Design Manual for Roads and Bridges

General Principles and Scheme Governance
General information

GG 102
Quality management systems for highway works

(formerly GD 2/16)

Revision 0

Summary
This document gives the requirements in respect of quality management systems for organisations carrying out any or all activities for permanent and temporary works on behalf of the Overseeing Organisation. It provides additional requirements to ISO 9001:2015 for the development and use of project-specific quality management plans.

Application by Overseeing Organisations
Any specific requirements for Overseeing Organisations alternative or supplementary to those given in this document are given in National Application Annexes to this document.

Feedback and Enquiries
Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

This is a controlled document.

Contents

Release notes

Version	Date	Details of amendments
0	May 2019	GG 102 replaces GD 2/16. The full document has been re-written to make it compliant with the new Highways England drafting rules.

Foreword

Publishing information

This document is published by Highways England.

This document is to be read in conjunction with ISO 9000:2015 [Ref 3.N] and BS EN ISO 9001 [Ref 4.N].

This document supersedes GD 2/16, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

The Overseeing Organisation relies on works carried out on its behalf by organisations.

This document gives the requirements for quality management systems applicable to all activities. It provides additional requirements to BS EN ISO 9001 [Ref 4.N] for those involved in the design, construction, maintenance and demolition of highways and highway assets.

Assumptions made in the preparation of the document

The assumptions made in GG 101 [Ref 2.N] apply to this document.

Abbreviations

Abbreviations

Abbreviation	Definition
MLA	Multi-lateral agreement
NAB	National Accreditation Body
NHSS	National Highways Sector Schemes
QMS	Quality Management System
UKAS	United Kingdom Accreditation Service

1. Scope

Aspects covered

1.1 This document shall apply to all organisations carrying out any or all activities associated with permanent and temporary works on behalf of the Overseeing Organisation.

1.2 This document is supplementary to BS EN ISO 9001 [Ref 4.N] and shall be applied in conjunction with that document.

1.2.1 No inference should be made that BS EN ISO 9001 [Ref 4.N] requirements are diluted or deleted because of a particular requirement.

Implementation

1.3 This document shall be implemented forthwith on all schemes on the Overseeing Organisations' motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 2.N].

Use of GG 101

1.4 The requirements contained in GG 101 [Ref 2.N] shall be followed in respect of activities covered by this document.

2. Context

2.1 Sections 4-10 shall be read and applied in association with correspondingly numbered chapters in BS EN ISO 9001 [Ref 4.N].

NOTE *Specific supplementary / additional requirements and guidance are listed in Sections 4-10. The Overseeing Organisation's quality management requirements relating to activities, additional to those in BS EN ISO 9001 [Ref 4.N], are given in Section 3.*

3. Overseeing Organisation requirements

Quality management

3.1 A quality management system (QMS) shall be implemented and operated.

3.2 A quality management system (QMS) shall include third party assessment by bodies accredited in accordance with:

1) ISO/IEC 17021-1:2015 [Ref 1.N] by the UK National Accreditation Body (the United Kingdom Accreditation Service (UKAS));
2) the equivalent European Accreditation Organisation; or
3) be party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum MLA signatory.

3.3 The scope of accreditation of third party assessment bodies shall include any activities undertaken.

3.4 At the initiation stage of the project, a quality plan shall be prepared that is appropriate to the scale and characteristics of the project.

3.5 The quality plan(s) shall be submitted to the Overseeing Organisation at the initiation of a project to enable future audit and inspection.

3.5.1 The quality plan should complement the processes in the QMS.

NOTE *The requirements for processes to be contained in the quality plan can be met by references to processes in organisation's QMS where they exist.*

3.6 The quality plan shall define the resources, processes, products and services to be undertaken to deliver the product.

4. Context of the organization

4.1 No specific particular requirement; the requirements for the context of organization shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

NOTE *The term 'organization' in this document is taken from ISO 9000:2015 [Ref 3.N] and for the purposes of Sections 4 - 10 means 'person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives'.*

Understanding the needs and expectations of interested parties

4.2 The quality plan shall contain:

1) information about interested parties, including relationships, and other contextual information or references to information sources relevant to the project; and
2) processes for updating and communicating information to interested parties and project teams.

4.3 Where not incorporated within the QMS, the quality plan shall include processes to manage and undertake activities in which the requirements for products and services emerge from interactions between multiple interested parties and sources of information.

Determining the scope of the quality management system

4.4 No specific particular requirement; the requirements for determining the scope of the quality management system shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Quality management system and its processes

4.5 Processes incorporated in quality plans shall be reviewed and where required as a result of the review, further developed and improved.

5. Leadership

5.1 No specific particular requirement; the requirements for leadership shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Policy

5.2 No specific particular requirement; the requirements for policy shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Organizational roles, responsibilities and authorities

5.3 The quality plan shall identify all roles and the position of the individual who will fulfil responsibilities defined in BS EN ISO 9001 [Ref 4.N].

6. Planning

Actions to address risks and opportunities

6.1 Risks and opportunities to project specific quality objectives shall be assessed.

6.2 Where risks and opportunities to project specific quality objectives are identified, the sufficiency of processes within the QMS shall be reviewed.

6.3 The quality plan shall include any additional processes necessary to manage risks and capitalise on opportunities.

Quality objectives and planning to achieve them

6.4 No specific particular requirement; the requirements for quality objectives and planning to achieve them shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Planning of changes

6.5 No specific particular requirement; the requirements for planning of changes shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

7. Support

Resources

7.1 The quality plan shall identify key roles and the competencies that are necessary for the delivery of the product / project.

7.1.1 Key roles should include:

1) project managers;
2) technical specialists;
3) lead assessors and inspectors;
4) audit and assurance assessors; and
5) signatories.

7.2 The quality plan shall identify individuals carrying out those key roles that are necessary for the delivery of the product / project.

7.2.1 Individuals for key roles may be sourced from external providers where necessary.

Competence

7.3 The quality plan shall identify the role or position of the individual with the assigned responsibility for assessing technical competency and for assigning competent individuals to project activities.

7.4 Competence shall be managed in accordance with ISO 10018 [Ref 5.N].

7.5 For the purposes of assessing technical competence, the level of competence associated with the product shall be balanced against the risks associated with failure of the product.

7.6 The assessment of staff competence shall include a review of technical capabilities and behaviours to deliver a product that is fit for intended use in accordance with the requirements of the Overseeing Organisation.

7.7 The assessment of staff competence shall include the technical competency requirements of other documents published by and on behalf of the Overseeing Organisation, as well as EU and national legislation.

7.7.1 The assessment of staff competence should include knowledge of other relevant documents and quality schemes such as the National Highways Sector Schemes (NHSS) or equivalent.

Awareness

7.8 No specific particular requirement; the requirements for awareness shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Communication

7.9 No specific particular requirement; the requirements for communication shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

Documented information

7.10 The quality plan shall document the boundaries and applicability of the quality plan.

8. Operation

Operational planning and control

8.1 The quality plan shall detail the operational planning and control processes necessary to deliver the quantity, timing and technical quality of the product/project.

8.2 The quality plan shall include:

1) identification of internal and external stakeholders and engagement points;
2) processes and monitoring performance against resource and competence requirements;
3) taking control action in accordance with criteria [see clause 8.1 BS EN ISO 9001 [Ref 4.N]];
4) managing scope of work, programme and budget;
5) managing change;
6) control of outsourced processes; and
7) project specific exclusions.

8.3 The quality plan shall identify the arrangements for communicating with the Overseeing Organisation on a project specific basis, including details of customer and interested party contacts and communication protocols.

Determination of requirements for products and services

8.4 The quality plan shall set out project specific requirements for products and services.

8.5 The quality plan shall include:

1) requirements for products and services specified by the Overseeing Organisation;
2) other requirements necessary to meet those specified by the Overseeing Organisation;
3) requirements to comply with statute and regulation to the project;
4) requirements that need to be established in detail; and
5) incorporation of relevant Overseeing Organisation management processes.

8.6 The quality plan shall set out project specific arrangements for the review of requirements.

Design and development of products and services

8.7 The quality plan shall set out design and development processes necessary to establish requirements for products and services on projects for which requirements are not stated by interested parties, but are implicit and necessary for the specified or intended use.

8.8 The quality plan shall identify and quantify the involvement of the interested parties including the Overseeing Organisation.

Control of externally provided products and services

8.9 The quality plan shall identify externally provided products and services together with project specific processes for selection and management of providers.

8.10 The quality plan shall include processes for managing and controlling externally provided products and services.

8.11 The quality plan shall set out the project specific operational processes for production and service provision and the control processes to be used.

8.12 The project specific operational processes shall include processes:

1) for measurement criteria and monitoring;
2) for review, verification and validation of output conformity to the product input requirements;

3) for documented information or other evidence that the product has met requirements;
4) for issue, including authorisation, of information and products to the Overseeing Organisation and other interested parties; and
5) to assure competencies of people involved in operation and in validation.

8.12.1 The project specific operational processes should include processes:

1) for validation to be carried out by third parties accredited by the UK National Accreditation Body or equivalent;
2) for use of specific equipment and information; and
3) for review and validation of operational processes.

8.13 The quality plan shall include control processes for externally provided products and services.

8.14 The control processes shall include processes:

1) to ensure identification and traceability of products;
2) to identify changes, and the current revision and status of documents;
3) to identify personnel responsible for preparation, verification and approval of products and services; and
4) for issue, retention and disposal of documented information.

Release of products and services

8.15 No specific particular requirement; the requirements for the release of products and services shall be as stated in ISO 9000:2015 [Ref 3.N] without further qualification.

8.15.1 Unless specified elsewhere in the Overseeing Organisation's technical requirements, the person authorising the release of a product should be the key individual identified as authorised signatory.

Control of nonconforming process outputs, products and services

8.16 The quality plan shall set out project specific processes to control non-conforming products and services and to document corrective action taken.

9. Performance evaluation

Monitoring, measurement, analysis and evaluation

9.1 Quality plans shall set out project-specific processes for undertaking monitoring, measurement, analysis and evaluation.

9.1.1 Quality plans should include:

1) format, schedule and sequence of product reviews;
2) characteristics to be reviewed or verified at each point;
3) responsibilities and competencies of people involved in reviews and verification;
4) reviews or checks to be carried out by third parties accredited by the UK National Accreditation Body or equivalent, or regulatory authorities; and
5) requirements to prepare, report, communicate and retain documentary records of monitoring, measurement, analysis and evaluation.

9.2 The quality plan shall incorporate Overseeing Organisation processes for performance measurement to determine customer satisfaction.

Internal audit

9.3 The project specific audit requirements shall be set out in the quality plan in accordance with needs identified by risk assessment.

9.4 Project-specific audit requirements shall include:

1) the scope and frequency of audits to be undertaken;
2) how the results are to be used to correct and prevent recurrence of non-conformities that affect products and service provision; and
3) an identification of the resources and responsible persons.

Management review

9.5 No specific particular requirement; the requirements for management review shall be as stated in BS EN ISO 9001 [Ref 4.N] without further qualification.

10. Improvement

General

10.1 Quality plans shall identify project specific improvement initiatives, including initiatives sponsored by the Overseeing Organisation, and how they will be managed, resourced and controlled.

Nonconformity and corrective action

10.2 The quality plan shall set out the project specific processes to comply with BS EN ISO 9001 [Ref 4.N].

Continual improvement

10.3 The quality plan shall set out the project specific process for periodic review, update and change of the quality plan.

10.4 The quality plan shall include a process for feeding back the review results to top management and the Overseeing Organisation.

11. Normative References

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	International Organization for Standardization. ISO/IEC 17021-1:2015, 'Conformity assessment. Requirements for bodies providing audit and certification of management systems. Part 1: Requirements'
Ref 2.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
Ref 3.N	International Organization for Standardization. ISO 9000:2015, 'Quality management systems. Fundamentals and vocabulary'
Ref 4.N	ISO International Organization for Standardization and BSI. BS EN ISO 9001, 'Quality management systems. Requirements'
Ref 5.N	International Organization for Standardization. ISO 10018, 'Quality management. Guidelines on people involvement and competence'