### [CompanyName]

## Masonry Construction Quality Assurance/Quality Control Plan

[ProjectName]
[ProjectNumber]

Management acceptance

This Construction Quality Assurance/Quality Control Plan has been reviewed and accepted.

Endorsed By: (Name / Title)	[QualityManagerName], Quality Manager		
Signature:	[QualityManagerName]	Date:	[Date]
Version	1.0	Notes	Initial Issue

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#### PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN OVERVIEW

After [CompanyName] is awarded a contract to carry out a construction project, the Senior Manager forms a team consisting of a Quality Manager, Project Manager, and Superintendent.

First, the Quality Manager develops a set of project specifications that align project requirements with customer specifications and requirements, regulations, industry standards, product instructions, and [CompanyName] quality standards.

The Quality Manager evaluates personnel, subcontractors and suppliers, materials, and suppliers, and ensures that only those that are capable and qualified are included on the project. Training is provided to ensure that all personnel involved in the project understand their quality responsibilities and authorities.

The Quality Manager then details how the quality is controlled throughout the construction process through a quality inspection and test plan that specifies requirements and pass/fail criteria for quality inspections and tests. [CompanyName] operating policies assure compliance to the project specifications.

As the project proceeds and prior to starting each construction task, the Superintendent coordinates detailed requirements and resources, site conditions, and communicates them through a meeting with all interested parties. The Superintendent amends inspection specific checklists with items for heightened awareness based on the concerns of all parties.

The subcontractors and suppliers and Superintendent use the quality inspection forms to monitor execution of the construction process through a series of quality inspections before, during, and at the completion of each construction task. Laboratory and functional tests are performed to assure performance results.

Should nonconformances occur, they are systematically controlled and corrected. Improvements are made to prevent recurrences.

Throughout the project there are standard operating procedures and forms for creating, maintaining, and controlling quality documents and records.

Throughout the project, the Quality Manager performs on-site quality audits to ensure that the [CompanyName] Quality System is operating effectively.

## C. PROJECT QUALITY COORDINATION AND COMMUNICATION

[CompanyName] has regular, planned communications with customers, subcontractors, and suppliers to coordinate quality expectations, priorities, activities, and improvements.

The process begins when we hold a project startup meeting where we discuss how quality of the project will be controlled and the quality responsibilities of key personnel. We also coordinate a schedule for weekly production meetings, monthly quality management meetings, and protocols for telephone and internet communications.

Throughout the project, [CompanyName] holds preparatory meetings prior to the start of upcoming milestones, tasks, or phases of work. These meetings are attended by key company, subcontractor personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives. We review quality requirements, coordinate quality inspections and hold points. In the process, we listen to each stakeholder to understand their concerns for critical details. We add the critical details to inspection checklists. We also train production personnel on these details in weekly and toolbox talk meetings.

[CompanyName] weekly team meetings deploy findings of the preparatory meeting to field personnel. The venue is used to train personnel on technical requirements, reinforce critical details for heightened awareness, and institute improvements to work methods. It is also a forum for team communications and coordination.

### [CompanyName] Point of Contact List

Project ID	Project Name	Preparer	Date	
[ProjectNumber]	[ProjectName]	[ProjectManagerName]		

Company	Name	Job Position(s)	Phone Contact Numbers	Email
[CompanyName]	[SeniorManagerName]	Senior Manager		
[CompanyName]	[ProjectManagerName]	Project Manager		
[CompanyName]	[SuperintendentName]	Superintendent		
[CompanyName]	[QualityManagerName]	Quality Manager		
[CompanyName]	[SafetyManagerName]	Safety Manager		
		70		

### [CompanyName] Project Quality Communications Plan

Project ID	Project Name	Preparer	Date
[ProjectNumber]	[ProjectName]		

Distribution of project organization chart and assigned responsibility and authority of the Project Manager, Quality Manager, and Superintendent:

All personnel listed on contact list

All personnel listed on contact list

RFI response distribution:

Project startup meeting participants, date, location:

All personnel listed on contact list

TBD

Work task quality plan meeting participants, nominal location:

TBD

Weekly project communication meeting participants, and nominal day of week, time, and location:

TBD

Daily quality report distribution, frequency, and due date:

Friday of every week for the previous 7 days

Monthly project quality status report distribution and due date:

Third day of every month

Distribution of quality inspection and test records, and due date:

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#### H. SUBMITTALS

#### **SUBMITTALS**

Lists of documents and records that will be submitted to the customer appear on the Submittal Schedule and Log form. The Submittal Schedule and Log Form exhibit is included in this subsection.

#### **SHOP DRAWING SUBMITTALS**

The Project Manager or Purchasing and Estimating Manager prepare shop drawing submittals that supplement contract drawings. Shop drawings are required when additional details are necessary for fabrication or installation. The following information is included, as applicable:

- Dimensions established by field measurement
- Relationships to adjoining construction
- Identification of products and materials
- Fabrication and installation drawings
- Diagrams showing locations of field-installations
- Shop fabricated manufacturing instructions
- Templates and patterns
- Design calculations
- Compliance with specified standards
- Seal and signature of professional engineer if required
- Additional requirements as specified in the contract, contract technical requirements, or contract drawings.

[CompanyName] extends contract specifications to include customer approved shop drawings.

#### **PRODUCT DATA SUBMITTALS**

The Project Manager prepares product data submittals that consist of the manufacturer's product information. The information included in this submittal is:

- Manufacturer, trade name, model or type number
- Description
- Intended use
- Size and physical characteristics including drawings when applicable
- Finish and color characteristics
- Product manufacturer's installation instructions, when applicable
- Additional requirements as specified in the contract, contract technical requirements, or contract drawings.

#### **ALLOWANCES AND UNIT PRICES SUBMITTALS**

When customer contracts specify allowances and unit prices that the customer will select after the contract is awarded, the Project Manager prepares an allowance and unit price submittal for customer approval.

When a customer selects or approves an allowances and unit prices, the customer indicates the allowance and unit price selection on the signed submission return.

[CompanyName] extends compliance to contract specifications to customer approved allowances and unit prices.

#### **REQUEST FOR INFORMATION (RFI) SUBMITTALS**

#### [CompanyName] Quality Assurance/Quality Control Plan

The Project Manager submits a request for additional information to the customer when errors are found or when required information is not contained in the contract, contract technical specifications, or contract drawings.

Should any number of contract technical specifications or contract drawings result in conflicting requirements, the Quality Manager submits a request for information to the customer to select the standard that applies.

[CompanyName] extends compliance to contract specifications to customer requests for information.

#### **CHANGE ORDER SUBMITTALS**

Contract requirements or contract technical specifications may require a change after the contract is awarded. The Project Manager submits the change order to the customer for approval, including any contract price adjustments.

When a customer approves a change order, the customer signs the submission return.

[CompanyName] extends contract specifications to include customer approved change orders.

#### **MOCK-UP SUBMITTALS**

The Superintendent prepares mock-up submittals as required by contract. Additionally, the Quality Manager specifies mock-up requirements when they are necessary to ensures customer expectations are clearly identified.

The Quality Manager ensures that each mock-up demonstrates specific elements of form and/or function, and that they are specified in the submittal documents.

[CompanyName] extends contract specifications to include customer approved mock-up submittals.

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	[Compar Project Sub		
Submittal ID#	Project ID	Project Name	Date
	[ProjectNumber]	[ProjectName]	
То:		From: [CompanyName] Location:	
Type of Submittal:  Shop drawing  Product data  Request for information  Completed form or quality reconciled and the second sec	cord	Description of submittal:	
List of attachments:	CC, CC	Remarks:	
Submittal Prepared by: [CompanyName]  Name:  Title:  Signature / Date:	**IUs	Submittal Approved by [Companyl Name:  Title:  Signature / Date:	Name] Quality Manager:
Customer Disposition:  Approved  Conditionally approved, result comments)  Disapproved, resubmission re		Customer Representative:  Name:  Title:  Signature / Date:	
Comments:			

### [CompanyName] Project Submittals Schedule and Log

Contract ID	<b>Contract Name</b>	Preparer	Date	Notes
[ProjectNumber]	[ProjectName]	[ProjectManagerName]		

Contract Section Activity ID	Technical Specification Reference / Version Date	Type/Description of Submittal	Version Required /Date Submittal Date	Required Customer Approval Date	Customer Approval Date
		Q.O.			
		-0, 0			
		XO XX			
	So				
	10				

### [CompanyName] List of Anticipated Mock-ups and Log

Contract ID	Contract Name	Preparer	Date	Notes
[ProjectNumber]	[ProjectName]	[ProjectManagerName]		

Contract Section	Technical Specification	Description of Mock-up Submittal	Version /Date	Required Submittal	Date Submitted	Required Customer	Customer Approval
Activity ID	Reference / Version Date			Date	to Customer	Approval Date	Date
		×0					
		2, 60.					

#### J. MASON PROJECT QUALITY SPECIFICATIONS

Inspections and tests assess conformance to project quality specifications. Clearly defined specifications are essential for an effective inspection and test plan.

[CompanyName] personnel and subcontractors and suppliers are accountable for compliance to standards-based written specifications.

To achieve expectations reliably and consistently, specifications are clearly spelled out, not only for results but also for processes. Specifications apply to materials, work steps, qualified personnel and subcontractors and suppliers, safe work rules, and environmental work conditions.

Standards ensure that results are specified rather than left to discretionary practices.

#### **CONTRACT SPECIFICATIONS**

Fulfilling customer contract expectations is a primary objective of the [CompanyName] Quality System. To ensure that customer expectations will be fulfilled, [CompanyName] clearly defines the requirements for each contract before it is approved.

The Project Manager ensures that the information in customer contracts clearly defines customer expectations and that the necessary details are provided to set requirements for construction.

The Project Manager obtains contract technical specifications from the customer.

For each specific contract, The Senior Manager identifies supplemental technical specifications on the Trade-specific Quality Management Plan when they are not otherwise specified by the contract or the approved drawings. Superintendents have jobsite access to contract technical specifications for the construction activities they supervise.

All [CompanyName] activities comply with the contract technical specifications.

#### **CONTRACT DRAWINGS**

The Project Manager obtains customer supplied drawings that have been approved by local government regulators. Superintendents have jobsite access to approved architectural drawings for the construction they supervise.

All [CompanyName] activities comply with the drawing details and specifications cited in the drawings.

#### AS-BUILT RED-LINE DRAWINGS

As the project progresses, the Superintendent will mark the original design drawings to indicate as-built conditions including changes to specified materials, dimensions, locations, or other features.

#### **CONTRACT WARRANTY**

The Project Manager ensures that customer contracts clearly specify warranty coverage including:

- Scope
- Starting date

- Structural integrity
- Performance
- Durability
- Appearance
- Product identification for traceability.

The Quality Manager identifies controlled material and equipment that apply to the project. Only approved materials are used in the construction process.

#### **EQUIPMENT SPECIFICATIONS**

The selection and use of equipment are controlled to assure the use of only correct and acceptable equipment on the project.

The Quality Manager determines specifications of required equipment that affect quality and the specifications of quality-controlled equipment.

When equipment is received, the Superintendent verifies that equipment is as specified.

#### WORK PROCESS SPECIFICATIONS

The Quality Manager ensures that work processes are controlled to ensure that the specified requirements are met. When appropriate, the Quality Manager will specify project quality standards for work processes that may include:

- References to documented procedures such as manufacturer's installation instructions
- Procedures for carrying out process steps
- Methods to monitor and control processes and characteristics
- Acceptability criteria for workmanship
- Tools, techniques and methods to be used to achieve the specified requirements.

#### [COMPANYNAME] QUALITY STANDARDS

All [CompanyName] activities comply with generally accepted good workmanship practices and industry standards.

The Quality Manager identifies supplemental requirements for industry standards that apply to a specific project when it is not otherwise specified by the contract, contract technical specifications, or approved drawings.

[CompanyName] quality standards supplement contract requirements when they are necessary to ensure quality.

When [CompanyName] quality standards differ from industry standards or product manufacturer instructions, the Quality Manager justifies that the standard reliably achieves quality results and then documents the justification.

All [CompanyName] activities conform to the company quality standards.

#### COMPLIANCE WITH INDUSTRY MASONRY STANDARDS

Codes that may apply to this project include those listed below.

Description	Reference Standard No.	Reference Standard Title
Handling and storage of masonry units	ASTM C 90	Loadbearing Concrete Masonry Units
Hot and cold weather masonry erection	ACI 530/530.1	Building Code Requirements and Specification for Masonry Structures and Related Commentaries
Mortar mixing	ASTM C 270	Standard Specification for Mortar for Unit Masonry
Ventilation of work areas during structural paste/adhesive application	ACGIH Publication 0028	TLVs and BEIs
Construction tolerances for concrete unit masonry	ACI 530.1	Specifications for Masonry Structures

#### **APPLICATION OF MULTIPLE SOURCES OF SPECIFICATIONS**

Should multiple sources of specifications apply to a work task, the higher level of specification applies. When there are equal levels of specifications that conflict, the specifications are applied in this order:

- Submittals approved by the purchaser
- Contract technical specifications
- Contract drawings
- Government regulations that exceed requirements of items below
- [CompanyName] quality specifications, including subcontract specifications
- Product installation instructions
- Industry standards
- Generally accepted practices

#### L. MASON INSPECTION AND TEST PLAN

#### **INDEPENDENT MEASUREMENT AND TESTS**

The Quality Manager ensures that quality tests that apply to a specific project are clearly identified. Tests for a project include:

- Purchaser required quality tests as specified by the contract, contract technical specifications, contract drawings, and approved submittals.
- Additional quality tests necessary to assure quality results.

#### **HOLD POINTS FOR PURCHASER INSPECTION**

The Superintendent stops work when reaching a hold point specified on the inspection and test plan. The Superintendent ensures that work proceeds only with purchaser approval.

#### **INSPECTION AND TESTING MASONRY STANDARDS**

Inspection and testing standards that may apply to this project include those listed below.

Description	Reference Standard No.	Reference Standard Title
Inspections and testing for seismic-resisting systems	UFC 3-310-04	Seismic Design for Buildings
Compressive strength mortar samples	ASTM C 780	Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
Compressive strength grout samples	ASTM C 1019	Standard Test Method for Sampling and Testing Grout

# [CompanyName] Inspection and Test Plan and Log Project Number Project Name [ProjectNumber] [ProjectName]

	Spec Section	Spec Section	Applicable	Inspections & Tests	# Of Tests /Inspections	Time Schedule/	Inspection/Test By (All tests verified by Superintendent and/or	Sample Reqd.	Unique characteristics
Item	Number	Title	Standard	Description	Reqd.	Frequency	QC Manager)	Yes/No	of QC Service
1.									
2.				70.0					
3.									
4.				7, 16					
5.				0					
6.			~ (						
7.									
8.									
9.									
10.									
11.									
12.									
13.		•							
14.									
15.									

[CompanyName] Testing & Inspection Results Log						
Project ID	Project Name		Preparer	Date		
[ProjectNumber]	[ProjectName]					
	Ti					
Report ID /Date of Issue	Description of Inspection / Test	Report Date	Results	Type of Corrective		
oi issue	inspection / Test		Approved Rejecte	d		
			70 (			
			0 .0,			
	×					
	101					
	5					
	2 10					
	10					

## N. CONTROL OF CORRECTIONS AND NONCONFORMANCES

Should a problem occur in the quality of work, we systematically contain the issue and quickly make corrections. Our first action is to clearly mark the item by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

Then we expedite a corrective action that brings the workmanship or material issue into conformance by repair, replacement, or rework. Previously completed work is reinspected for similar nonconformances. If we cannot correct the item to meet contract specifications, the customer will be notified, and customer approval of corrective actions is required before proceeding.

Fixing problems found is not enough. [CompanyName] systematically prevents recurrences to improve quality. First enhanced controls and management monitoring are put into place to assure work proceeds without incident. Then using a structured problem-solving process, [CompanyName] identifies root causes and initiates solutions. Solutions may involve a combination of enhanced process controls, training, upgrading of personnel qualifications, improved processes, and/or the use of higher-grade materials. Follow-up ensures that a problem is completely resolved. If problems remain, the process is repeated.

Nonconformances and their resolution are recorded on a Nonconformance Report form. A Nonconformance Report form exhibit is included in this subsection.

#### MARKING OF NONCONFORMANCES AND OBSERVATIONS

When the Quality Manager, Superintendent, inspector, or customer identifies a nonconformance or an observation, the item is quickly and clearly marked by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

#### CONTROL THE CONTINUATION OF WORK

After the item is marked, the Superintendent determines if work can continue in the affected area:

CONTINUE WORK: When continuing work does not adversely affect quality or hide the defect, work may continue in the affected area while the disposition of the item is resolved. The Superintendent may place limitations on the continuation of work.

STOP WORK ORDER: When continuing work can adversely affect quality or hide the defect, work must stop in the affected area until the disposition of the item resolved. The Superintendent identifies the limits of the affected area. The Superintendent quickly and clearly identifies the boundaries of the stop work area.

#### RECORDING OF NONCONFORMANCES

If nonconformances or observed items exist by the work task completion inspection, the Superintendent or inspector records the nonconformances on a nonconformance report.

The Superintendent sends the nonconformance report to the Quality Manager.

#### **QUALITY MANAGER DISPOSITION OF NONCONFORMANCE REPORTS**

When the Quality Manager receives a Nonconformance Report, he or she assesses the affect the reported nonconformance has on form, fit, and function. The Quality Manager may assign a disposition of either:

REPLACE: The nonconformance can be brought into conformance with the original specification requirements by replacing the nonconforming item with a conforming item.

REPAIR: The nonconformance can be brought into conformance with the original requirements through completion of required repair operations.

REWORK: The nonconformance can be made acceptable for its intended use, even though it is not restored to a condition that meets all specification requirements. The Quality Manager may specify standards that apply to the completion of rework. Rework nonconformances must be approved by the customer.

USE AS-IS: When the nonconforming item is satisfactory for its intended use. Any use as-is items that do not meet all specification requirements must be approved by the customer.

#### **CORRECTIVE ACTIONS**

The Superintendent verifies that corrective actions eliminate the nonconformance to the requirements of the original specifications or as instructed by the disposition of the nonconformance report, and then removes, obliterates, or covers the nonconformance marker.

Furthermore, the Superintendent ensures that previously completed work is reinspected for similar nonconformances and corrective actions are taken to avert future occurrences (see section Error! R eference source not found. Error! Reference source not found.).

#### **CONTROL OF CORRECTIVE ACTIONS**

When a nonconformance is found, the Superintendent ensures that:

- Previously completed work is reinspected for similar nonconformances
- Corrective actions are taken to avert future occurrences

The Quality Manager identifies requirements for corrective actions with respect to frequency, severity, and detectability of quality nonconformances items found during and after completion of work activities.

When a solution requires changes to [CompanyName] quality standards, the Quality Manager makes modifications as necessary by making changes to:

- Material specifications
- Personnel qualifications
- Subcontractor and Supplier qualifications
- Company standards
- Inspection processes

[CompanyName] Nonconformance Report						
Nonconformance Report Control ID	Project ID	Project Name				
	[ProjectNumber]	[ProjectName]				
Preparer Signatu	re/ Submit Date	Quality Manager Signature / Disposition Date				
Description of the requirement or specification		200				
Description of the nonconformance, location, affected area, and marking						
	Replace Repair Rework	s ☐ Use As-is				
Disposition	7 10					
	Approval of disposition required by customer representative? Yes  No					
	Customer approval signature /dat	e:				
Corrective Actions	Corrective actions completed N					
	Name/Date:					
Preventive Actions						
	Preventive actions completed	lame/Date:				

### [CompanyName]

## Masonry Construction Quality Manual

## Operating Policies of the [CompanyName] Quality System

#### Management acceptance

This Quality Manual has been reviewed and accepted

Endorsed By: (Name / Title)	[PresidentName], President		
Signature:	[PresidentName]	Date:	[Date]
Version	1.0	Notes	Initial Issue

Documents provided by [CompanyName] disclose proprietary information as well as copyright information registered with the U.S. Patent and Trademark Office. Please hold these documents in confidence and do not share them with other organizations, even if you do not charge a fee. Submittal of documents does not transfer copyright ownership.

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## 2. PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN

#### 2.1. OVERVIEW

After [CompanyName] is awarded a contract to carry out a construction project, the Senior Manager forms a team consisting of a Quality Manager, Project Manager, and Superintendent.

First, the Quality Manager develops a set of project specifications that align project requirements with customer specifications and requirements, regulations, industry standards, product instructions, and [CompanyName] quality standards.

The Quality Manager evaluates personnel, subcontractors and suppliers, materials, and suppliers, and ensures that only those that are capable and qualified are included on the project. Training is provided to ensure that all personnel involved in the project understand their quality responsibilities and authorities.

The Quality Manager then details how the quality is controlled throughout the construction process through a quality inspection and test plan that specifies requirements and pass/fail criteria for quality inspections and tests. [CompanyName] operating policies assure compliance to the project specifications.

As the project proceeds and prior to starting each construction task, the Superintendent coordinates detailed requirements and resources, site conditions, and communicates them through a meeting with all interested parties. The Superintendent amends inspection specific checklists with items for heightened awareness based on the concerns of all parties.

The subcontractors and suppliers and Superintendent use the quality inspection forms to monitor execution of the construction process through a series of quality inspections before, during, and at the completion of each construction task. Laboratory and functional tests are performed to assure performance results.

Should nonconformances occur, they are systematically controlled and corrected. Improvements are made to prevent recurrences.

Throughout the project there are standard operating procedures and forms for creating, maintaining, and controlling quality documents and records.

Throughout the project, the Quality Manager performs on-site quality audits to ensure that the [CompanyName] Quality System is operating effectively.

#### 2.2. [COMPANYNAME] PROJECT LICENSE AND QUALIFICATION REQUIREMENTS

The Quality Manager identifies company license and qualification credentials required by contract specifications and government regulators. The Quality Manager obtains records, certificates, and license records that provide verification of [CompanyName] credentials.

#### 2.2.1.1. REQUIRED COMPANY LICENSES AND CERTIFICATIONS

The Quality Manager defines quality-related company credentials for each project work task that affects quality.

#### 2.3. PROJECT PERSONNEL AND QUALIFICATIONS

#### 2.3.1. PROJECT ORGANIZATION CHART

The Senior Manager defines the organization chart for the project. The organizational chart includes job titles, names of assigned personnel, and organizational and administrative interfaces with the customer. The organization chart defines lines of authority as indicated by solid connection; dotted lines indicate lines of communication. The lines of authority preserve independence of quality control personnel from the pressures of production.

The Senior Manager assesses the qualification requirements for each position on the project organization chart, qualifications of each person, and then appoints only qualified persons to the project organization.

#### 2.3.2. APPOINTMENT OF KEY PROJECT PERSONNEL

The Senior Manager forms a project management team consisting of:

- A Quality Manager
- A Project Manager
- A Superintendent
- A Safety Manager (if required)

The Senior Manager appoints qualified persons to each project management job position with specific quality responsibilities and authorities. The Senior Manager assesses the qualifications of each person before the appointment is made.

The Senior Manager keeps a record of the appointment and signs the document. The person accepts the appointment by signing a declaration as a competent person.

Work steps for maintaining appointment of key project personnel are specified in Standard Operating Procedure 2.3.2 Appointment of Key Project Personnel.

#### 2.3.3. PERSONNEL QUALIFICATIONS

The Quality Manager qualifies employee capabilities to ensure that they are capable of completely carrying out their assigned quality responsibilities including the following capabilities:

- Knowledge of Company quality standards
- Knowledge of job responsibilities and authority
- Demonstrated skills and knowledge
- Demonstrated ability
- Demonstrated results
- Required training
- Required experience

The Quality Manager also evaluates independent contractor personnel on the same standards that apply to employees.

#### 2.3.3.1. REQUIRED LICENSES AND CERTIFICATIONS

The Quality Manager defines quality-related credentials for each project job position that affects quality.

#### 2.4. PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN

Before project work begins, the Project Manager prepares a construction process plan that defines the sequence of each work task and related quality inspections. The construction process plan is documented through an integrated and coordinated set of documents that includes:

- A schedule consisting of a sequence of each work task and activities required to complete a project
- The customer contract (Section 3 Contract Specifications) including contract technical specifications and contract drawings
- Required quality inspections and tests (Section 8.2 Required Work Task Quality Inspections and Tests) and the project Quality Inspection and Test Plan when required
- The Contract Submittal Schedule (Section 3.4.1 Contract Submittal Schedule)

#### 2.5. IDENTIFICATION OF QUALITY CONTROLLED WORK TASKS

The Quality Manager identifies each phase of construction work task that requires separate quality controls. Each work task triggers a set of requirements for quality control inspections before, during and after work tasks.

#### 2.6. Project Quality Inspection and Test Plan

The Quality Manager prepares quality inspection and test plans for a project that identifies:

- Each required quality inspection and/or test
- Inspection and test specifications for each required quality inspection or test
- Hold points for customer quality inspection
- Specification requirements for each quality inspection and test

#### 2.7. PROJECT QUALITY COMMUNICATIONS PLAN

After [CompanyName] is awarded a contract, the Project Manager plans the methods of communications among the customer, subcontractors and suppliers and [CompanyName].

#### 2.8. PROJECT QUALITY TRAINING PLAN

The Quality Manager ensures that all employees receive training relevant to their quality responsibilities.

The Quality Manager ensures that all subcontractors and suppliers receive training on relevant elements of the [CompanyName] Quality System, Project Quality Assurance/Quality Control Plan, and quality standards.

The Quality Manger identifies the training needs of all personnel performing activities that affect quality. Training topics may include:

- The [CompanyName] Quality System
- The [CompanyName] Quality Policy
- Operating policies identified in the Quality Manual
- Quality standards cited in the Quality Manual, or project documents, or records
- Relevant quality standard operating procedures

#### 7. Process Controls

#### HOW WORK IS CARRIED OUT

#### 7.1. OVERVIEW

The construction process plan defines how project work is to be done and approved for the overall project. The construction process plan is communicated to all key personnel, subcontractors and suppliers in a startup meeting. As the project proceeds, work task plans provide additional details of how each individual work task is carried out. Work tasks planning meetings are used to communicate expectations of the work task plan to key personnel responsible for carrying out the work task.

#### 7.2. PROJECT STARTUP AND QUALITY CONTROL COORDINATION MEETING

Prior to the commencement of work, the Project Manager holds a meeting to discuss and coordinate how project work will be performed and controlled. Key personnel from [CompanyName], subcontractors and suppliers meet to review expectations for project quality results as well as quality assurance and quality control policies and procedures including:

- Key requirements of the project
- The Project Quality Assurance/Quality Control Plan
- Required quality inspections and tests
- The project submittal schedule
- Quality policies and heightened awareness of critical quality requirements
- Project organization chart and job responsibilities
- Methods of communication and contact information
- Location of project documents and records

#### 7.3. PREPARATORY PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN PLANNING

#### 7.3.1. WORK TASK REQUIREMENTS REVIEW

In preparation for the start of an upcoming work task, the Superintendent reviews an integrated and coordinated set of documents that collectively define quality requirements for the work task including:

- · Objectives and acceptance criteria of the work task
- Quality standards that apply to the work task
- Work instructions, process steps, and product installation instructions that apply to the work task
- Shop drawings
- Submittals
- Tools and equipment necessary to perform the work
- License, certification, or other qualification requirements of personnel assigned to work
- Required records of the process and resulting product
- The subcontractor contracted to perform the work, if applicable
- Customer contract requirements
- Required quality inspections and tests
- Method for clearly marking nonconformances to prevent inadvertent use
- Location of quality system records and documents
- Personnel training

#### 7.3.2. PREPARATORY SITE INSPECTION

The Superintendent also performs a quality inspection of the work area and:

- Assesses completion of required prior work
- Verifies field measurements
- Assures availability and receiving quality inspection status of required materials
- Identifies any nonconformances to the requirements for the work task to begin
- Identifies potential problems

#### 7.3.3. WORK TASK PREPARATORY QUALITY PLANNING MEETINGS

Prior to the start of a work task, the Superintendent conducts a meeting with key company, subcontractor personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

During the meeting, the Superintendent communicates the work task quality requirements and reinforces heightened awareness for critical requirements. Topics for a work task quality plan meeting include:

- Conflicts that need resolution
- Required quality documents and a verification of availability to personnel carrying out, supervising, or inspecting the work task
- Record keeping requirements and the availability of necessary forms
- Review methods and sequences of installation
- Special details and conditions
- Standards of workmanship
- Heightened awareness of critical quality requirements
- Quality risks
- Work tasks quality inspection form

#### 7.4. WEEKLY QUALITY PLANNING AND COORDINATION MEETINGS

The Superintendent conducts a meeting with key company, subcontractor and supplier personnel responsible for carrying out, supervising, or inspecting the work, and interested customer representatives.

The meeting is held on a nominal weekly schedule. During the meeting, the Superintendent facilitates coordination among the participants, communication among the participants, and reinforces heightened awareness for critical requirements.

The Superintendent maintains a record of the meeting event on the Daily Quality Control Report.

#### 7.5. PROCESS CONTROL STANDARDS

#### 7.5.1. JOB-READY START WORK STANDARDS

Work on a work task starts only when conditions do not adversely impact quality, comply with government regulations, contract technical specifications, industry standards, or product installation instructions.

The Quality Manager identifies supplemental start-work requirements that apply to a specific project when they are necessary to assure quality results.

#### 7.5.5.1. CONTROLLED PRODUCT USE AND INSTALLATION

[CompanyName] construction activities conform to manufacturers' product use and installation instructions that apply to the construction process.

When installing a product, the Superintendent has access to all applicable product installation instructions.

#### 7.6. DAILY QUALITY CONTROL REPORT

The Superintendent records a summary of daily work activities. The report will include:

- Schedule Activities Completed
- General description of work activities in progress.
- Problems encountered, actions taken, problems, and delays
- Meetings held, participants, and decisions made
- Subcontractor and Supplier and Company Crews on site
- Visitors and purpose
- General Remarks
- Improvement Ideas
- Weather conditions

#### 7.7. MONTHLY QUALITY CONTROL REPORT

When a monthly quality control report is required by the Project Quality Plan, the Superintendent records a monthly status report. The report includes:

- A summary of work completed and work in progress
- Outstanding issues
- Issues resolved during the reporting period
- Outstanding potential change orders
- Project status with current project costs and estimated completion date
- A cost analysis summarizing actual costs to date and estimated future costs
- Project pictures as appropriate

#### 8. Inspections and Tests

#### **ASSURE COMPLIANCE**

#### 8.1. OVERVIEW

Inspections are necessary to verify that work processes and results conform to both contract requirements and [CompanyName] quality standards.

Qualified personnel inspect every project throughout the construction process. Additional reviews validate the accuracy of the field quality inspections and ensure that the quality standards apply uniformly.

An inspection and test plan defines the quality inspections and tests required for a specific project.

Personnel may only inspect work activities for which they are have been qualified by the Quality Manager.

#### 8.2. REQUIRED WORK TASK QUALITY INSPECTIONS AND TESTS

The Quality Manager identifies each Task that is a phase of construction that requires separate quality controls to assure and control quality results. Each Task triggers as set of requirements for quality control inspections before, during and after work tasks.

Tasks are divided into two categories:

- Discrete Tasks are standard type of work where a completion inspection is performed one time at the completion of a phase of work.
- Process Tasks are tasks where completion inspections are performed continuously. Continuous
  inspections are required when there is a limited window of time to perform a completion
  inspection before the next task begins. Process tasks may also be characterized by independent
  monitoring of a work process, such as welding, where the observer verifies conformance to work
  procedures.

Process tasks undergo additional quality controls that continuously monitor compliance to specifications.

Independent quality audits are conducted to verify that the task quality controls are operating effectively.

Construction projects may execute a work task multiple times in a project, in which case a series of quality inspections are required for each work task.

#### **8.3. MATERIAL INSPECTIONS AND TESTS**

Material quality inspections and tests ensure that purchased materials meet purchase contract quantity and quality requirements.

#### 8.3.1.1. MATERIAL RECEIVING INSPECTION

The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to project quality requirements. The receiving inspection includes a verification that the

Correct material has been received

The material is identified and meets the traceability requirements for the material Material certifications and/or test reports meet the specified requirements Materials are tested and approved for the specific application

#### [CompanyName] Quality Manual

The Superintendent ensures that each work task that uses the source inspected materials proceed only after the material has been accepted by the material quality inspection or test.

#### 8.3.1.2. SOURCE INSPECTIONS

Source quality inspections are required when quality characteristics cannot or will not be verified during subsequent processing. The Quality Manager determines if a source inspection is necessary to validate supplier quality before materials are delivered to the project jobsite.

The Superintendent ensures that each work task that uses the source inspected materials proceed only the material has been accepted by the source inspection.

#### **8.4. Work in Process Inspections**

Work in process quality inspections continuously verify compliance project quality standards beginning at the start of a work task, as work is conducted, and continues until the work task is complete.

#### 8.4.1.1. INITIAL JOB-READY INSPECTIONS

For each work task, the Superintendent or a qualified inspector performs job-ready quality inspections to ensure that work activities begin only when they should begin. Job-ready quality inspections verify that conditions conform to the project quality requirements.

#### **8.4.1.2.** Initial Work in process Inspection

For each work task, the Superintendent or a qualified inspector performs an initial work in process inspection when the first representative portion of a work activity is completed.

#### 8.4.1.3. FOLLOW-UP WORK IN PROCESS INSPECTIONS

The Superintendent or a qualified inspector performs ongoing work in process quality inspections to ensure that work activities continue to conform to project quality requirements. Punch Items

If the Superintendent or inspector observes an item for correction prior to a work task completion inspection, the item is identified for correction. During the work task completion inspection each punch item correction is verified.

Any outstanding punch items remaining after the work task completion inspection is deemed a nonconformance.

#### 8.4.2. ADDITIONAL INSPECTION REQUIREMENTS FOR PROCESS TASKS

For each process task, a qualified person inspects the ongoing completion work for conformance to project quality requirements. This is in addition to discrete task completion inspections that are performed one time at the end of a phase of work.

The continuous monitoring inspections are conducted before starting other work activities that may interfere with an inspection.

#### **8.5. WORK TASK COMPLETION INSPECTIONS**

For each work task, the Quality Manager or a qualified inspector inspects the completion of each work task to verify that work conforms to project quality requirements.

Completion quality inspections are performed for each work task. Completion quality inspections are conducted before starting other work activities that may interfere with an inspection.

#### [CompanyName] Quality Manual

Any outstanding punch items remaining after the work task completion inspection is deemed a nonconformance.

#### **8.6.** Inspection of Special Processes

The Quality Manager identifies special processes where the results cannot be verified by subsequent inspection or testing and determines if continuous work in process inspections are required. For these special processes, a qualified inspector continuously inspects the work process.

#### **8.7.** INDEPENDENT MEASUREMENT AND TESTS

The Quality Manager ensures that quality tests that apply to a specific project are clearly identified. Tests for a project include:

- Customer required quality tests as specified by the contract, contract technical specifications, contract drawings, and approved submittals.
- Additional quality tests necessary to assure quality results.

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- Specification references including contract drawing identification number and version, if applicable, and/or contract technical specification number and version, if applicable
- Performing party
- Witness parties
- Certificates required
- Checklists/procedures
- Reference standards

#### 8.11. Inspection and Test Acceptance Criteria

Inspections assess conformance of materials or work for each work task to project quality requirements, including applicable:

- Contract technical specification
- Contract drawings
- Approved shop drawings
- Approved product submittals
- Approved allowances and unit prices
- Product identification requirements
- Approved submittals
- [CompanyName] quality standards

The material or completed work task is accepted only when it meets all project quality requirements.

Description	Reference Standard No.	Reference Standard Title
Inspections and testing for seismic-resisting systems	UFC 3-310-04	Seismic Design for Buildings
Compressive strength mortar samples	ASTM C 780	Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
Compressive strength grout samples	ASTM C 1019	Standard Test Method for Sampling and Testing Grout

#### 8.12. Inspection and Test Status

The status of each quality control inspection or test is clearly marked by tape, tag, or other easily observable signal to ensure that only items that pass quality inspections is accepted.

For each quality controlled work task, the Quality Manager determines the appropriate method of identification to show inspection and test status.

For each quality controlled material, the Quality Manager determines the appropriate method for identifying quality inspection and test status.

#### 8.13. Independent Quality Assurance Inspections

The Quality Manager and/or qualified inspectors perform independent quality assurance inspections that verify that task quality controls are operating effectively.

The Quality Manager selects a representative portion of task completion inspections performed by the Superintendent. Those tasks are independently inspected by the Quality Manager and/or qualified inspectors. The findings are compared to the findings of the inspections performed by the Superintendent. Any deviations are addressed by corrective actions and preventive actions as necessary.

#### 8.14. Inspection and Test Records

#### 8.14.1. INSPECTION RECORDS

The Quality Manager prepares an inspection form for each work task. The Quality Manager lists on the form checkpoints for heightened awareness including:

Initial job-ready inspection requirements

- Inspection and tests
- Work in process inspection requirements
- Completion quality inspections
- Other quality requirements as necessary to reduce quality risks

The person responsible for the inspection, records work task inspection results on the work task inspection form.

#### 8.14.2. TEST RECORDS

Test result data include as appropriate:

- Reference to the inspection and test plan item
- Description or title of the inspection activity
- Drawing identification number and version, if applicable
- Technical specification number and version, if applicable
- Location of the inspection activity
- Acceptance criteria
- Nonconformances
- Validation that nonconformances are corrected, reinspected or retested, and confirmed to meet
   Quality System requirements.
- Any open items to be completed at a later date.
- Inspector's name and signature indicating compliance with all requirements of the Quality System
- Quality rating scores as appropriate
- Date of inspection or test
- Certificate, if applicable
- Conspicuous statement of final result as either "CONFORMS" or "DOES NOT CONFORM"

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#### 9. Nonconformances and Corrective Actions

#### 9.1. OVERVIEW

Should a nonconformance be identified by an inspection there is a systematic method to control the item, correct it, and ensure that project quality is not adversely impacted by the event.

A nonconformance is any item that does not meet project specifications or [CompanyName] Quality System requirements.

#### 9.2. Nonconformances

#### 9.2.1. MARKING OF NONCONFORMANCES AND OBSERVATIONS

When the Quality Manager, Superintendent, inspector, or customer identifies a nonconformance or an observation, the item is quickly and clearly marked by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

#### 9.2.2. CONTROL THE CONTINUATION OF WORK

After the item is marked, the Superintendent determines if work can continue in the affected area:

CONTINUE WORK: When continuing work does not adversely affect quality or hide the defect, work may continue in the affected area while the disposition of the item is resolved. The Superintendent may place limitations on the continuation of work.

STOP WORK ORDER: When continuing work can adversely affect quality or hide the defect, work must stop in the affected area until the disposition of the item resolved. The Superintendent identifies the limits of the affected area. The Superintendent quickly and clearly identifies the boundaries of the stop work area.

#### 9.2.3. NONCONFORMANCE REPORT

#### 9.2.3.1. RECORDING OF NONCONFORMANCES

If nonconformances or observed items exist by the work task completion inspection, the Superintendent or inspector records the nonconformances on a nonconformance report.

The Superintendent sends the nonconformance report to the Quality Manager.

#### 9.2.3.2. QUALITY MANAGER DISPOSITION OF NONCONFORMANCE REPORTS

When the Quality Manager receives a Nonconformance Report, he or she assesses the affect the reported nonconformance has on form, fit, and function. The Quality Manager may assign a disposition of either:

REPLACE: The nonconformance can be brought into conformance with the original specification requirements by replacing the nonconforming item with a conforming item.

REPAIR: The nonconformance can be brought into conformance with the original requirements through completion of required repair operations.

REWORK: The nonconformance can be made acceptable for its intended use, even though it is not restored to a condition that meets all specification requirements. The Quality Manager may specify

#### 11. QUALITY SYSTEM AUDITS

#### **AUDITS and IMPROVEMENT**

#### 11.1. OVERVIEW

Audits ensure that the elements of the [CompanyName] Quality System are functioning as intended.

#### 11.2. PROJECT QUALITY SYSTEM AUDIT

The Quality Manager conducts monthly Project Quality System audits that verify proper operation of the Quality System on a project. At least monthly, the Quality Manager audits:

- Quality system framework
- Quality system management and responsibilities
- Customer contract specifications
- Design control
- Project-specific quality standards
- Project purchasing
- Process control plans
- Inspections and tests
- · Nonconformances and corrective actions
- Preventive actions
- Quality records and documents

The Quality Manager takes corrective actions to ensure compliance with Quality System requirements. The effectiveness of changes is then evaluated and documented.

Requirements for managing audit nonconformances are addressed in section 9.2 Nonconformances.

#### 11.3. COMPANY-WIDE QUALITY SYSTEM AUDIT

At least annually, the Quality Manager audits the suitability and effectiveness of the [CompanyName] Quality System.

The audit assesses:

- [CompanyName] quality improvement activities
- Customer performance evaluations and satisfaction measurement results
- Quality performance measures
- Monthly field reviews
- Internal and external Quality Audit results
- Process performance and product conformance results
- Preventive and corrective action status
- Follow up on actions from previous Management Reviews
- Other changes (i.e., business climate, scope of work changes, etc.) that could affect the Quality System

Changes are initiated to improve Quality System performance. The Quality Manager documents Quality System changes in the [CompanyName] Quality Assurance Manual, initiates needed improvements, and assesses their effectiveness.

## MASONRY INSPECTION CHECKLISTS TABLE OF CONTENTS

Masonry - Concrete Form Masonry Units 04.28.00

Masonry - Concrete Unit Masonry 04.22.00

Masonry - Exterior Stone Cladding 04.42.00

Masonry - Maintenance of Masonry 04.01.00

Masonry - Manufactured Brick Masonry 04.71.00

Project:	Phase:	Con	tract#:		Subcontractor:	Crew:
Compliance Verifica	<u>ution</u>	YES	S NO	Heightened	Awareness Checkpoints	
<ul> <li>□ Compliance with initial jobready requirements</li> <li>□ Compliance with material inspection and tests</li> <li>□ Compliance with work in process first article inspection requirements</li> <li>□ Compliance with work in process inspection requirements</li> <li>□ Compliance with Task completion inspection requirements</li> <li>□ Compliance with inspection and test plan</li> <li>□ Compliance with safety policies and procedures</li> <li>Reported Nonconformances and incomplete items:</li> </ul>				Only potable water is used in cleaning/sealing mixtures Cleaning/sealing procedures successfully tested on samp area Adjacent areas protected from over-spray and runoff from chemicals Personal protective equipment utilized during cleaning/sealing operations Adequate ventilation available during cleaning/sealing operations Joints/openings caulked or sealed to prevent chemical intrusion into structure Areas of mortar loosened by cleaning operations repaired Area to be sealed is free of oils// grease// dirt// and loose material Embedded fittings are secure and sturdy All mortar intact// free of openings// and bonded with masonry/stone units		
Field Mgmt <u>91.4</u> Quality 5 4	3 2 1 Notes:	Scores and Comp	oletio	n Sign-off		
On-Time 5 4	3 2 1 Notes:	·				
Safety 5 4	3 2 1 Notes:					
	D #:and in compliance with contract draw			inces and incomp		
On-Time Score	5 = 100% NO problems 5 = On Time 5 = 100% NO problems	4 = 1 minor problem 4 = Late 4 = 1 minor problem	3 = Late	oot or 2-3 minor by 1 day oot or 2-3 minor	2 = 6+ or major problems 2 = Late by 2 days 2= 4+ or major problem	I = Excessive problems I = Late more than 2 days I = Injury Copyright First Time Quality

Project:	Phase:		Contra	ct#:		Subcontractor:	Crew:		
Compliance Verification	<u> </u>		YES	NO	Heightened	d Awareness Checkpoints			
☐ Compliance with initial job- ready requirements					order/place		·		
☐ Compliance with material inspection and tests					<ul><li>Substrate adequately supports weight of Brick Mason</li><li>Substrate is plumb/even and free from protrusions</li></ul>				
<ul> <li>□ Compliance with work in process first article inspection requirements</li> <li>□ Compliance with work in process inspection requirements</li> </ul>						chors securely installed	om protraciono		
					Veneer only supporting its own weight				
					Brick Masonry not in contact with finished grade				
						nry placed plumb/even a	-		
□ Compliance with Task completion inspection requirements						fittings are secure and s			
						nortar joint type utilized	,		
□ Compliance with inspection and test plan						ntact// free of openings//	and bonded with Brick		
☐ Compliance with	safety policies a	nd procedures			, ,				
	24	Scores and C	ompl	etio	n Sign-off				
Field Mgmt <u>91.45</u>	<u>.01</u>								
Quality 5 4 3	<b>3 2 1</b> Notes:								
On-Time 5 4 3	3 <b>2 1</b> Notes:								
Safety 5 4 3	<b>3 2 1</b> Notes:								
Sign and date*: Cell # / ID #:					Date:				
ask has been verified complete and	in compliance with contract	drawings and specifications exc	cept for non-	conform	ances and incom	nplete items reported above.			
On-Time Score 5 =	100% NO problems On Time 100% NO problems	4 = 1 minor problem 4 = Late 4 = 1 minor problem	3	= Late	oot or 2-3 minor by 1 day oot or 2-3 minor	2 = 6+ or major problems 2 = Late by 2 days 2= 4+ or major problem	<ul> <li>I = Excessive problems</li> <li>I = Late more than 2 days</li> <li>I = Injury</li> <li>Copyright First Time Quality</li> </ul>		