

**SECTION 01400**  
**QUALITY CONTROL**

**PART 1 GENERAL**

**1.1 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.

**1.2 TESTS**

- A. Where tests of materials or any portions of the Work are required by Law/Ordinance or public authority, the Contractor shall bear all costs of such tests, shall give timely notice of readiness thereof and shall furnish to the Engineer the required certification of testing or approval.

Tests specified in the Technical Specifications shall fall into four categories:

Those required for approval of materials prior to use, which serves the same purpose as shop drawings or samples;

Those required by law;

Those necessary for acceptance of equipment, or facilities; and,

Those made during the progress of the Work to check compliance with the requirements of the Contract Documents.

The Contractor shall bear all the costs of the tests in the first three categories.

**1.3 RELATED REQUIREMENTS**

- A. Conditions of the Contract: Inspections and testing required by-laws, ordinances, rules, regulations, orders, or approvals of public authorities.
- B. Respective Sections of Specifications: Certification of products
- C. Testing Laboratory inspection, sampling, and testing is required for
  - 1. Section 02221: Trench Excavation, Embedment, and Backfill
  - 2. Section 03300: Concrete Work

#### **1.4 LABORATORY DUTIES**

- A. Cooperate with Engineer and Contractor; provide qualified personnel after due notice
- B. Perform specified inspections, sampling, and testing of materials and methods of construction:
  - 1. Comply with specified standards
  - 2. Ascertain compliance of materials with requirements of Contract Documents
- C. Promptly notify Engineer and Contractor of observed irregularities or deficiencies of work or products.
- D. Promptly submit five copies of the written report of each test and inspection to the Engineer. Each report shall include:
  - 1. Date report issued.
  - 2. Project title and number.
  - 3. Testing laboratory name, address, and telephone number.
  - 4. Name and signature of laboratory inspector.
  - 5. Date and time of sampling or inspection.
  - 6. Record of temperature and weather conditions.
  - 7. Date of the laboratory test.
  - 8. Identification of product and specification section.
  - 9. Location of sample or test in the Project.
  - 10. Type of inspection or test.
  - 11. Results of tests and compliance with Contract Documents.
  - 12. Interpretation of test results, when requested by Engineer.Perform additional tests as required by the Engineer or the Owner.

#### **1.5 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY**

- A. The laboratory is not authorized to:
  - 1. Release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Approve or accept any portion of the Work.
  - 3. Perform any duties of the Contractor.

#### **1.6 CONTRACTOR'S RESPONSIBILITIES**

- A. Cooperate with laboratory personnel, provide access to Work, and to Manufacturer's operations.
- B. Secure and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.
- C. Provide to the Engineer the preliminary design mix proposed to be used for concrete, and other materials and mixes which require control by the testing laboratory.
- D. Furnish copies of Product test reports.

- E. Furnish incidental labor and facilities:
  - 1. To provide access to Work to be tested.
  - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- F. Notify Engineer sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
  - 1. When tests or inspections cannot be performed after such notice, reimburse the Owner for laboratory personnel and travel expenses incurred due to the Contractor's negligence.
- G. Make arrangements with Engineer and pay for additional inspections, sampling and testing required:
  - 1. For the Contractor's convenience.
  - 2. When initial tests indicate Work does not comply with Contract Documents.

#### **1.7 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, test, adjust and balance of equipment and 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.

### **PART 2 PRODUCTS (NOT USED)**

### **PART 3 EXECUTION (NOT USED)**

#### **3.1 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that the existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.

#### **3.2 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Natural subgrades to support structural fill or pavement shall be stripped of organic matter or any unsuitable particles. The exposed subgrade shall be sacrificed just prior to fill placement to a minimum depth of 8-inches and recompact according to Contract Drawings of the maximum density as determined by ASTM D1557 laboratory procedures. The moisture content of the subgrade shall be maintained within 3 percentage points above or below optimum moisture content until permanently covered.
- C. Select structural fill shall be placed in loose lifts not exceeding 8-inches in loose thickness and compacted according to Contract Drawings of maximum density as determined by ASTM D1557 laboratory procedures. The moisture content of the fill shall be maintained

within plus or minus 3 percent of the optimum moisture content until final compaction.

- D. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

#### **PART 4 MEASUREMENT AND PAYMENT**

##### **4.1 MEASUREMENT AND PAYMENT**

- A. No separate measurement and payment shall be made for this item, but it shall be included in the total bid under this Contract.

**END OF SECTION**