

## SECTION 01 40 00 QUALITY REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Section Includes
  - 1. Administrative and procedural requirements for quality assurance and quality control.
  - 2. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve any Subcontractor of the responsibility for compliance with the Contract Document requirements.
    - a. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
    - b. Specified tests, inspections, and related actions do not limit Subcontractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
    - c. Requirements for Subcontractor to provide quality-assurance and -control services required by the University or authorities having jurisdiction are not limited by provisions of this Section.
- B. Related Sections:
  - 1. Document 00 72 53 - General Conditions (Design-Build Contract)
  - 2. Divisions 02 through 50 Sections for specific test and inspection requirements.

#### 1.02 REFERENCES

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. The contractual relationship, duties, and responsibilities of the parties in Contract nor those of the Architect shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.
- E. [ASTM International](#) Publications:
  - 1. C802 - Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction.
  - 2. C1021 - Practice for Laboratories Engaged in the Testing of Building Sealants.
  - 3. C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
  - 4. C1093 - Practice for Accreditation of Testing Agencies for Unit Masonry.
  - 5. D290 - Recommended Practice for Bituminous Mixing Plant Inspection.
  - 6. D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

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7. D4561 - Practice for Quality Control Systems for an Inspection and Testing Agency for Bituminous Paving Materials.
8. E329 - Practice for Use in the Evaluation of Inspection and Testing Agencies as Used in Construction.
9. E543 - Practice for Determining the Qualification of Nondestructive Testing Agencies.
10. E699 - Practice for Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM Committee E6.

### 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 University's Representative.
  1. Laboratory: Authorized to operate in State in which Project is located.
  2. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
  3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.
- C. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- E. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- F. Installer/Applicator/Erector: Subcontractor or another entity engaged by Subcontractor as an employee, or Sub-Subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- G. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five (5) previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.04 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  1. Specification Section number and title.

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2. Description of test and inspection.
  3. Identification of applicable standards.
  4. Identification of test and inspection methods.
  5. Number of tests and inspections required.
  6. Time schedule or time span for tests and inspections.
  7. Entity responsible for performing tests and inspections.
  8. Requirements for obtaining samples.
  9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For University's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

#### 1.05 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Testing Agency Accreditation Requirements: Construction materials testing laboratories must be accredited by a laboratory accreditation authority and where required by authorities having jurisdiction, that is acceptable to authorities. The laboratory's scope of accreditation must include the appropriate standards listed in the technical sections of the specifications.
- C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

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## 1.06 QUALITY CONTROL

- A. Ohio University Responsibilities: Refer to the General Conditions.
- B. Tests and inspections not explicitly assigned to the University are the Subcontractor's responsibility.
- C. Testing Agency Responsibilities: Cooperate with the University's Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Design-Builder promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Design-Builder.
  - 3. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 4. Do not perform any duties of University's Contractor.
- D. Subcontractors shall 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. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested.
    - b. To obtain and handle samples at the site or at source of Products to be tested.
    - c. To facilitate tests and inspections.
    - d. To provide storage and curing of test samples.
  - 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. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing.
  - 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.
- E. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
  - 2. Notify laboratory sufficiently in advance of cancellation of required testing operations. Subcontractor shall be responsible to laboratory for changes due to failure to notify if requirements for testing are canceled.
- F. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule to A/E.

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G. Laboratory Responsibilities:

1. Test samples of mixes submitted by Subcontractor.
2. Provide qualified personnel at site. Cooperate with Subcontractor in performance of services.
3. Perform specified inspecting, sampling, and testing of Products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Design-Builder and Subcontractor of observed irregularities or non-conformance of Work or Products.
6. Perform additional inspection and tests required by the Design-Builder, or University's Representative.
7. Attend preconstruction meetings and progress meetings.

H. Limits of Laboratory Authority:

1. The laboratory may not release, revoke, alter, or enlarge the requirements of the contract documents.
2. The laboratory may not approve or accept any portion of the Work.
3. The laboratory may not assume any duties of the Subcontractor.
4. The laboratory has no authority to stop the Work.

I. Laboratory Reports: After each inspection and test, promptly submit copies of laboratory report to the Design-Builder, University's Representative and Subcontractor. Include the following:

1. Date issued
2. Project title and number
3. Name of inspector
4. Date and time of sampling or inspection
5. Identification of product and specifications section
6. Location in the Project
7. Type of inspection or test
8. Date of test
9. Results of tests
10. Conformance with Contract Documents
11. When requested by A/E or University's Representative, provide interpretation of test results

1.07 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and erection as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

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- C. Submit report in duplicate within 15 days of observation to A/E and University's Representative for information.
- D. Test and Inspection Log:
  - 1. Prepare a record of tests and inspections. Include the following:
    - a. Date test or inspection was conducted.
    - b. Description of the Work tested or inspected.
    - c. Date test or inspection results were transmitted to A/E and University's Representative.
    - d. Identification of testing agency or special inspector conducting test or inspection.
  - 2. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for the A/E and the University Representative's reference during normal working hours.

## **PART 2 PRODUCTS**

Not Used

## **PART 3 EXECUTION**

### **3.01 REPAIR AND PROTECTION**

- A. General: On 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. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible, as approved by the A/E.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Subcontractor's responsibility, regardless of the assignment of responsibility for quality-control services.

**END OF SECTION 01 40 00**

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