

**SECTION 01 40 00
QUALITY CONTROL**

PART 1 GENERAL

1.1 SECTION INCLUDES:

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

1.2 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 fully with manufacturers' instructions, including each step in sequence.
- C. If manufacturers' instructions conflict with contract documents, request clarification from Architect before proceeding, and document instructions or directions that may invalidate a warranty.
- D. Comply with specified standards as a minimum quality for the work.
- E. Perform work by persons qualified to produce workmanship of 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.
- H. Contractor shall schedule work to prevent absorbent materials installation and/or concealment of areas until, the building is dried-in, the installation of permanent doors and windows to prevent development of mold, entrapment of mold, moisture inside concealed spaces, or moisture absorption into interior materials.
- I. In buildings deemed "dried-in" by the Contractor, the Architect/Owner may require testing of building areas they suspect may have water damage/mold. If testing indicates water damage or mold growth, Contractor shall remove effected area and replace with new clean material at no additional cost to the Owner. If no damage/mold is discovered, cost of testing to be paid by the Owner.

1.3 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.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES AND STANDARDS:

- A. Workmanship shall comply with requirements of the standards specified by an association, trade, or other consensus standards of the specified products, except when applicable code requirements are more stringent.
- B. Use current reference standard(s) based on the date of contract documents, except where a code establishes a specific date.
- C. Obtain copies of standards where required by product specification sections.
- D. The contractual relationships, duties, nor responsibilities of the parties in Contract nor those of the Architect shall be altered from the contract documents by mention or inference in any referenced document.

1.5 MOCK-UP:

- A. Perform all tests identified in this section and in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining work.
- D. Where Architect accepts the mock-up and product specification sections specify removal, remove mock-up and clear area when directed.
- E. When feasible, an area of permanent construction may be used as a mock-up.

1.6 TESTING SERVICES:

- A. Owner will appoint and pay for specified services of an independent firm to perform testing.
- B. The independent firm will perform tests and other specified services as outlined in individual specification sections and as required by the Owner.
- C. Testing and source quality control may occur on or off the project site.
 - 1. Perform off-site testing as required by the Architect or the Owner.
- D. The independent firm shall submit reports to the Owner and Architect and Contractor, indicating observations and results of tests and compliance or non-compliance with contract documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Owner, Architect and independent firm a minimum of 2-business days prior to expected time for operations requiring services.
 - 2. Make necessary arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- F. Testing does not relieve Contractor to perform work to contract requirements.
- G. The Architect may direct the same independent firm to re-test because of non-conformance to specified requirements.
 - 1. Contractor shall pay for re-testing cost by deducting testing charges from the Contract Price.

1.7 INSPECTION SERVICES:

- A. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspection.
- B. The independent firm will perform inspections and other services specified in individual specification sections and as required by the Owner.
- C. Inspecting may occur on or off the project site.
 - 1. Perform off-site inspecting as required by the Architect or the Owner.
- D. The independent firm to the Owner and Architect and Contractor, indicating inspection observations and indicating compliance or non-compliance with contract documents, will submit reports.
- E. Cooperate with independent firm; furnish safe access and assistance for incidental labor as requested.
 - 1. Notify Owner, Architect, and independent firm a minimum of 2-business days prior to expected time for operations requiring services.
- F. Inspecting does not relieve Contractor to perform work to contract requirements.

1.8 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 and as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to the Architect 30 days in advance of required observations; the observer is subject to Owner's approval.

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- C. Report all observations, site decisions, and instructions given to the applicators or the installers that are supplemental or contrary to the manufacturers' written instructions.
- D. Refer to Section 01 33 00 - SUBMITTALS, MANUFACTURERS' FIELD REPORTS.

1.9 COMMISSIONING:

- A. Commissioning of a system or systems is part of the construction quality process.
- B. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with the Owner's Representative and the Commissioning Authority.
- C. Project Closeout is dependent on successful completion of all commissioning procedures, documentation, and issue closure.
 - 1. Refer to Section 01 77 00 - Contract Closeout, for substantial completion details.
 - 2. Refer to Section 01 91 00 - Commissioning, for detailed commissioning requirements.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

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 existing substrate is capable of structural support or attachment of new work.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION:

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION