropriate certificate. In addition the organization shall provide details of a contact point for the organization. Lantra Awards will make a nominal charge for entry on to the register.

Additionally, certification bodies shall immediately notify Lantra Awards when companies have been de-registered.

- B3 The quality system certificate, which shall include reference to this SSD, will be issued to a model, which conforms to the requirements of UKAS and indicates competence under this SSD. The certificate shall include the type, subtype of environmental barriers (structural) as applicable.
- B4 The Certification Body shall present an annual report to the SSACEBS and the Chair of the Highways Sector Scheme Liaison Committee, which shall provide an evaluation of the system and include as a minimum the following:
- observations on the effectiveness of the current SSD and its scope including any omissions.
 - recommendations for improving and providing clarification of this SSD.
 - feedback on deficiencies of contract documentation in respect of environmental barriers (structural) that may cause problems to the certification body or their client.
- B5 Certification Bodies are reminded of their obligations under the constitution of the certification body club.

APPENDIX H ORGANIZATION ACCEPTANCE AND GUIDELINES FOR NEW ENTRANTS

1) ORGANIZATION ACCEPTANCE

- 1.1 For work carried out on roads managed by the Highways Agency, the National Assembly for Wales, the Scottish Executive Development Department and DRD (Northern Ireland) or their agents, 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 managed by other highway authorities, infrastructure providers or other authorities acceptance of the Organization will depend on the requirements of the Contract.

2) GUIDELINES FOR NEW ENTRANTS

- 2.1 The committee unanimously agreed that it was unnecessary to provide advice other than applying to any relevant UKAS accredited certification bodies who had been accredited to undertake assessments against this Sector Scheme Document.

APPENDIX J1:

FEEDBACK

Any observations or complaints relating to this document or the process described herein should be addressed to the Committee Secretary

2C SSD Environmental Barriers (Structural) Committee
Lantra Awards
Lantra House
NAC
Kenilworth
Warwickshire
CV8 2LG

Tel: 024 76 419 703

Fax: 024 76 411 655

E-mail www.lantra.co.uk/awards

Problem Identified:

Suggested Action:

Name:

Organization:

Address:

Contact details:

Date:

Signature

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 satisfactory resolved written complaints should be made to the Organization's certification body, detailing the problem identified. Contact details are 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.

The full scope of registration may be included on the certificate or in an Appendix, it may be a text list or described as a schedule. Other Appendices or addendum may also be used to list the Organization's premises included in the certification. In order for the registration to be valid with respect to this and other Sector Schemes 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. Where possible the scheme title should also be included, e.g. The National Highway Sector Scheme 2C – for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

Many organizations operate from several locations eg regional offices, service depots etc. It is important that each and every location covered by the certificate of registration is identified by the certification body and included with the certificate as an essential part of the registration process. This may be achieved by the attachment of an addendum or appendix that is referred to on the certificate of registration. The Addendum or Appendix shall include sufficient information that will identify the scope of registration at each location and where applicable the relevant category of work that can be undertaken at that location.

The following are example models for the certification.

Figure 1 shows the scope of registration on the certificate and

Figure 2 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.

Figure 3 shows the scope of a typical NHSS 2C certificate of registration for Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

Figure 4 shows an Appendix to the certificate of registration for Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

Figure 1 Example Model Certificate of Registration.

[CERTIFICATION BODY NAME / LOGOS]

CERTIFICATE OF REGISTRATION

[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 9001:2000 AND THE FOLLOWING NATIONAL HIGHWAY SECTOR SCHEMES

For the following scope of registration
[List of appropriate highways related works].
National Highways Sector Schemes
[Sector Scheme number and Title]

[Sector Scheme number and Title]

[Sector Scheme number and Title]

[(Appendix ... details the full scope of registration and Appendix ... details the locations covered by this registration)]

Certificate Number: *[Certificate Number]*
Issue Date *[date]*
Renewal Date *[date]*

Signature

[Name & Title of Certification Body Official]

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

Figure 2 Example Model Appendix

[Certification Body Name / Logos]
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
[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]

<i>Depot, Regional Office etc</i>	<i>Applicable Sector Scheme(s)</i>	<i>Scope of Registration</i>
<i>[Depot 1]</i>	<i>[Sector Scheme Number and title]</i>	<i>[Detailed scope]</i>
<i>New road, Newtown]</i>	<i>[Sector Scheme Number and title]</i>	<i>[Detailed scope]</i>
<i>[Depot 2 Old Road, Oldtown]</i>	<i>[Sector Scheme Number and title]</i>	<i>[Detailed scope]</i>

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

Figure 3 Example Model Certificate of Registration for Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

[CERTIFICATION BODY NAME / LOGOS]

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 9001:2000 AND NATIONAL HIGHWAY SECTOR SCHEME 2C

For the following scope of registration
Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works
National Highways Sector Schemes
2C– Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

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 etc.]

Figure 4 Example Model Appendix to Certificate of Registration for Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

[Certification Body Name / Logos]

APPENDIX 1

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:

Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works
National Highway Sector Schemes
2C Sector Scheme for The Design and/or Supply, Installation and Repair of Environmental Barriers (Structural) for Infrastructure Works

<i>Depot, Regional Office etc</i>	<i>Applicable Sector Scheme(s)</i>	<i>Scope of Registration</i>
<i>[Depot 1]</i> <i>New road, Newtown]</i>	<i>Sector Scheme 2C for the Installation of Environmental Barriers (Structural)</i>	<i>The design supply and repair of Enviornental Noise Barriers (Structural) National Highway Sector Scheme 2C</i>

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

Appendix L: Guidance to Client

Currently under development