

**Al-Adha Engineering for General Contracting and
Engineering Consultation and Commercial Agencies
Limited**

AAE

QA/QC Manual



Head Office Address: Nasiriyah, Dhi Qar, Iraq

Email: info@aae-iraq.com

Website: www.aae-iraq.com

Telephone: +964 780 060 3131 / +964 783 364 7430

AAE-PQ-ANN-06-002 — QA/QC Manual

Issue Date: 2026-07-10

Version: 1.03

Confidentiality: For prequalification, vendor registration, and tendering purposes only.

Contents

1. PURPOSE AND SCOPE	5
1.1 Purpose	5
1.2 Scope	5
1.3 Applicability	5
1.4 Reference Basis	6
2. QUALITY POLICY AND QUALITY OBJECTIVES	6
2.1 Quality Policy	6
2.2 Quality Objectives	7
3. ORGANIZATION, ROLES, AND RESPONSIBILITIES	7
3.1 General	7
3.2 Managing Director	7
3.3 Technical Manager	7
3.4 Quality Control Manager (QCM)	7
3.5 Project Manager	8
3.6 Project Engineers, Supervisors, and Discipline Leads	8
3.7 QA/QC Engineers and Inspectors	8
3.8 Procurement, Stores, and Material Control Personnel	9
3.9 Subcontractors and Suppliers	9
4. QUALITY MANAGEMENT SYSTEM	9
4.1 General	9
4.2 Project Quality Planning	10
4.3 Quality Control Principle	10
5. CONTRACT REVIEW AND PROJECT QUALITY PLANNING	10
5.1 Tender / RFQ Review	10
5.2 Post-Award Contract Review	10
5.3 Project Quality Plan	11
5.4 Technical Review and Changes	11
6. DOCUMENT AND RECORD CONTROL	11
6.1 General	11
6.2 Controlled Documents	11
6.3 Document Issue and Revision	12

6.4 Project Records.....	12
7. PROCUREMENT, VENDOR, AND SUBCONTRACTOR QUALITY CONTROL.....	12
7.1 General	12
7.2 Supplier and Subcontractor Selection	12
7.3 Purchase Requirements	13
7.4 Verification of Purchased Products and Services.....	13
8. MATERIAL CONTROL, IDENTIFICATION, AND TRACEABILITY	13
8.1 Receiving Inspection	13
8.2 Storage and Preservation.....	13
8.3 Identification	13
8.4 Traceability	14
8.5 Client-Supplied Materials.....	14
9. INSPECTION AND TESTING	14
9.1 General	14
9.2 Inspection and Test Plans (ITPs)	14
9.3 Receiving Inspection	14
9.4 In-Process Inspection	15
9.5 Testing	15
9.6 Final Inspection and Completion	15
9.7 Inspection and Test Status	15
9.8 Inspection and Test Records	15
10. CONTROL OF MEASURING AND TEST EQUIPMENT.....	15
10.1 General	15
10.2 Calibration	15
10.3 Out-of-Calibration Equipment	16
10.4 Storage and Handling.....	16
11. CONTROL OF NONCONFORMING WORK.....	16
11.1 General	16
11.2 Identification and Reporting.....	16
11.3 Segregation and Control	16
11.4 Disposition	16
11.5 Re-Inspection.....	16
12. CORRECTIVE ACTION AND PREVENTIVE ACTION	17

12.1 Corrective Action	17
12.2 Preventive Action	17
12.3 Records	17
13. INTERNAL AUDITS AND MANAGEMENT REVIEW	17
13.1 Internal Audits	17
13.2 Follow-Up	17
13.3 Management Review	17
14. TRAINING AND COMPETENCY	18
14.1 General	18
14.2 Identification of Training Needs	18
14.3 Records	18
15. HANDOVER DOCUMENTATION AND AS-BUILT RECORDS	18
15.1 General	18
15.2 Handover Documents	18
15.3 Completeness and Verification	19
16. CONFIDENTIALITY, DISTRIBUTION, AND REVISION CONTROL	19
16.1 Controlled Status	19
16.2 Distribution	19
16.3 Confidentiality	19
16.4 Revision	19

1. PURPOSE AND SCOPE

1.1 Purpose

This QA/QC Manual defines the quality management principles, responsibilities, and control requirements to be applied by **AL-ADHA ENGINEERING FOR GENERAL CONTRACTING AND ENGINEERING CONSULTATION AND COMMERCIAL AGENCIES LIMITED (AAE)** in the planning, execution, inspection, testing, documentation, and handover of its projects.

The purpose of this manual is to ensure that **AAE's** works and services are performed in conformity with:

- contract requirements,
- approved drawings and specifications,
- applicable codes and standards,
- client requirements,
- regulatory requirements,
- and **AAE's** internal quality management requirements.

1.2 Scope

This manual applies to AAE activities related to:

- civil works,
- building construction,
- roads and bridges,
- water treatment and wastewater works,
- steel structures,
- mechanical works,
- piping and utility works,
- selected electrical and electromechanical works,
- engineering consultation and technical support services,
- and project-related procurement, inspection, testing, and documentation.

1.3 Applicability

This manual applies to:

- AAE management,
- project managers,
- QA/QC personnel,

- engineers and supervisors,
- procurement and stores personnel,
- document control personnel,
- subcontractors,
- suppliers, where relevant to project quality requirements.

Project-specific procedures, Inspection and Test Plans (ITPs), checklists, method statements, forms, and inspection records may be issued in support of this manual as controlled project documents.

1.4 Reference Basis

This manual is intended to operate in alignment with:

- ISO 9001:2015 quality management principles,
- project specifications,
- approved procedures and ITPs,
- contract documents,
- applicable client and statutory requirements,
- and recognized engineering and construction standards relevant to the scope of work.

2. QUALITY POLICY AND QUALITY OBJECTIVES

2.1 Quality Policy

AAE is committed to delivering construction, engineering, and installation works in conformity with contract requirements, approved drawings, specifications, applicable codes and standards, and client expectations.

AAE applies a quality-focused management approach to support:

- proper planning before execution,
- disciplined inspection and testing,
- effective control of materials and workmanship,
- accurate documentation and traceability,
- timely identification and correction of deficiencies,
- and continual improvement in project delivery.

Quality is a management responsibility and an operational requirement at every stage of project execution.

2.2 Quality Objectives

AAE's quality objectives include:

- achieving conformity with contractual and technical requirements,
- preventing nonconforming work through planning and control,
- ensuring proper inspection and testing before release of work,
- maintaining complete and accurate quality records,
- improving coordination between engineering, procurement, construction, and QA/QC functions,
- reducing rework, delays, and quality-related claims,
- and strengthening client confidence through disciplined execution and documented compliance.

3. ORGANIZATION, ROLES, AND RESPONSIBILITIES

3.1 General

Quality responsibilities shall be clearly assigned within each project. Authority and accountability for quality shall be defined in a manner that enables effective planning, control, verification, reporting, and correction of deficiencies.

3.2 Managing Director

The Managing Director is responsible for:

- approving the company's quality direction,
- ensuring management commitment to quality,
- supporting the resources necessary for implementation of this manual,
- reviewing significant quality issues where escalation is required,
- and supporting the resolution of major quality-related matters.

3.3 Technical Manager

The Technical Manager is responsible for:

- overseeing technical compliance across projects,
- supporting engineering and quality alignment,
- reviewing major technical and quality issues,
- and ensuring that project technical execution supports contractual and quality requirements.

3.4 Quality Control Manager (QCM)

The QCM is responsible for:

- implementing and maintaining the QA/QC system,
- preparing, reviewing, and updating QA/QC procedures and forms,
- supporting project quality planning,
- monitoring project quality performance,
- reviewing inspection and testing arrangements,
- controlling NCR and corrective action processes,
- conducting or coordinating internal quality audits,
- and reporting significant quality matters to management.

The QCM shall have authority to identify quality problems, require corrective action, and, where necessary, recommend withholding or stopping affected work until quality issues are properly addressed.

3.5 Project Manager

The Project Manager is responsible for:

- ensuring project execution complies with contract requirements,
- implementing the project-specific quality arrangements,
- coordinating with QA/QC, engineering, procurement, and construction teams,
- ensuring inspection and testing requirements are planned and resourced,
- reviewing nonconformities and corrective actions,
- and ensuring quality records and handover documents are completed.

3.6 Project Engineers, Supervisors, and Discipline Leads

Project engineers, supervisors, and discipline leads are responsible for:

- executing work in accordance with approved drawings, specifications, procedures, and method statements,
- ensuring only approved materials are used,
- coordinating required inspections and tests,
- reporting defects, deviations, or quality concerns,
- and supporting corrective and preventive actions.

3.7 QA/QC Engineers and Inspectors

QA/QC personnel are responsible for:

- performing inspections and surveillance,

- witnessing tests as required,
- verifying compliance with approved documents,
- preparing and maintaining inspection records,
- raising nonconformance reports where required,
- monitoring corrective actions,
- and supporting turnover documentation.

3.8 Procurement, Stores, and Material Control Personnel

These personnel are responsible for:

- ensuring purchased materials and services meet specified requirements,
- verifying that materials are correctly received, identified, stored, and issued,
- maintaining material traceability where required,
- and coordinating with QA/QC on material receiving inspection and documentation.

3.9 Subcontractors and Suppliers

All subcontractors and suppliers engaged by AAE shall comply with applicable project quality requirements, approved specifications, drawings, procedures, inspection requirements, and documentation obligations. AAE remains responsible for ensuring effective quality control over subcontracted work and supplied materials.

4. QUALITY MANAGEMENT SYSTEM

4.1 General

AAE shall establish, implement, maintain, and continually improve a documented QA/QC system suitable for its construction and engineering activities.

The QA/QC system shall include:

- this manual,
- project quality plans,
- inspection and test plans,
- method statements,
- checklists and forms,
- material approval and traceability records,
- test and inspection records,
- NCR and corrective action records,

- audit records,
- turnover dossiers and handover records.

4.2 Project Quality Planning

Each project shall be planned so that quality requirements are identified before execution. Project quality planning may include:

- review of contract requirements,
- identification of applicable codes and standards,
- project quality objectives,
- required inspections and tests,
- hold points and witness points,
- document submission requirements,
- material approval requirements,
- and handover documentation requirements.

4.3 Quality Control Principle

No work shall be considered complete for release to the next stage, to the client, or to final handover unless the required inspections, tests, approvals, and records have been completed as applicable.

5. CONTRACT REVIEW AND PROJECT QUALITY PLANNING

5.1 Tender / RFQ Review

Before submission of a proposal, AAE shall review the tender or RFQ requirements to determine:

- technical scope,
- quality requirements,
- inspection and testing obligations,
- required documentation and deliverables,
- client standards and acceptance criteria,
- and AAE's capability to meet the requirements.

5.2 Post-Award Contract Review

Upon award, the Project Manager and relevant project team members shall review the contract and associated documents to confirm:

- scope boundaries,
- drawings and specifications,

- quality requirements,
- testing requirements,
- client approval processes,
- documentation deliverables,
- and key milestones related to quality compliance.

5.3 Project Quality Plan

Where required, a project-specific quality plan shall be prepared. The plan may define:

- quality responsibilities,
- applicable procedures,
- inspection and testing requirements,
- document control arrangements,
- material control process,
- NCR and corrective action procedure,
- turnover documentation requirements,
- and interfaces with the client or third-party inspectors.

5.4 Technical Review and Changes

Technical reviews shall be carried out for drawings, revisions, site instructions, technical queries, and changes affecting quality. Changes to approved documents shall be controlled and communicated to all relevant personnel before implementation.

6. DOCUMENT AND RECORD CONTROL

6.1 General

All documents affecting quality shall be controlled to ensure that only current, approved versions are used.

6.2 Controlled Documents

Controlled documents may include:

- manuals,
- procedures,
- method statements,
- ITPs,
- drawings,

- specifications,
- forms,
- checklists,
- and client-approved submittals.

6.3 Document Issue and Revision

Documents shall be reviewed and approved before issue. Revisions shall be clearly identified. Obsolete documents shall be removed from active use or clearly marked to prevent unintended use.

6.4 Project Records

Project quality records shall be maintained in an orderly manner and shall be legible, identifiable, traceable, and retrievable. Records may include:

- approved drawings and revisions,
- inspection reports,
- material receiving inspection reports,
- test certificates,
- calibration records,
- material approvals,
- NCR and corrective action records,
- client inspection releases,
- turnover files,
- and as-built records.

7. PROCUREMENT, VENDOR, AND SUBCONTRACTOR QUALITY CONTROL

7.1 General

Procurement activities shall ensure that purchased materials, equipment, and services conform to specified project requirements.

7.2 Supplier and Subcontractor Selection

Suppliers and subcontractors shall be evaluated on the basis of:

- technical capability,
- relevant experience,
- quality performance,

- ability to meet specification and documentation requirements,
- and, where relevant, their compliance history.

7.3 Purchase Requirements

Purchase orders and subcontract documents shall clearly define, where applicable:

- item description,
- applicable specifications,
- quality requirements,
- certification requirements,
- inspection requirements,
- documentation requirements,
- and delivery conditions.

7.4 Verification of Purchased Products and Services

AAE may verify purchased materials and services at source, on receipt, or during execution, as applicable. Client verification, when permitted by contract, shall not relieve AAE of its responsibility for quality conformity.

8. MATERIAL CONTROL, IDENTIFICATION, AND TRACEABILITY

8.1 Receiving Inspection

All incoming materials, equipment, and components shall be checked against:

- approved submittals,
- purchase documents,
- specifications,
- quantities,
- condition upon receipt,
- and required certificates or documentation.

8.2 Storage and Preservation

Materials shall be stored and preserved in a manner that prevents damage, deterioration, contamination, or loss of identification. Storage conditions shall suit the nature of the material.

8.3 Identification

Materials and equipment shall be identified in a manner appropriate to the project requirements. Identification may include:

- tags,
- labels,
- heat numbers,
- batch numbers,
- material codes,
- delivery references,
- or approved material logs.

8.4 Traceability

Where traceability is required by contract, specification, code, or project quality plan, material identification shall be maintained through documentation for receipt, storage, issue, installation, and handover.

8.5 Client-Supplied Materials

Client-supplied materials and equipment shall be verified upon receipt, stored appropriately, and reported immediately if damaged, deficient, or unsuitable.

9. INSPECTION AND TESTING

9.1 General

Inspection and testing shall be planned and performed to verify that works and materials conform to specified requirements before release.

9.2 Inspection and Test Plans (ITPs)

Where required, ITPs shall be prepared to define:

- inspection stages,
- responsible parties,
- hold points,
- witness points,
- review points,
- acceptance criteria,
- and required records.

9.3 Receiving Inspection

Incoming materials and equipment shall be inspected before use to verify conformity with approved requirements.

9.4 In-Process Inspection

During construction and installation, inspections shall be performed at appropriate stages to verify:

- dimensions,
- alignment,
- workmanship,
- material use,
- installation methods,
- and compliance with approved drawings and procedures.

9.5 Testing

Required tests shall be performed in accordance with applicable codes, standards, specifications, and approved procedures. Test results shall be recorded and retained.

9.6 Final Inspection and Completion

Before handover or release of completed work, final inspection shall confirm:

- completion of required work,
- closure of punch items where applicable,
- completion of required tests,
- closure of NCRs affecting handover,
- and availability of required quality records.

9.7 Inspection and Test Status

Inspection and test status shall be identifiable by suitable means such as forms, logs, tags, markings, inspection releases, or digital records.

9.8 Inspection and Test Records

Inspection and test records shall be maintained as evidence that specified requirements have been met.

10. CONTROL OF MEASURING AND TEST EQUIPMENT

10.1 General

Inspection, measuring, and test equipment used to verify conformity shall be controlled, calibrated, and maintained to ensure reliable results.

10.2 Calibration

Equipment requiring calibration shall:

- be identified,

- be calibrated at defined intervals,
- have traceable calibration records where applicable,
- and be protected from adjustment or damage that could affect validity.

10.3 Out-of-Calibration Equipment

If equipment is found out of calibration, the validity of previous measurements taken with that equipment shall be assessed, and appropriate action shall be taken.

10.4 Storage and Handling

Measuring and test equipment shall be stored, handled, and maintained in a manner that preserves accuracy and fitness for use.

11. CONTROL OF NONCONFORMING WORK

11.1 General

AAE shall establish and maintain controls to prevent nonconforming work, materials, or services from being inadvertently accepted, concealed, or handed over.

11.2 Identification and Reporting

Nonconforming work shall be identified and documented through the appropriate reporting process, including NCRs where required.

11.3 Segregation and Control

Where practical, nonconforming materials or items shall be segregated or clearly identified to prevent unintended use.

11.4 Disposition

Nonconforming work may be subject to one or more of the following dispositions:

- rework to meet requirements,
- repair subject to approval where required,
- acceptance by concession where contractually permitted,
- alternative use where technically acceptable and approved,
- rejection and replacement.

11.5 Re-Inspection

Repaired or reworked items shall be re-inspected and, where applicable, retested before acceptance.

12. CORRECTIVE ACTION AND PREVENTIVE ACTION

12.1 Corrective Action

AAE shall investigate significant quality problems and determine corrective actions to eliminate the cause of nonconformity and prevent recurrence.

Corrective action may include:

- investigation of root cause,
- revision of procedures,
- additional supervision or inspection,
- retraining,
- supplier or subcontractor action,
- and follow-up verification of effectiveness.

12.2 Preventive Action

AAE shall identify potential quality risks and take preventive actions where appropriate to reduce the likelihood of defects, delays, rework, or documentation failures.

12.3 Records

Corrective and preventive actions shall be documented and tracked to closure.

13. INTERNAL AUDITS AND MANAGEMENT REVIEW

13.1 Internal Audits

Internal quality audits may be conducted to verify:

- compliance with this manual,
- implementation of project QA/QC requirements,
- adequacy of records,
- and effectiveness of quality controls.

Audit findings shall be documented and communicated to the relevant management personnel for action.

13.2 Follow-Up

Audit findings shall be reviewed for corrective action, responsibility assignment, and close-out.

13.3 Management Review

Management shall periodically review the adequacy and effectiveness of the quality system, taking into account:

- audit results,
- recurring NCRs,
- client feedback,
- project quality performance,
- and opportunities for improvement.

14. TRAINING AND COMPETENCY

14.1 General

Personnel performing activities affecting quality shall be competent based on education, training, experience, or demonstrated ability.

14.2 Identification of Training Needs

Training needs shall be identified for relevant personnel, including:

- QA/QC staff,
- inspectors,
- engineers,
- supervisors,
- document control staff,
- and personnel involved in inspection, testing, material control, or turnover documentation.

14.3 Records

Appropriate records of qualifications, training, certifications, and competency shall be maintained as applicable.

15. HANDOVER DOCUMENTATION AND AS-BUILT RECORDS

15.1 General

Project turnover documentation shall be prepared in accordance with contract and client requirements.

15.2 Handover Documents

Handover documentation may include:

- approved as-built drawings,
- inspection and test records,
- material certificates,

- calibration records where relevant,
- NCR close-out records,
- punch list close-out records,
- operation and maintenance information where applicable,
- and manufacturing record dossiers or final quality dossiers where required.

15.3 Completeness and Verification

The Project Manager, supported by QA/QC and document control personnel, shall ensure that turnover documentation is complete, accurate, and submitted in the required format.

16. CONFIDENTIALITY, DISTRIBUTION, AND REVISION CONTROL

16.1 Controlled Status

This manual is a controlled document issued under the AAE management system. Controlled revisions shall be reviewed and approved before issue, and obsolete versions shall be withdrawn from active use.

16.2 Distribution

Controlled copies may be distributed to management, project teams, QA/QC personnel, and other authorized users as required.

16.3 Confidentiality

This manual is intended for controlled business use in connection with prequalification, vendor registration, tendering, and project execution support. It shall not be copied, disclosed, or externally distributed except as authorized.

16.4 Revision

This manual may be revised from time to time to reflect:

- improvements in AAE systems,
- certification or standard requirements,
- organizational changes,
- project experience,
- audit findings,
- and client or regulatory requirements.