

# SSPC QP 3 Shop Certification Program-Status Report

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# Topics

- Collaboration with AISC
- Status
- Core Elements
- Audit Criteria
- DAC

# Background

- AISC and SSPC longstanding collaboration going back 20+ years
- Original QP 3 standard and SPE developed mid-90s
- 1999-MOU recognizing programs as equivalent by intent
- 2006 - initiative to develop joint standard and equivalent auditing and administration procedures – upgrade from equivalent by intent



## Joint Standard MOU

- Signed July 8, 2010
- AISC and SSPC will qualify shops to the same standard, *SPE/QP3 420-10, “Certification Standard for Shop Application of Complex Protective Coating Systems”*
- Audit Criteria will be the same for both organizations
- Qualification process to begin 1<sup>st</sup> Quarter 2012

## Joint Standard MOU (cont' d)

- Administration of qualification programs remains separate
- AISC will only qualify participants also qualified as AISC Certified fabrication or manufacturing facilities
- SSPC will qualify all other shop application facilities
- Existing SPE/QP 3 certification will be recognized as equivalent until completion of first cycle of auditing to new standard

## Joint Standard MOU (cont' d)

- Allegations and complaints will be processed under existing procedures of each sponsor
- Plan to develop a mutually acceptable facility complaint adjudication procedure
- Primary contacts of both organizations to meet quarterly to review owner and participant feedback
- Standard to be reviewed every 5 years

# Status

- Standard published September 2010
- Audit team exchange of information - knowledge sharing – April 2011 (Cleveland)

# Purpose

- To confirm to owners that the Certified Firm has knowledgeable personnel, organization, experience, procedures and equipment to provide surface preparation and application of complex painting systems in accordance with contract specifications

# Scope

- Certifies the quality management system of the Firm, not its products
- Surface preparation and coating application in a shop environment to new steel or steel that has been blast cleaned prior to arrival at shop
- Does not include compliance with OSHA or EPA regulations
- Does not cover removal of pre-existing coatings



## Core Elements - Joint Standard

- Covers new steel painting in the shop
- Retains enclosed, covered, open shop facility categories of certification
- Defines applicable coating systems-complex coatings
- Requires key person overseeing painting QMS
- Requires creation and retention of quality records

## Core Elements (cont' d)

- Defines what quality records to be maintained - state-of-the-art QMS
- Requires qualification of painting subcontractors
- Defines requirements of QC inspectors
- Defines what should be in inspection reports
- Defines requirements for calibration program
- Requires a formal corrective action program



## Core Elements (cont' d)

- Defines craft worker qualification program
- Requires internal audit

# Areas of Evaluation

- Management Responsibilities
- Document and Data Control
- Quality Records
- Purchasing Practices and Materials
- Process Control
- Inspection and Testing
- Control of Nonconformities
- Corrective Actions
- Handling and Storage



# Areas of Evaluation

- Control of Nonconformities
- Corrective Actions
- Handling and Storage
- Personnel Training
- Internal Audit

# Management Responsibilities

- Commitment to meeting contract requirements
- Development and maintenance of quality management system (QMS) to ensure contract requirements are met
- Review quality management system at planned intervals, at minimum annually



# Review of Contracts and Project Specifications

- Document and implement procedure for contract and project specification review
- Define method for review of contract documents, revisions, change orders, clarifications to ensure compliance
- Show how requests for additional info or requests for clarification are documented, communicated, and resolved
- Records of contract reviews

# Document and Data Control

- Procedures for review
  - > Review and approval
  - > Revision control
  - > Access
  - > Obsolescence
- Control of quality records
  - > Retention and storage
  - > List of required records

# Quality Records

- Contract review
- Clarifications (RFIs)
- Training of personnel
- Internal Audits
- Qualifications of subcontractors, suppliers, products
- Requests and responses for DFS (RFD)
- Surface prep, application records

## Quality Records (cont' d)

- Documentation of nonconformities
- Corrective actions
- Final inspection of product

# Purchasing

- Procedure to ensure that coating subcontractors, purchased products, materials and services conform to contract requirements

# Material

- Material shall be properly stored according to manufacturer's recommendations
- Coating with expired shelf life shall be segregated and marked
- Quality record shall validate that the specific batches of material satisfy contract requirements



# Process Control

- Document and follow procedures to produce a consistent acceptable level of quality in surface preparation, coating application, curing and equipment maintenance
- Procedures shall prevent contamination of applied and curing coating by airborne material
- Verification of conformance to required cleanliness and temperature of surface

## Process Control (cont' d)

- Verification of proper product being applied, shelf life expiration date, batch numbers
- Ambient conditions conform to requirements
- Applied coating is free of visual defects
- Coating has been thinned, mixed, agitated properly (as applicable)
- Coating has been applied within specified pot life and recoat windows
- DFT gage accuracy has been verified
- Proper DFT has been verified

# Inspection and Testing

- Requires documented procedure for inspection of final product to ensure customer requirements are met
- Inspection plan shall include assignments of inspection duties and required inspection records
- DFT shall be measured in accordance with PA 2 unless otherwise specified
- Inspection for visible defects in coating

# Inspection

- Inspectors shall be qualified by the Firm
- Production personnel may inspect if
  - > They are trained in inspection practice and acceptance criteria
  - > They are aware of and have adequate time to inspect
  - > Inspections are monitored by qualified personnel

# Inspection Records

- Records shall include “who, what, where, when,” and disposition of nonconformances.
- Inspection reports shall be consistent with customer requirements and shall include:
  - > Surface preparation – cleanliness, profile
  - > Verification of DFT gage accuracy
  - > Measured DFT of applied coating
  - > Visual inspection of applied coating for defects



# Verification of Accuracy of Inspection Equipment

- Verification shall be made per manufacturer's recommendation or contract documents
- Record shall include
  - > Acceptance criteria
  - > Disposition of inaccurate DFT gages

# Control of Nonconformities

- Documented procedure to address nonconforming work including
  - > Identification
  - > Segregation
  - > Evaluation
  - > Responsibility and qualifications of inspection personnel
  - > Procedure for notification of customer
  - > Repair or disposal IAW customer requirements

# Corrective Action

- Documented procedure to include
  - > Periodic review of nonconformities and internal/external quality audit reports
  - > Identification of repetitive nonconformities
  - > Review of customer complaints
  - > Documentation of CARs and nonconformities
  - > Root cause analysis
  - > Corrective actions to prevent recurrence
  - > Followup to ensure implementation of CARs

# Personnel Training

- Craftworkers (application and surface prep) shall receive initial and continuing documented training for job function and for inspection methods and QA criteria
- Training personnel shall be qualified
- Record of topics discussed, course administrator, course attendees, attendee evaluations to measure comprehension



# Production Personnel

- Personnel shall be capable of inspecting their own work as in-process inspection
- Written program to assess skill/needs of newly hired craftworkers, train, and qualify them
- Verify qualifications of existing craft workers and evaluate annually, provide necessary training
- Personnel shall comply with contract-specific worker training/qualification requirements



# Qualification of Inspection Personnel

- Inspection personnel shall be qualified by training and experience.
- Basis for qualification shall be documented and include training and experience requirements for coating application and surface preparation
- Competency shall be assessed and documented
- Inspectors may be trained by qualified third party or by qualified instructors in-house



# Inspector Training Requirements

- Meet requirements of ASTM D 3276 “body of knowledge
- Topics shall include surface preparation, storage and handling, application, inspection practices and equipment, and preparation of an inspection checklist

# Internal Audit

- Firm shall perform an internal audit of process and procedures at least once each year
- Qualified individual shall perform audit
- Results shall be recorded and include any corrective actions required

## QP 3 Critical Item Provision

- SSPC has deemed the following 16 evaluation items critical to the annual certification maintenance of a shop. The provision requires the shop to achieve scores of a minimum of two (2) on a scale of 1 to 3, on 14 of 16 critical evaluation items or SSPC can withhold or suspend certification.

## Audit Criteria (Critical Items)

- Reference documents are available and accessible to personnel
- Management reviews QMS at least annually



# Audit Criteria Critical Items (cont' d)

- Distinct physical locations for
  - > surface prep
  - > coating application
  - > curing
  - > storage prior to shipment
- Ambient conditions protect from contamination
- Evidence of proper cure prior to shipment



# Audit Criteria

## Critical Items (cont' d)

- Process equipment for surface preparation and coating application is present and operated and there is evidence that it has been used
- Shop has operable, calibrated equipment for inspection, measurement and testing on site for surface profile, cleanliness, temperature, measurement of ambient conditions, coating temperature, WFT, DFT, etc.



# Audit Criteria

## Critical Items (cont' d)

- Shop has documented procedures for specification and contract review
- Shop has procedures/methods for owner approved changes/modifications, obtaining clarifications, waivers, etc.
- Conflicts between contract documents and product data sheets are noted and owner is notified in writing of discrepancy (contract requirements take precedence)



# Audit Criteria

## Critical Items (cont' d)

- Shop must maintain a written quality control manual to include contract documents, drawings, etc. and any other documents affecting coating quality
  - > Reviewed and approved by management
  - > Revision status and changes from previous revision
  - > Method for ensuring latest revision is being used



# Audit Criteria

## Critical Items (cont' d)

- Clearly identified coating containers include manufacturer, batch number, and shelf life
- The facility must document and utilize QC procedures for SP/CA, curing operations and equipment maintenance that will allow for continuous improvement of operations.



# Audit Criteria

## Critical Items (cont' d)

- Inspectors must be trained and qualified by the shop to perform their assigned inspection duties
- Production personnel only perform in-process, not final, inspections
- Production personnel inspection is monitored by QC or QC management



# Audit Criteria

## Critical Items (cont' d)

- Verification of DFT gage accuracy is performed according to SSPC-PA 2
- Contract nonconformities are identified and documented so that owner-approved disposition of nonconforming product is verifiable
- Reworked or repaired product must be approved by QC
- Nonconforming material is identified and properly disposed of in accordance with owner requirements



# Audit Criteria

## Critical Items (cont' d)

- SP/CA operations and QC personnel utilize corrective action procedures to identify recurring and/or significant operating errors and omissions that interfere with the quality of end products and services provided to/for the steel owner



# Audit Criteria

## Critical Items (cont' d)

- Craftworkers must receive adequate training for their job responsibilities, verified by testing
- Quality Control Inspectors must have evidence of formal training
- Internal Audits of SP/CA operations are performed and documented annually by a qualified individual.

# Audit requirements

- Annual audit at shop to
  - > observe facility layout and coating and related processes in progress
  - > review QC documentation and other records

## DAC for SSPC QP 3 Shops

- Organizations could not agree on joint disciplinary procedure
- SSPC will continue to invoke Disciplinary Action Criteria (DAC) for shops that are SSPC QP 3 certified
- AISC has formal complaint procedure and random audit program



# Questions and Comments Welcome

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## Thank you