

SSPC: The Society for Protective Coatings

Quality System No. 1

Standard Procedure for Evaluating a Coating Contractor's Advanced Quality Management System

1. SCOPE

1.1 SSPC-QS 1 requires a coating contractor to implement and document advanced quality control and recordkeeping procedures. As such, the requirements of this standard are intended to supplement the requirements of SSPC-QP 1, SSPC-QP 3, SSPC-QP 6, and SSPC-QP 8. Owners and specifiers who require a higher level of quality control for their projects have the option to require that a contractor qualified to QP 1, 3, 6, or 8 also present evidence that its quality system meets the requirements of QS 1 on projects where an SSPC-QS 1 certification or an equivalent advanced quality management system is required.

1.2 The objective of this standard is to confirm that a contractor has the personnel, organization, qualifications, procedures, knowledge, and capability to implement the QS 1 quality procedures.

1.3 The standard encompasses the in-process inspection of surface preparation, application and cure of protective coatings and linings for new construction and maintenance for industrial, commercial, and marine service.

2. DEFINITIONS

Auditor: 1) The person or persons performing audits on behalf of the qualifying agency. 2) The body possessing the necessary technical competence to review contractor submittals, conduct on-site audits of applicants, and report results in compliance with the requirements of this procedure and the written requirements of the formal audit program.

Calibration: The set of operations that establish, under specified conditions, the relationship between values indicated by a measuring instrument and the corresponding known values of a measurement.

Contractor: An individual or firm that provides surface preparation and coating application services in the industrial, marine, and heavy or light industrial commercial markets.

Corrective Action (CA): The action or actions undertaken to identify and eliminate the root cause of a product or process nonconformance to prevent its recurrence. Corrective action is not the repair or rework of identified nonconforming product or process to meet specified requirements.

Inspection: Confirmation by examination and provision of evidence that specified requirements have been met. The examination and determination of conformity with specific requirements on the basis of professional judgment, and general requirements according to published industry standards, as required in each project specification.

Qualifying Agency: The body responsible for sponsorship and operation of an independent certification program to ensure uniform compliance with provisions of a standard.

Quality Control Manual: A document stating the contractor's quality policy, quality system and quality practice.

Quality System: The organizational structure, responsibilities, procedures, processes, and resources utilized by the contractor for implementing quality management.

Procedure: The written sequence of steps taken by personnel to carry out a particular course of action.

Test: A technical operation that consists of the determination of one or more characteristics or performance of a given product, material, equipment, physical phenomenon, process or service, according to a specified procedure.

Test Method: A definitive, standardized set of instructions for the identification or measurement or evaluation of one or more qualities, characteristics, or properties of a material.

Verification: Confirmation by examination and provision of evidence that specified requirements have been met.

3. SIGNIFICANCE AND USE

Contractors meeting the requirements of this standard have demonstrated that they are capable of implementing generally accepted inspection criteria for coating inspection (including surface preparation) and field testing activities normally required as a part of coating inspection work. Contractors meeting the requirements of this standard have the capability to provide and maintain the necessary quality systems required for each project requiring implementation of an advanced quality system.

4. REFERENCED STANDARDS

4.1 The latest issue, revision, or amendment of the referenced standards in effect on the date of invitation to bid shall govern, unless otherwise specified.

4.2 If there is a conflict between the requirements of any of the cited referenced standards and this procedure, the requirements of this procedure shall prevail.

4.3 SSPC STANDARDS:

QP 1

Standard Procedure for Evaluating the Qualifications of Industrial/ Marine Painting Contractors (Field Application to Complex Industrial Steel Structures)



Documents

Document Sharing Hub

- QP 3/AISC 420.10** Certification Standard for Shop Application of Complex Protective Coating Systems
- QP 6** Standard Procedure for Evaluating Contractors Who Apply Thermal Spray (Metallizing) for Atmospheric Corrosion Protection of Steel and Concrete Structures
- QP 8** Standard Procedure for Evaluating the Qualifications of Contracting Firms that Install Polymer Coatings or Surfacing on Concrete and Other Cementitious Surfaces

4.4 SSPC PUBLICATIONS

Development and Use of Quality Control Forms in Coatings Contracting
SSPC Guide for Planning Coatings Inspection

4.5 ASTM INTERNATIONAL STANDARD¹

- D3276** Standard Guide for Painting Inspectors (Metal Substrates)

5. ORGANIZATION AND MANAGEMENT

5.1 The contractor shall demonstrate that its inspection function is identifiable within the company organization.

5.2 The contractor shall:

5.2.1 Demonstrate that managerial staff have the necessary expertise, authority and resources to review and verify work performed by field personnel by supplying (1) an organizational chart clearly showing lines of authority within the company, (2) written documentation of training and experience of managerial staff, and (3) written evidence that Quality Management reviews inspection and quality control reports written by its field inspection personnel at least weekly during production operations.

5.2.2 Be organized in such a way that demonstrates sufficient independence to ensure that quality considerations are independent of production. Provide written evidence that verification of the inspection result is administered independently of the inspection and production operation.

5.2.3 Specify and document the responsibility, authority, and interrelationship of all personnel who manage, perform or verify work activity affecting the system. Demonstrate that management personnel review work of field inspection staff and QA personnel to monitor compliance with project specifications and any other contract documents.

5.2.4 Provide inspection, supervision, and management by persons familiar with the inspection or test methods and procedures, the objective of the inspection or test, and the assessment of the results. (See Section 7 for a description of qualification requirements for inspectors.)

5.2.6 Employ a full-time Quality Manager (QM) with executive responsibility, who reports directly to executive management of the company or facility and is independent of production, to ensure compliance with all company quality procedures and to monitor their implementation.

5.2.7 Appoint a designated replacement in the absence of the QM. The designated replacements shall demonstrate qualifications as required by Section 7, and in the absence of the QM shall report directly to executive management of the company or facility.

6. QUALITY SYSTEM REQUIREMENTS

6.1 QUALITY MANUAL: The contractor shall establish and maintain an advanced quality system appropriate to the type, range, and volume of in-process inspection activities it undertakes. The elements of this system shall be documented. The quality documentation shall be available for use by contractor personnel. The contractor shall define and document contractor practice. The contractor's management shall ensure that these policies and objectives are documented in the quality manual and communicated to, understood by, and implemented by all contractor personnel. The quality manual shall be reviewed by executive management at least annually for continued efficacy, and shall be updated as necessary or if required by a customer.²

6.2 SYSTEM PROCEDURES: In order to meet the requirements of this standard, the quality manual and related quality documentation shall state the contractor's policies and operational procedures. The quality manual and related quality documentation shall also contain:

6.2.1 A quality policy statement, including objectives and commitments, by ownership and executive management.

6.2.2 The organization and management structure of the contractor, its place in any parent organization, and relevant organizational charts.

6.2.3 The reporting relationship between management, production operations, support services, and quality management personnel.

6.2.4 Procedures for control (including distribution) and maintenance of all quality control & quality assurance procedures and corporate record keeping and retention policies.

¹ ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

² There is no standard format for an effective Quality Manual nor is there a requirement for the Quality Manual formatting to match the format of a conforming standard. The quality manual should be organized in a way that is suitable for the applicant firm, because it will be used by the firm's staff on a daily basis. ISO 9001:2008 (or current revision), ISO/TR 10013:2001, and SSPC-QP 3/AISC 420-10 provide guidance that can be used to develop a Quality Manual.

6.2.5 Job descriptions of key staff implementing and maintaining the quality system, including qualifications required to hold the position.

6.2.6 Identification of the contractor's approved signatories.

6.2.7 The contractor's procedures for achieving traceability of measurements, where applicable, for all measurement and test equipment (M & TE).

6.2.8 The contractor's general scope of inspections and tests. (The precise scope of an inspection will be determined by the terms of the individual contract or work order, and the contractor's internal procedures that do not conflict with customer requirements.)

6.2.9 Reference to any inspection equipment and reference measurement standards used.

6.2.10 References to procedures for inspection, calibration, verification of accuracy, and maintenance, repair and removal from service, of M & TE, as required by the quality manual and customer requirements.

6.2.11 Nonconformance and Corrective Action Procedures for handling nonconforming coating and related work or nonconforming administrative processes. At a minimum, procedures shall include: description of the nonconformity, plausible root cause analysis, plan to modify the system to avoid recurrence and responsibility for implementation of corrections, timetable and evaluation of effectiveness after implementation.

6.2.12 Preventive Action Procedures for evaluating previous and potential nonconformities to identify possible trends adverse to quality on a periodic basis (at least annually) and modifying the quality system as appropriate

6.3 QUALITY PLANNING

6.3.1 The contractor shall define and document how it plans to meet the requirements for quality. Quality planning shall be consistent with all other requirements of a contractor's quality system and shall be documented in a format to suit the contractor's method of operation. The contractor shall address the following activities, as appropriate, in meeting the specified requirements for products, projects, or contracts:

- a. the preparation of project-specific quality plans
- b. the identification and acquisition of any controls, processes, or equipment (including M & TE, fixtures, resources, and skills) that are needed to achieve the required quality
- c. ensuring the compatibility of the production process, installation, servicing, inspection and test procedures, and the applicable documentation
- d. updating, as necessary, of quality control, inspection and testing techniques, including the use of

instrumentation new to the company or newly placed in the market

- e. the identification of any measurement requirement involving capability that exceeds the known state of the art, in sufficient time for the needed capability to be developed or the requirement to be waived by the customer.

6.3.2 A separate work plan, including an inspection and test plan, shall be developed for each job phase, if they differ in scope of work. The plan shall be prepared for each task that requires performance of productive work prior to the start of work on that specific project. It shall be revised and updated as required to remain current and accurate, and shall be available on the job site at all times. The plan shall be the compilation of all individual processes that make up the prescribed work, in any format that is complete, accurate, and usable. Each individual process shall include:

- a. description of process, including critical factors that have direct bearing on the process quality and safety
- b. qualification requirements for the personnel performing the work
- c. the method utilized to ensure personnel accomplishing the procedure have direct knowledge of the requirements prior to beginning work
- d. the method utilized to control the procedure, including but not limited to, reference to the project specification or other specific requirement
- e. acceptance and rejection criteria, referenced to the project specification or other specific requirements

6.4 PROCEDURES FOR PROJECT DOCUMENT REVIEW

6.4.1 The contractor shall establish and maintain documented procedures for project document review and for the coordination of these activities.

6.4.2 Review: Before submission of a bid, tender, or proposal, or at the acceptance of a contract or order (statement of requirement) the requirements shall be reviewed by the contractor to ensure that:

- a. the requirements are adequately defined and documented; where no written statement of requirement is available for an order received by verbal means, the contractor shall ensure that the order requirements are agreed upon and documented before their acceptance
- b. any differences between the contract or accepted order requirements and those in the bid or tender are resolved and documented
- c. the contractor has the capability to meet all the contract or accepted order requirements.

6.4.3 Amendment to Contract: The contractor shall identify how an amendment to a contract is correctly and accurately transferred to applicable personnel within the contractor's organization. Channels for communication and interfaces with the customer's organization in these contract