

SECTION 01 4000**QUALITY REQUIREMENTS****PART 1 - GENERAL****1.01 SECTION REQUIREMENTS**

- A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. 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.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Specific test and inspection requirements are not specified in this Section.
- 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 University.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- D. University's Testing Laboratory: An entity hired and paid for by the University to perform special testing or specific testing, inspections, or both. Testing Agency shall mean the same as testing laboratory.
- E. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- F. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- G. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance. Refer to specific specification for additional requirements.
- H. Mockups: Full-size physical assemblies that are constructed either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified

installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as indicated in-place portions of permanent construction, consisting of multiple products, assemblies, and subassemblies, with cutaways enabling inspection of concealed portions of the Work.
 - a. Include each system, assembly, component, and part of the exterior wall or roof to be constructed for the Project. Colors of components shall be those selected by the University's Representative for use in the Project.
 2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes; doors; windows; millwork; casework; specialties; furnishings and equipment; and lighting.
 3. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
 4. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.
- I. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum. The actual installation may exceed the minimum within reasonable limits. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to University's Representative for a decision.
- J. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections.
- K. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections.
- L. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections.
- M. Licenses, and Certificates: For University's records, submit copies of licenses, certifications, inspection reports, notices, receipts for fee payments, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- N. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind required.
- O. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and where required by California Building Code, that is acceptable to University's Representative.
- P. Inspector of Record: (IOR.) Employed by the University to observe, inspect, and conduct tests required or deemed necessary to confirm work is in accordance with the Contract Documents, California Code of Regulations or other applicable regulatory requirements.

- Q. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- R. Associated Services: Cooperate with IOR, University's testing agencies and provide reasonable auxiliary services as requested. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Preliminary design mix proposed for use for material mixes that require control by testing agency.
- S. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
- T. Manufacturer's Startup and Adjustment Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions to be followed for startup and adjustment of equipment. Procure copies of instructions and distribute to University's Representative and other concerned parties.
- U. Existing Equipment: Follow industry standard guidelines for startup. Contact University's Representative if any concerns with startup and adjustment of existing equipment.
- V. Existing Utilities: University's utilities such as chilled water, high temperature water, heating water, natural gas, electricity or other similar systems can only be started up by University's Facilities Management staff.
- W. Coordinate with University's Representative for startup of any existing University utilities.
- X. Special Tests and Inspections: University will engage a qualified special inspector to conduct special tests and inspections required by California Building Code.
- Y. University Responsibilities: Where quality-control services are indicated as University's responsibility, University will engage a qualified testing agency to perform these services.
1. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- Z. Contractor Responsibilities: Tests and inspections not explicitly assigned to University are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and required by specific specifications sections.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

3. Submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. When the highest quality Work cannot be obtained using procedures, guidance or drawings provided, advise University's Representative before proceeding.
- AA. University's Representatives will conduct frequent visits to job site to review progress of Work. If, in opinion of University's Representative, Work is defective, remove defective Work and take action to ensure future Work is in compliance with Contract Documents. Defective Work shall be removed and replaced at no cost to University.
- BB. Work is subject to approval of University's Representative. Any Work requiring correction to comply with Contract Documents shall be corrected at no cost to University.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 UNIVERSITY'S TESTING LABORATORY

- A. Cooperate with University's Testing Laboratory; furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested by University's Representative. Notify University's Representative and University's Testing Laboratory sufficiently in advance for operations requiring services.
- B. Make arrangements with University's Testing Laboratory and pay for additional samples and tests required for Contractor's use.

3.02 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for University's reference during normal working hours.

3.03 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.04 INSPECTION REQUESTS:

- A. Submit inspection request to the University's Representative at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
- B. Work performed by the Contractor or sub-contractors shall be reviewed and approved for compliance with the Contract Documents prior to submittal of the Inspection Request.
- C. Contractor's responsibility on the day of inspection:
 - 1. Have Contract Documents available at the construction site.
 - 2. Have shop drawings, product, material, or equipment Submittals marked "NET" or "MCN" to show approval by the University available at the construction site.
 - 3. Provide equipment, utilities, lighting, and access necessary for University's Representative to conduct inspections.
- D. Discrepancies or defective Work found shall be corrected to the satisfaction of University's Representative.

END OF SECTION