

SECTION 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, New York City Department of Buildings, Construction Manager, or Authorities Having Jurisdiction are not limited by provisions of this Section.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Sections 02 through ___ (AOR to fill out as per contract requirement) - for specific test and inspection requirements.
- C. Section 01 33 00 - Submittal Procedure
- D. Section 01 43 39 - Mock-up / Sample Installations

1.03 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by the Construction Manager or Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and where:
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by the National Recognized Testing Laboratories (NRTL), an National Voluntary Laboratory Accreditation Program (NVLAP), or a testing agency qualified to conduct product testing and acceptable to Authorities Having Jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor to perform a particular construction operation, including installation, erection, application, and similar operations.
- J. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- K. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of Authorities Having Jurisdiction.

1.04 PROJECT / SITE CONDITIONS

- A. A. Field Measurements: The Contractor shall verify that the field measurements are as indicated on construction and shop drawings before confirming product orders or proceeding with work, to minimize waste due to excessive materials.

1.05 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1.06 CONTRACTOR'S QUALITY CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within ten (10) days of Notice to Proceed, and not less than five (5) days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. The Contractor shall provide qualified inspection specialists as necessary to assure Contract compliance. These specialists shall have a minimum of five (5) years relevant experience. Names and qualifications in Resume format shall be submitted as part of the CQC Plan. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- C. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by Authorities Having Jurisdiction and indicated on the "Statement of Special Inspections."
 - 3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.
- D. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- E. Monitoring and Documentation: Maintain testing and inspection reports including a log of approved and rejected results. Include work that the Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of Authorities Having Jurisdiction.

1.07 REPORTS AND DOCUMENTS

- A. Statement that products at Project site comply with requirements.

- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications testing and inspection reports, manufacturer technical representative field reports, factory authorized service representative reports, releases, jurisdictional settlements, notices, established for compliance with standards and regulations bearing on performance of the Work per the relevant technical specifications in Divisions 2 through 33 of the Contract Specifications.

1.08 QUALITY CONTROL

- A. Authority's Responsibilities: Authority will engage a qualified testing agency to perform these services.
 - 1. Coordinate testing and inspection requests from Contractor.
 - 2. Submission of testing and inspection reports to the Contractor.
 - 3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to the Contractor.
- B. Contractor Responsibilities:
 - 1. Notify NYCHA designated representative at least 72 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 2. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 3. Testing and inspecting requested by the Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 4. Submit additional copies of each written report directly to Authorities
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections.
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid the necessity of removing and replacing construction to accommodate testing and inspecting.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to Owner, Architect, Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.09 SPECIAL TESTS AND INSPECTIONS

A. STATEMENT OF SPECIAL INSPECTIONS

For a list of Special Inspections, see Cover Sheet, see as listed on drawings (A/E has to provide)

- B. 2. Special Inspections required in accordance with Chapter 17 and the applicable Sections of the NYC Construction Code are listed in the table below:

(List by Architect of Record)

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 ACCEPTABLE TESTING AGENCIES

- A. Testing agencies will have prior DOB TR-1 approval.

3.02 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 1. The date the test or inspection was conducted.
 2. Description of the Work tested or inspected with specific location where the work was performed.
 3. The date the test or inspection results were transmitted to the Architect.
 4. Identification of testing agency or special inspector conducting the test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Construction Manager's reference during normal working hours.

3.03 REPAIR AND PROTECTION

- A. General: Upon completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution-"
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION