

SECTION 01400

QUALITY CONTROL

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SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References and standards.
- D. Mock-up. (Vacant.)
- E. Inspecting and testing laboratory services.
- F. Manufacturers' field services.

1.02 RELATED SECTIONS

- A. Section 01090 - Reference Standards.
- B. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- C. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.03 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.04 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.

- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.05 REFERENCES AND STANDARDS

- 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 specified in the individual specification sections, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 MOCK-UP (VACANT)

1.07 TESTING SERVICES (Also refer to Section 01000, Section 1.7, Laboratory Testing Service)

- A. Contractor shall provide and pay for specified services of an independent firm to perform testing. The independent testing firm shall be subject to approval of the Owner. **(SPECIFICATION WRITER TO VERIFY).**
- B. The independent firm will perform tests and other services specified in individual specification sections.
- C. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Owner, Engineer and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Testing does not relieve Contractor to perform Work to contract requirements.
- F. Work Included **(SPECIFICATION WRITER TO VERIFY)**: From time to time during progress of the work, the Owner will require that testing be performed. The purpose of the testing is to determine that materials provided for the work meet the specified requirements. These tests will apply to:

Soil Compaction
Cast-in-Place
Soil and Aggregate Gradations
Pavements
Loam
Soil Composts
Soil Additives

- G. Related work described elsewhere: Requirements for testing are described in various sections of these specifications; where no testing requirements are described but the Owner decides that testing is required, testing will be performed under current pertinent standards for testing.
- H. The Contractor shall pay for all tests except tests not specified. All costs for failed tests shall be paid by the Contractor.
- I. Qualifications of Testing Laboratory: The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329 "Recommended Practice for Inspection and Testing Agencies for Concrete and Steel Used in Construction."
- J. Codes and Standards: Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society of Testing and Materials.
- K. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.
- L. Representatives of the testing laboratory shall have access to the work at all times. Labor and equipment shall be provided at the Contractor's expense in order that the laboratory may properly perform its functions in the field.
- M. Schedules for Testing:
 - 1. Establishing Schedule:
 - a. By advance discussion with the testing laboratory selected by the Contractor and approved by the Owner, determine the time required for the laboratory to perform its tests and issue each of its findings.
 - b. Provide for all time required with the construction schedule.
 - 2. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.
 - 3. Adherence to Schedule: When the testing laboratory is ready to test according to the determined schedule but is prevented from testing or taking specimens due to incompleteness of the work, all extra costs for testing attributable to the delay may be deducted from sums due the Contractor.
- N. Taking Specimens: The Contractor shall furnish qualified personnel and equipment to accomplish the above sampling and/or testing under the Engineer's inspection or may, by advance arrangement, utilize equipment and personnel from the testing laboratory selected by the Owner.

1.08 INSPECTION SERVICES

- A. Owner will appoint, employ, and pay for specified services to perform periodic inspections.
- B. Inspecting does not relieve Contractor to perform Work to contract requirements.

1.09 MANUFACTURERS' FIELD SERVICES

- 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 as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to Section 01300 - Submittals, Manufacturers' Field Reports article.

---END OF SECTION 01400---