



## Commercial, LLC

COATINGS - SEALANTS - VWC - EPOXY SYSTEMS

# QC1034– Project Quality Assurance

## Quality Control / Standard Operating Procedure

### 1.0 PURPOSE

To ensure that project specific activities and tasks are performed in an efficient and controlled manner that meet all project requirements as specified by engineered drawings, specifications, application methods, and schedules. To provide the basic work instructions, reference documents, and tool requirements needed to ensure that all technical specifications and workmanship standards are achieved. This SOP does not encompass procurement procedures and responsibilities (ref QC1002), or safety and hazard assessments (ref EHS Manual and QC1006 Job Hazard Assessment).

### 2.0 SCOPE

QC will mobilize work crews and execute material purchase orders for awarded projects only when the following preconstruction criteria have been met:

- 2.1 Customer requirements have been reviewed, understood, and agreed upon by both QC and the customer providing such requirements. This includes all customer provided drawings, material specifications, project schedules and durations, and customer approval of QC provided material submittals.
- 2.2 Any requirements deviating from standard requirements outlined by the customer are clearly defined and understood by all parties, e.g., hazard prevention policy.
- 2.3 It is determined that QC's process capabilities are sufficient to produce the customer's product to their specifications in a consistent and timely fashion at a cost acceptable to both QC and its customer.

### 3.0 REFERENCES

- |      |          |  |
|------|----------|--|
| 3.1  | QC1006-x | Job Hazard Assessment                        |
| 3.2  | QC1018-x | Submittals and SDS                           |
| 3.3  | QC1019-x | Corrective Action                            |
| 3.4  | QC1007-x | Employee Training and Qualification          |
| 3.5  | QC1011-x | Job Safety Analysis                          |
| 3.6  | QC1020-x | Inspections                                  |
| 3.7  | F1016-x  | Mil Thickness Report                         |
| 3.8  | F1031-x  | Adhesion Test Report (Steel Substrates Only) |
| 3.9  | F1022-x  | Ambient Conditions Record                    |
| 3.10 | F1057-x  | Inprocess Inspection Checklist               |



## Commercial, LLC

COATINGS - SEALANTS - VWC - EPOXY SYSTEMS

### 4.0 PROCEDURE

#### 4.1 Pre-Mobilization

- 4.1.1 A site visit is required prior to mobilization to inspect the existing conditions of the worksite. No work is to begin until all applicable documentation has been signed off by the customer, including but not limited to Change Orders, Material Submittals, Deviations, and Job Hazard Assessments.
- 4.1.2 All project specifications relating to coatings are to be agreed to in writing regarding finishes, colors, textures, mil thickness requirements, surface preparation, and work durations. The manufacturer's product and installation specifications shall be used as the governing standard for all installation methods and techniques unless QC is notified in writing that a third party standard is to be used.
- 4.1.3 A standard Job Hazard Assessment is to be performed to ensure the worksite and specific work areas are free from potential safety hazards. Use form QC1006-x when inspecting the job site.

#### 4.2 Mobilization

- 4.2.1 Once the optimum number of workers for the job is determined, the employees designated for the worksite must be identified. The scope of work and type of construction will determine the qualifications required for the individuals of the crew. All workers must either be properly trained to perform the work required for any specific worksite or task, or demonstrate the ability to effectively perform all the requirements and demands the project may present. All painting and coating projects are to be performed with QC's most experienced craftsman with at least one Craftsman III level employee per crew.
- 4.2.2 Leased equipment requirements shall be determined, and the equipment is to be scheduled for delivery using just-in-time procedures. Delivery of large equipment, e.g., booms, scissor lifts, etc., should be coordinated with the customer's project manager or site superintendant. Once equipment arrives from the vendor, it must be tagged identifying that the equipment is leased to QC. Chain and lock equipment as required.
- 4.2.3 Material purchase orders are to be placed using the submittals previously signed and approved by the customer. Materials will be delivered using just-in-time procedures, limiting the amount of onsite storage space requirements. Materials shall be order with sufficient lead-times as to guarantee the adequate availability of materials. Unless unforeseen circumstances arise, i.e., change orders or scheduling changes, there should never be a work stoppage due to material shortages.



## Commercial, LLC

### COATINGS - SEALANTS - VWC - EPOXY SYSTEMS

- 4.2.4 When working outside the Triangle Area, travel accommodations shall be determined prior to the commencement of work. Hotel accommodations and per diems will be established to make the employees as comfortable as reasonably possible.
- 4.2.5 If required, the delivery of an onsite office trailer and/or storage unit will be coordinated with Mobile Mini, or some other vendor of choice. All electrical, gas, and water hookups will be coordinated with the customer's site superintendent.
- 4.2.6 A tool and sundry assessment will be performed prior to mobilizing crews to a project. A list of the tools needed to adequately supply the project will be created, and the tools will be purchased and stocked in the company vehicles or onsite office trailer or storage unit.

#### 4.3 Execution

- 4.3.1 Prior to the start of each work shift, toolbox talks are to take place somewhere onsite but outside of designated construction zones or construction traffic areas. The meeting should be conducted by the supervisor or crew leader and only take about ten minutes to complete. All job specific tasks should be discussed and work assignments delegated to the appropriate personnel. A Job Safety Analysis (JSA) form should be filled out, discussed, and then signed by each employee on the crew (ref QC1006).
- 4.3.2 Job level or task level risk assessments must be performed if any of the following working conditions are likely (ref QC1006).
  - A) Employees working in the same area as other trades.
  - B) Employees working in confined spaces.
  - C) Employees working in close proximity to hot work.
  - D) Employees are working with unfamiliar tools, equipment, or materials.
  - E) A risk assessment is requested by QC management, QC's customer, or the project owner.
  - F) An employee performing a task requests a task level risk assessment.
- 4.3.3 When conditions warrant, i.e., uncontrolled climates, ambient weather conditions must be checked and monitored. Using the manufacturer's Technical Data Sheets (TDS) as guidelines, the following measurements must be taken (ref QC1022):
  - A) Relative Humidity
  - B) Dew Point
  - C) Ambient Temperature
  - D) Surface Temperature

Once these conditions are determined to be within the manufacturer's acceptable parameters, work can commence. If it is determined that any of these conditions fall outside of the required parameters, corrective action must be taken to bring the climate conditions into compliance. If corrective action is not feasible or is not affective, the work must be postponed until climate conditions change.



## Commercial, LLC

### COATINGS - SEALANTS - VWC - EPOXY SYSTEMS

- 4.3.4 Materials are to be inspected prior to the execution of any given task. The following product identifiers and characteristics must be checked by the crew lead. The amount of inspection detail will be determined by the complexity of the materials. For example, low cost latex paints will have much less rigorous inspection criteria than two part high solids polyurethanes.

Containers shall be clearly marked including:

- A) Manufacturer's Name
- B) Brand Name
- C) Lot Number (for special projects)
- D) Color
- E) Sheen

- 4.3.5 Prior to the start of work, all material and its corresponding Technical Data Sheets (TDS) must be reviewed by the supervisor or crew lead for the following:

- A) Mixing Instructions & Mix Ratios (for two and three part epoxies and urethanes)
- B) Appropriate Reducers (if applicable)
- C) Dry Times and Cure Times
- D) Spread Rates per Coat (in Mils)
- E) Surface Prep Requirements
- F) Clean Up Recommendations
- G) Application Procedures

- 4.3.6 Prior to the start of work, all material and its corresponding Safety Data Sheets (SDS) must be reviewed by the supervisor or crew lead to determine safe handling of the product. All sixteen sections of the SDS should be reviewed. Key points of interest are Exposure Hazards, Respirator Requirements, and First Aid Measures. The supervisor or crew lead will communicate any and all potential hazards to the work crew and will ensure that all safety precautions are taken, including issuance of the appropriate PPE, prior to mobilizing workers.

- 4.3.7 Surface preparation and coating system application procedures shall adhere to the manufacturer's requirements and the project architect's specifications. Use the Technical Data Sheets (TDS) in conjunction with job specific conditions to determine which surface preparation methods and application techniques to implement. If Application Bulletins or Installation Instruction Manuals are available, they should be use as a guide for all surface prep and coating installation activities. The architect's material specifications will provide detailed information on surface preparation and coating application.

- 4.3.8 In-process inspections will be performed during painting and coating installations using procedure QC1020-x and form F1057-x. When working with high performance coatings, mil thickness gages will be used to audit the thickness of each sequential coating applied. Form QC1016-x shall be used to record wet film thickness measurements. Final inspections will be performed using



# Commercial, LLC

## COATINGS - SEALANTS - VWC - EPOXY SYSTEMS

predetermined customer inspection criteria and the written manufacturer's recommendations. Any inspection criteria exceeding the manufacturer's requirements must be agreed to in writing prior to commencement of work.

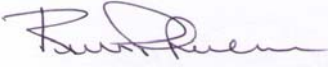
The owner or construction manager may require that inspections be performed by a third party or independent testing firm. In such cases, the firm providing the inspection and test services will do so at the owner's or construction manager's expense.

- 4.3.9 The QC supervisor or crew lead will place "Wet Paint" signs and flagging tape throughout the work area as required warning other work crews of wet paint and coatings. However, unless otherwise stated in writing, it is the owner's or construction manager's responsibility to ensure that newly applied finishes are protected from damage by other trades.
- 4.3.10 Daily cleanup will take place at the end of every working shift. Coatings will be stored in approved storage containers in areas predetermined by the customer's site superintendent. All trash will be removed from the site and discarded appropriately. All work areas shall be left appearing as good or better than they were before any painting activities began. Good housekeeping is as important to quality and safety as any other activity performed on the job. Good housekeeping measures shall be of highest priority on all jobsites.
- 4.2.11 A walk through inspection will be conducted at any time the customer requests. Walk through inspections will always be conducted after a major phase of construction has been completed or a project is finished. Walk through inspections should be conducted with a customer's representative present if possible. Any workmanship deemed unacceptable should be addressed immediately by correcting the nonconformance during the inspection or creating a punch list of items that are to be corrected. Punch list work should always be a priority and performed as soon as it can be scheduled.

### REVISION TABLE

Version	Date	Changes
1	11-19-11	Original Draft

### APPROVAL

QC Commercial, LLC	Russ Phillips		11-19-11
Company	Print Name	Signed	Date