

	Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL Chapter: 01 – Yale Design Standard Division: 01 00 00 General Requirements	Section: 01 45 10 Contractor Quality Control – Small Projects
		Date: 11/03/25 (published 2026 04)
		Author: Program Support & Technical Services

SECTION 01 45 10 – Contractor Quality Control - Small Projects

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Construction Drawings, Technical Specifications, Addenda, and general provisions of the Contract, including Contract General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 PAYMENT

- A. Separate payment will not be made for providing and maintaining an effective Quality Control Program

1.3 SUBMITTALS

- A. Owner's Designer of Record approval is required for all submittals
- B. Submit a Contractor Quality Control (CQC) plan

PART 2 - GENERAL REQUIREMENTS

2.1 GENERAL REQUIREMENTS

- A. To ensure the overall success of the construction program, it is essential to establish and maintain an effective Quality Control (QC) system that complies with Owner requirements. This comprehensive system should encompass all construction operations, both onsite and offsite, and be seamlessly coordinated with the proposed construction sequence. Implementing a robust QC system ensures that every phase of construction adheres to the highest standards of quality and meets the specified contract requirements. This proactive management of quality helps protect the Owner's investment, reduces the likelihood of errors and rework, and minimizes costly delays.

By outlining clear plans, procedures, and organizational responsibilities, the QC system ensures smoother project progression and timely completion. This strategic approach not only enhances project efficiency but also ensures stakeholder satisfaction and compliance with regulatory and contract standards. In summary, an effective QC system is vital for safeguarding the quality, efficiency, and integrity of the construction project, ultimately contributing to the overall program's success.

- B. To ensure comprehensive quality control and adherence to critical construction standards, projects must meet specific Definable Features of Work (DFOWs) based on the U.S. Army Corps of Engineers (USACE) Contractor Quality Control program. Minimum DFOW's are defined in the following chart.

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Project Values	DFOWs	Required DFOWs
\$0 - \$950K	3 – 4 Total	Envelope & MEP/F Systems
\$950K – \$4M	5 – 10 Total	MEP/F Systems, Concrete, Masonry, Roofing, Exterior Glass Glazing
\$4M - \$20M	10 – 20 Total	MEP/F Systems, Concrete, Masonry, Roofing, Exterior Glass Glazing

2.2 QUALITY CONTROL (QC) PROGRAM REQUIREMENTS

- A. Establish and maintain a Quality Control (QC) program as described in this section.
- B. The QC program consists of a QC Plan, QC Plan meeting (s), three phases of control, submittal review and approval, testing, completion inspections, QC certifications, independent Special Inspections, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations that comply with the requirements of this Contract.
- C. The QC program may cover onsite and offsite work and be coordinated with the work sequence.

2.3 QUALITY OF THE WORK

- A. Quality of Products: Unless otherwise indicated or specified, all products shall be new, free of defects and fit for the intended use.
- B. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements.
- C. Protection of Existing and Completed Work: Take all measures necessary to preserve and protect existing and completed Work free from damage, deterioration, soiling and staining, until Acceptance by the Owner.
- D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report requirements in preparing, fabricating, erecting, installing, applying, connecting and finishing Work.
- E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.
- F. Verification of Quality: Work shall be subject to verification of quality by Owner or Architect in

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accordance with provisions of the Contract General Conditions.

1. Contractor shall cooperate by making Work available for inspections and observations by Owner's Representative, Architect and their consultants.
 2. Such verification may include mill, plant, shop, or field inspection, as required.
 3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
 4. Provide all information and assistance as necessary, including that from subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by Owner's Representative or Architect.
- G. Observations by Architect and Architect's Consultants: Periodic and occasional observations of Work in progress will be made by Architect and Architect's consultants as deemed necessary to review progress of Work and general conformance with the design intent.
- H. Limitations on Inspection, Test and Observations: Employment of an independent testing and inspection agency and observations by Architect and Architect's consultants shall not relieve Contractor of the obligation to perform Work in full conformance to all requirements of Contract Documents and applicable Building Code and other regulatory requirements.
- I. Rejection of Work: The Owner reserves the right to reject any and all Work not in conformance to the requirements of the Contract Documents.
- J. Correction of Non-Conforming Work: Non-conforming Work shall be modified, replaced, repaired or redone by the Contractor at no change in Contract Sum or Contract Time.

PART 3 - EXECUTION

3.1 MEETINGS

- A. Quality Control plan meeting:
1. Prior to submission of the QC plan, the Contractor shall meet with Owner Representative to discuss the QC plan requirements of this Contract. The purpose of this meeting is to develop a mutual understanding of the plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Feature of Work (DFOW).
- B. Owner / Architect / Contractor (OAC) Meetings
1. Weekly OAC meetings led by the Project manager at the work site with the Owner Representative, Architect and the other personnel as necessary, shall include at minimum, accomplish the following:

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- a. Review the schedule and the status of work and deficiencies / rework. Review the most current approved schedule (In accordance with schedule specifications) and the status of work and deficiencies / rework.
- b. Review the status of submittals and Request for Information (RFI's) impacting DFOWs
- c. Review the DFOW work to be accomplished in the next three (3) weeks.
- d. Review Testing Plan and Log including status of tests performed since last meeting.
- e. Resolve QC and production problems. Discuss status of pending change orders.
- f. Address items that may require revising the QC Plan.
- g. Review Accident Prevention Plan (APP) and effectiveness of the safety program.
- h. Review environmental requirements and procedures.
- i. Review Environmental Management Plan.
- j. Review Waste Management Plan
- k. Review the status of training completion.
- l. Review Commissioning Plan and progress. Review Issues log and resolution.
- m. Review IAQ Management Plan

3.2 CONTRACTOR QUALITY CONTROL (CQC) PLAN:

- A. Submit a Construction Quality Control Plan (CQC) no later than 30 days after receipt of Notice to Proceed (NTP). Work will be permitted to begin only after acceptance of the CQC plan and other Contract requirements or acceptance. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan.

3.3 CONTENT OF CONTRACTOR QUALITY CONTROL (CQC) PLAN:

- A. Provide a CQC Plan, prior to start of construction that includes a table of contents, with major sections identified, pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project. The CQC Plan must at a minimum include the following sections:
 1. Acknowledgement that the Contractor staff will implement the three-phase control system for all aspects of the work specified.
 2. An organizational chart showing the Project personnel with individual names and job titles and lines of authority up to an executive of the company at the home office.
 3. OUTSIDE ORGANIZATIONS: A listing of outside organizations that will be employed by the Contractor and a description of the services these firms will provide.
 4. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, scheduling, and managing submittals, including those of subcontractors, offsite fabricators, and suppliers. Provide the name (s) of the person (s) in the organization authorized to review and certify submittals prior to submission for approval. Provide the initial

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submittal of the submittal register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.

5. TESTING LABORATORY INFORMATION: Testing Laboratory information required by the paragraph ACCREDITATION REQUIREMENTS, as applicable.
6. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, associated feature of work required, referenced by the specification paragraph number requiring the test, the frequency and the person responsible for each test.
7. Procedures to complete construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected. This phase is performed prior to beginning work on each definable feature of
8. Reporting procedures, including proposed reporting formats.
9. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines, or it is work by the same trade in a different environment. A DFOW is by definition any item or activity on the construction schedule, and the schedule specification provides direction regarding how the DFOWs are to be structured. Include in the list of DFOWs for all activities on the Construction Schedule. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. Identify the specification section number and schedule activity ID for each DFOW listed.
10. PROCEDURES FOR PERFORMING AND TRACKING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each Definable Feature of Work (DFOW), a Preparatory and Initial Phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.
11. Coordinate scheduled work with Testing Laboratories Services required by Section 01 45 29. The Contractor must include all inspections required by the Authority Having Jurisdiction (AHJ) and Special Inspector in the Quality Control Plan. The Contractor must perform these inspections using independent qualified inspectors. Include the AHJ and Special Inspections requirements in the QC Plan.
12. PROCEDURES FOR COMPLETION INSPECTION: Procedures for Identifying and documenting the completion inspection process. Include in these procedures the party responsible for punch out inspection, pre-final inspection, and final acceptance inspection.
13. TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating and

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documenting the training of personnel required by the Contract.

14. ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications required for entities such as subcontractors, testing laboratories, suppliers, and personnel. The Contractor will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the Contract that the work is being performed.

3.4 ACCEPTANCE OF THE QUALITY CONTROL (QC) PLAN

- A. Owner’s acceptance of the Contractor QC Plan is required prior to the start of construction. Owner reserves the right to require changes in the QC Plan and operations as necessary to ensure the specified quality of work.

3.5 CONSTRUCTION QUALITY MANAGEMENT TRAINING

- A. In addition to the above experience and education requirements, for projects whose value of work meets or exceeds \$20 million dollars a dedicated QC Manager must be provided who has completed the USACE Construction Quality Management (CQM) for Contractor’s course. If the QC Manager does not have a current certification, obtain the CQM for Contractors course certification within 60 days of Contract award. The Construction Quality Management Training certificate expires after five (5) years. If the QC Manager’s certification has expired, retake the course to remain current.

3.6 NOTIFICATION OF CHANGES

- A. Notify Owner, in writing, of any proposed changes in the QC Plan. Proposed changes are subject to acceptance by Owner.

3.7 SPECIAL INSPECTIONS

- A. Perform all required Special Inspections per Section 01 45 35 SPECIAL INSPECTIONS and the Schedule of Special Inspections.

3.8 COMMISSIONING SUPPORT

- A. The Quality Control requirements outlined in this specification section are key in supporting the objectives of the Commissioning process, specifically coordinating testing, documenting, and verifying proper system operation. Properly executed, the Quality Control support of Commissioning ensures timely execution of necessary tasks to deliver the fully commissioned and operating systems in coordination with the overall construction and project schedule.

Commissioning is in addition to the quality control requirements of this section and not as a substitute for quality control requirements. The Contractor is responsible for carrying out the three phases of control while ensuring the functional performance and integrated systems tests are coordinated with

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the commissioning agent as required for each system to be commissioned

3.9 SUBMITTALS AND DELIVERABLES REVIEW AND APPROVAL

- A. Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES. Procedures must include field verification of relevant dimensions and component characteristics by the Contractor prior to submission for approval.

3.10 THREE PHASES OF CONTROL

- A. CQC enables the Contractor to ensure that the construction, including that of subcontractors and suppliers, complies with the requirements of the Contract. Three phases of control must be conducted by the Contractor to adequately cover both onsite and offsite work for each definable feature of the construction work as follows:

1. PREPARATORY PHASE

- a. Document the results of the preparatory phase actions by separate minutes prepared by the Contractor and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required to meet Contract specifications.
- b. Notify Owner at least two (2) business days in advance of each preparatory phase meeting. The meeting will be conducted by the Contractor and attended by the Project Superintendent and the foreman responsible for the DFO. When the DFO will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. This phase is performed prior to beginning work on each definable feature of work, after all required plans / documents / materials are approved / accepted, and after copies are at the work site. Perform the following prior to beginning work on each DFO:
 - 1) Review each paragraph of the applicable specification sections, reference codes, and standards.
 - 2) Review the Contract drawings.
 - 3) Verify the field measurements are as indicated on construction or shop drawings or both before confirming product orders.
 - 4) Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.
 - 5) Review the testing plan and ensure that provisions have been made to provide the required QC testing.

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- 6) Examine the work area to ensure that the required preliminary work has been completed and complies with the Contract and ensure any deficiencies / rework items in the preliminary work have been corrected.
- 7) Review coordination of Product / material delivery to designated prepared areas to execute the work.
- 8) Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.
- 9) Check to assure that all materials and equipment have been tested, submitted, and approved.
- 10) Discuss specific controls to be used, construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFW. Ensure any portion of the plan requiring separate Owner acceptance has been approved.
- 11) Review Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.
- 12) Review Safety Accident Prevention Plan (APP) and appropriate Activity Hazard Analysis (AHA) to ensure applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted and are on site.

2. INITIAL PHASE

- a. Document the results of the initial phase actions by separate minutes prepared by the Contractor and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required meet Contract specifications.
- b. Notify Owner at least two (2) business days in advance of each initial Phase meeting. When construction crews are ready to start work on a DFW, the Contractor will schedule and conduct the initial phase meeting with the Project Superintendent, the Special Inspector (If applicable) and the foreman responsible for the DFW. Observe the initial segment of the DFW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily Contractor Production & Quality

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Control Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work onsite or when acceptable levels of specified quality are not being met. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases. Perform the following for each DFO:

- 1) Review minutes of the Preparatory Meeting.
- 2) Check work to ensure that it is in full compliance with Contract requirements.
- 3) Verify adequacy of controls to ensure full Contract compliance. Verify required control inspection and testing comply with the Contract.
- 4) Establish level of workmanship and verify that it meets the minimum acceptable workmanship standards. Compare with required Mockups / sample panels as appropriate.
- 5) Resolve any workmanship issues.
- 6) Ensure that testing is performed by the appropriate testing agency / laboratory.
- 7) Check work procedure for compliance with the Accident Prevention Plan (APP) and the appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met.
- 8) Review project specific work plans (Such as HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.

3. FOLLOW-UP PHASE

- a. Perform the following for on-going DFO daily, or more frequently as necessary, until the completion of DFO. The Final Follow-up for any DFO will clearly note in the daily report that the DFO is completed, and all deficiencies / rework items have been completed in accordance with the paragraph DEFICIENCY / REWORK ITEMS LIST. Each DFO that has completed the Initial Phase and has not completed the Final Follow-up must be included on each daily quality control report. If no work was performed on that DFO for the period of that daily report, it must be so noted. Document all Follow-up activities for DFOs in the daily CQC Report:
 - 1) Ensure the work including control testing complies with the Contract requirements until completion of that particular work feature. Record checks in the CQC documentation.
 - 2) Maintain the quality of workmanship required.

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- 3) Ensure the testing is performed by the appropriate party / agency / laboratory.
- 4) Ensure that deficiencies / rework items are being corrected. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work.
- 5) Do not build upon nor conceal non-conforming work.
- 6) Assure manufacturers' representatives have performed necessary inspections if required and perform safety inspections.

3.11 ADDITIONAL PREPARATORY AND INITIAL PHASES

- A. Conduct additional preparatory and initial Phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the onsite production supervision or work crew, if work on a DFOW has not started within 45 days of the initial preparatory meeting or has resumed after 45 days of inactivity, or if other problems develop.

3.12 NOTIFICATION OF THREE PHASES OF CONTROL FOR OFFSITE WORK

- A. Notify Owner at least two (2) weeks prior to the start of the preparatory and initial phases for any offsite work.

3.13 DEFICIENCY / REWORK ITEMS LIST

- A. The Contractor must maintain a list of work that does not comply with the Contract, identifying what items need to be corrected, the activity ID number associated with the item, the date the item was originally discovered, the date the item will be corrected and the date the item was corrected.
- B. The Contractor reviews the list at each weekly OAC Meeting:
 1. There is no requirement to report a deficiency / rework item that is corrected the same day it is discovered.
 2. No successor task may be advanced beyond the preparatory phase meeting until all deficiencies / rework items have been cleared by the Contractor and concurred with by Owner. This must be confirmed as part of the Preparatory Phase activities.
 3. Attach a copy of the "Deficiency / Rework Items List" to the last daily CQC Report of each month.
 4. The Contractor is responsible for including those items identified by Owner.

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5. All deficiencies / rework items must be confirmed as corrected by the Contractor, and concurred by Owner, prior to commencement of any completion inspections per paragraph COMPLETION INSPECTIONS unless specifically exempted by Owner.

3.14 TESTING

- A. Refer to Yale Division 1 standards, specification section 01 45 29 Yale Testing Laboratories Services.
- B. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by Owner, actual test reports are submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to Owner.

END OF SECTION 01 45 10