

SECTION 01 45 00

QUALITY CONTROL

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Source of materials.
- B. Work quality.
- C. Manufacturer's specifications and instructions.
- D. Specialist applications/installer.
- E. Manufacturer's field services.
- F. Finish tolerances.
- G. Engineer's monitoring.
- H. Engineer's inspections and tests.
- I. Contractor's quality testing.
- J. Test reports.
- K. Quality control audits.
- L. Certificates of compliance.
- M. Special inspections.

1.02 MEASUREMENT AND PAYMENT

- A. Separate measurement or payment will not be made for work required under this Section. All costs in connection with the work specified herein will be considered to be included with the related item of work in the Bid Schedule of the Bid Form, or incidental to the Work.

1.03 SUBMITTALS

- A. General: Refer to Section 01 33 00 - Submittal Procedures, for submittal requirements and procedures.
- B. Within five days after completion of testing performed by or for the contractor, submit test results of such tests to the Engineer. Identify test reports with the information specified for submittals in Section 01 33 00 – Submittal Procedures, and additionally, the name and address of the organization performing the test, and the date of the tests.

1.04 SOURCE OF MATERIALS

- A. In accordance with Section 01 33 23 - Shop Drawings, Product Data, and Samples, the Contractor shall notify the Engineer in writing of the sources from which the Contractor proposes to obtain materials requiring District approval, certification, or testing.

1.05 WORK QUALITY

- A. Shop and field work shall be performed by mechanics, crafts-persons, artisans, and workers skilled and experienced in the fabrication and installations of the work involved. The work shall be performed in accordance with the Contract Documents and the reviewed and accepted Shop Drawings.
- B. Work shall be erected and installed plumb, level, square, and true, or true to indicated angle, and in proper alignment and relationship to the work of other trades. Finished Work shall be free from defects and damage.

1.06 MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS

- A. Unless otherwise indicated or specified, manufactured materials, products, processes, equipment, systems, assemblies, and the like shall be erected, installed, or applied in accordance with the manufacturer's instructions, directions, or specifications. Said erection, installation, or application shall be in accordance with printed instructions furnished by the manufacturer of the material or equipment concerned for use under conditions similar to those at the jobsite.
- B. Any deviation from the manufacturer's printed installation instructions and recommendations shall be explained and acknowledged as correct and appropriate for the circumstances, in writing, by the particular manufacturer. The Contractor will be held responsible for installations contrary to the respective manufacturer's installations and recommendations.

1.07 SPECIALIST APPLICATOR/INSTALLER

- A. Materials, equipment, systems, and assemblies requiring special knowledge and skill for the application or installation of such materials, equipment, systems, or assemblies shall be applied or installed by the specified product manufacturer or its authorized representative or by a skilled and experienced Subcontractor qualified and specializing in the application or installation of the specified product.
- B. The installation Subcontractor shall be approved by the product manufacturer, as applicable.

1.08 MANUFACTURER'S FIELD SERVICES

- A. The Contractor shall have the manufacturer of a product, system, or assembly that requires special knowledge and skill for the proper application or installation of such product, system, or assembly provide appropriate field or job service at no additional cost to the District. The Contractor shall have the manufacturer inspect and approve the application or installation work.

- B. The Contractor shall make all necessary arrangements with the manufacturer of the products to be installed to provide onsite consultation and inspection services to assure the correct application or installation of the product, system, or assembly.
- C. The manufacturer's authorized representative shall be present at the time any phase of this work is started.
- D. The Contractor shall have the manufacturer inspect and approve all surfaces over which, or upon which, the manufacturer's product will be applied or installed.
- E. The Contractor shall have the manufacturer's representative make periodic visits to the site as the work progresses as necessary for consultation and for expediting the work in the most practical manner.

1.09 FINISHED TOLERANCE

- A. Except as specified otherwise in the individual Specifications Sections, Sections, finished tolerances shall conform with the following requirements:
 1. Walls: Finished wall surfaces shall be plumb and shall have a maximum variation of 1/8 inch in 8 feet when a straightedge is laid on the surface in any direction, and no measurable variation in any 2-foot direction.
 2. Ceilings: Finished ceiling surfaces shall present true, level, and plane surfaces, with a maximum variation of 1/8 inch in 8 feet when a straightedge and water level are laid on the surface in any direction, and no measurable variation in any 2-foot direction.
 3. Concrete Floors: Tolerances for concrete floors and pavement are specified in Section 03 35 00 – Concrete Finishing.
 4. Finished Floors: Finished floors shall be level to within plus or minus 1/8 in 10 feet. Where floor drains occur, slope finished floor to the drain at the rate of 1/8 inch per foot or as otherwise indicated on the Contract Drawings.

1.10 ENGINEER'S MONITORING

- A. The Engineer will perform surveillance inspection of the Contractor's on-site construction activities. Surveillance inspection consists of a review, observation, or inspection of Contractor personnel, material, equipment, processes, and test results, performed at random or at selected stages of the construction operations. The purpose of surveillance inspection is to determine if an action has been accomplished or if documents have been prepared in accordance with selected requirements of the Contract Documents.
- B. The Contractor shall provide access to the Work and shall furnish the Engineer reasonable facilities for obtaining such information as may be necessary to be fully informed of the quality and progress of the Work.
- C. Surveillance inspection does not take the place of the Contractor's quality programs or assume any responsibility for such programs or the quality of the Work. The Contractor shall establish its own quality program, perform the required inspections, and provide the necessary

documentation to assure that acceptable quality has been achieved. The Contractor is responsible for specifying and controlling the quality of work performed by its Subcontractors.

1.11 ENGINEER'S INSPECTIONS AND TESTS

- A. The Engineer may perform inspections and tests as necessary to determine the Contractor's compliance with Contract requirements. The Engineer may perform such additional inspections and tests as it deems necessary to verify compliance with Contract requirements.
- B. For inspections and tests by the Engineer, the Engineer will provide the services of a qualified testing laboratory, soils engineer, or inspector, selected and paid for by the District.
- C. The District-employed testing laboratory will supervise the preparation and selection of samples required for testing.
- D. The Contractor shall provide such facilities and assistance as the testing laboratory may require for obtaining the necessary samples.

1.12 CONTRACTOR'S QUALITY CONTROL TESTING

- A. Scope: The Contractor shall perform quality control inspections and tests as necessary to ensure compliance with Contract requirements.
- B. Testing Services:
 - 1. Quality control testing is the testing of materials prior to their delivery from a manufacturer, or during construction, such as soils compaction tests, load tests, concrete tests during placement, concrete strength tests, pipe leakage tests, and such other tests as are specified in the various Sections of the Specifications to ensure compliance with the Contract Documents. The Contractor shall assume full responsibility for quality control testing and shall give sufficient notice to the Engineer to permit the Engineer to witness the tests. Quality control testing shall be at the expense of the Contractor and shall be performed by a Contractor-employed independent testing firm.
- C. Laboratory Tests: All laboratory testing shall be performed by an independent, qualified testing laboratory approved by the Engineer. The selected laboratory shall employ the proper equipment and qualified testing personnel for the testing specified in these Specifications. The Contractor shall obtain the Engineer's approval of the testing equipment and personnel. The Engineer may monitor the operations to ensure that tests are being performing in accordance with approved procedures and in compliance with these Specifications.
- D. Qualification of Laboratory Testing Personnel: Personnel performing laboratory tests shall be qualified for such work by virtue of prior experience and training.
- E. Testing Equipment: Testing equipment shall be in satisfactory operating condition, of adequate capacity and range, and accurately calibrated. Testing equipment shall be calibrated in accordance with national standards which are certified by the National Institute of Standards and Technology. Testing equipment shall be calibrated at the frequency recommended by the equipment manufacturer.

1.13 TEST REPORTS

- A. Test reports shall include the following information:
 - 1. Actual test results compared with the Contract requirements and identification of all non-conforming items.
 - 2. Calibration Certificates.
- B. The Engineer will make available to the Contractor copies of all test reports of tests performed by the Engineer.

1.14 QUALITY CONTROL AUDITS

- A. The Engineer may perform quality control audits of the Contractor's, Subcontractor's, and Supplier's quality records and performance. The Contractor shall ensure that all quality control records and places of work are open and available to the Engineer for inspection. The Engineer will give 30 days notice of intention to audit specific activities or installations.
- B. The Contractor, Subcontractor, or Supplier being audited shall be available during the audit as required by the audit team.

1.15 CERTIFICATES OF COMPLIANCE

- A. The Contractor may use certificates of compliance for certain materials and products in lieu of the specified sampling and testing procedures. Submit any certificates required for demonstrating proof of compliance of materials with specification requirements with each lot of material delivered to the Work. The lot so certified shall be clearly identified by the certificate. Certificates shall be signed by an authorized representative of the producer or manufacturer and shall state that the material complies in all respects with Contract requirements.
- B. The Contract Schedule specified in Section 01 32 16 - Construction Progress Schedule, shall indicate the date scheduled for the submittal of certificates. In the case of multiple shipments, each of which shall be accompanied by a certificate of compliance, the scheduled date on the Project CPM Schedule shall indicate the initial submittal only.
- C. The certificate of compliance shall be accompanied by a certified copy of test results or shall state that such test results are on file with the producer or manufacturer and shall be furnished to the District on request. In addition to the identifying information specified for submittals in Article 1.05E of Section 01 33 00 - Submittal Procedures, the name and address of the organization performing the tests, the date of the tests, and the quantity of material shipped.
- D. Materials used on the basis of a certificate of compliance may be sampled and tested by the Engineer at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve the Contractor of its responsibility for incorporating material in the Work which conforms to the requirements of the Contract, and any such material not conforming to such requirements will be subject to rejection, whether in place or not.

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- E. The District reserves the right to reject a certificate of compliance and require submittal and execution of sampling and testing procedures described herein.

1.16 SPECIAL INSPECTONS

- A. Any special inspections required shall be executed by an independent inspection organization, not affiliated with the Contractor or its regular quality control organization.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 45 00