



Electrical Construction Essentials Quality Plan Sample

Selected pages (not a complete manual)

Sample includes:

- ✓ Quality Plan Pages
- ✓ Forms Examples

Contact:
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410-451-8006

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[CompanyName]

Electrical Construction

Quality Assurance/Quality Control Plan

[ProjectName]

[ProjectNumber]

Approved

[QualityManagerName], Quality Manager

Version	Version notes
1.0	Initial issue

PROJECT-SPECIFIC ELECTRICAL QUALITY PLAN

TABLE OF CONTENTS

A. [CompanyName] Quality Policy	4
B. Key Elements of the Electrical Quality Plan	5
C. Project Quality Coordination and Communication	8
D. Project QC Personnel	12
Project QC Job Position Assignments	12
Duties, Responsibilities, and Authority of QC Personnel.....	12
Quality Responsibilities	12
Project QC Organization Chart	15
E. Personnel Qualifications	16
Personnel Certification Requirements	17
Training.....	17
F. Qualification of Third-Party Inspection/Testing Companies and Subcontractors and Suppliers	19
Qualification of Testing Laboratories	19
G. Electrical Project Quality Specifications	21
Compliance with Industry Electrical Standards	22
H. Electrical Inspection and Test Plan	24
Inspection and Testing Electrical Standards	25
Control of Inspection, Measuring, and Test Equipment.....	25
I. Electrical Work Task Quality Inspections.....	27
Work Tasks Series of Inspections	27
Daily Quality Control Report.....	27
J. Quality Control of Corrections, Repairs, and Nonconformances	31
K. Project Completion Inspections	33
L. Quality Assurance Surveillance.....	36
M. Control of Quality Records and Documents	38
N. Servicing and Warranty	39

B. KEY ELEMENTS OF THE ELECTRICAL QUALITY PLAN

Key elements of the [CompanyName] Quality Assurance/Quality Control Plan include:

Quality Management and Responsibilities. [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Maintain a documented quality system consisting of a quality manual with policies and procedures.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project
- Systematically maintains quality system documents and records.

Quality Control Personnel. [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Appoint a Quality Manager, Superintendent, and Project Manager to each project, each with well-defined quality responsibilities and the authority to carry them out.
- Have well-defined quality responsibilities for every employee with specific quality responsibilities for key job positions.
- Plan project quality records and documentation that will be maintained.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project
- Enforce policies that monitor work conditions before and during work so that quality results are assured.

Project Quality Coordination and Communication. [CompanyName] tightly controls the construction process to ensure quality results. We:

- Plan quality communications through meetings, reporting requirements, and points of contact.
- Have a project startup meeting to communicate project goals and expectations.
- Conduct preparatory meetings in advance of each scheduled work task to communicate requirement details and coordinate work activities.

Quality Assurance Surveillance. [CompanyName] audits the quality system to assure it is operating effectively. We:

- Audit the operation of the quality system on each project for conformance to the Project Quality Assurance/Quality Control Plan and the [CompanyName] Quality System requirements.
- Conduct annual company-wide audits to evaluate effectiveness of the [CompanyName] Quality System and improve its operation.

Employee Qualifications. [CompanyName] ensures that only knowledgeable, capable employees carry out the planning, execution, and control of our projects. We:

- Identify employee qualification requirements, including licensing requirements, training qualifications, responsibilities, and authority for each job position.
- Train field employees on quality standards and procedures for their job position.
- Validate employee capabilities before they are assigned to carry out quality job responsibilities.

- Review ongoing employee qualifications and evaluate quality practices and performance as part of the employee performance management process.

Qualification of Subcontractors and Suppliers. [CompanyName] purchases only from subcontractors and suppliers that consistently meet [CompanyName] standards for quality. We:

- Clearly define outside organization qualification requirements including licensing requirements, compliance with specific quality standards, quality responsibilities, qualification of personnel and quality improvement processes.
- Validate capabilities to meet project quality requirements at planned production levels.
- Verify ongoing quality performance.

Project-Specific Quality Standards. [CompanyName] clearly defines standards and specifications that apply to each project. We:

- Identify all relevant regulations, codes and industry standards.
- Identify specifications for materials that meet contract as well as regulatory requirements.
- Specify quality and certification requirements for materials and equipment that affect quality.
- Identify special requirements for calibration of quality measuring devices.
- Supplement the contract and published standards with [CompanyName] quality standards as required to reduce quality risks and assure quality results.

Inspections and Test Plan. [CompanyName] quality inspection processes ensure that all work activities comply with the documented standards and specifications. We:

- Identify inspections and tests required by contract specifications and industry standards.
- Record the result of each quality inspection and test.
- Use independent laboratories certified by nationally recognized accreditation agencies

Work Task Quality Inspections. [CompanyName] quality inspection processes ensure that all work activities comply with the documented standards and specifications. We:

- Identify required quality inspections and tests at key milestones during the project.
- Identify each work task that is subject to a series of quality inspections and quality control activities
- Conduct a series of quality inspections for each construction task: before work begins, at first article completion, while work is in process, and at completion.
- Inspect all materials before use.
- Record the result of each work task inspection.

Quality Control of Corrections and Nonconformances. [CompanyName] nonconformance control processes ensure that we prevent all nonconformances from cover-up, inadvertent use, and corrected. We:

- Mark the item to clearly identify it for correction.
- Make corrections in a timely manner and validate their effectiveness.
- Require customer approval before accepting any nonconforming items.
- Identify nonconformance items for future prevention.
- Address nonconformance causes systematically by updating standards and specifications; improving process and employee capabilities; setting new requirements for outside organizations; and enhancing the effectiveness of field and third-party quality inspections.
- Validate actions taken to prevent nonconformances and their effectiveness.

Project Completion Inspections. [CompanyName] conducts a series of inspection near the completion of major milestones and end of the project to assure that the contracted work is completed to specifications. We:

- Perform a rigorous inspection by senior managers independent of production.
- Correct any deviations and reinspect prior to submittal to the customer for final review.
- Participate in the customer's final inspection quickly address any issues found.

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D. PROJECT QC PERSONNEL

[CompanyName] ensures that quality control personnel remain independent from the pressures of production through our organizational lines of authority as defined by our QC Organization Chart.

The President appoints a Quality Manager, Superintendent, and Project Manager, and then assigns each with specific quality responsibilities and authorities of their job position.

PROJECT QC JOB POSITION ASSIGNMENTS

Table D-1 shows the job positions assigned to personnel on this project.

Table D-1

QC Personnel Name	Job Position
[ProjectManagerName]	Project Manager
[SuperintendentName]	Superintendent
[QualityManagerName]	Quality Manager
[SafetyManagerName]	Safety Manager

DUTIES, RESPONSIBILITIES, AND AUTHORITY OF QC PERSONNEL

The President has overall responsibility for implementation safety including performance and results of the [CompanyName] Quality System, including quality on this project.

QC personnel assigned to this project have the duties, responsibilities and authority defined by their job position.

Key project personnel have accepted their appointments and declared their ability to carry out the appointments.

QUALITY RESPONSIBILITIES

PROJECT QUALITY MANAGER: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY

The Quality Manager is responsible for ensuring the overall effectiveness of the Quality System for a specific project. Regardless of other duties, the Quality Manager is responsible for:

- Planning project quality controls required by the [CompanyName] quality systems and contract requirements
- Fully implementing all provisions of the [CompanyName] Quality System and related documents on the project.
- Manage the operation of the [CompanyName] Quality System on the project.
- Implement and manage all phases of quality control

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- Communicating project-specific quality requirements to all affected departments, subcontractors and suppliers, and customers
- Ensuring that the Quality System is established and implemented by persons doing work that impacts quality
- Monitoring progress of activities
- Ensuring that the Quality System is maintained
- Acting as the project quality liaison with parties outside the company on matters relating to quality
- Reporting to senior management on performance of the Quality System, including needed improvements
- Review and approval of all project Quality System records
- Review and approval of project quality-related contract submittals
- Managing all project inspection and quality control activities
- Controlling corrective actions
- Resolving quality nonconformances

The Quality Manager has the authority to:

- Stop work when continuing work may adversely affect quality or cover up a defect
- Prevent the use of equipment or materials that may adversely affect quality or cover up a defect
- To direct the removal and replacement of any non-conforming work, equipment, or material by [CompanyName], any subcontractor, or any supplier.
- Suspend work and/or supply of materials by any staff member, subcontractor personnel, or supplier as deemed necessary to assure quality results.

Alternate Quality Managers acting in the role of the project Quality Manager has the same quality duties, responsibilities and authority as the project Quality Manager.

SUPERINTENDENT: QUALITY DUTIES, RESPONSIBILITIES, AND AUTHORITY

A Superintendent verifies that work performed by subcontractors and suppliers and [CompanyName] work crews conforms to [CompanyName] quality standards. The President appoints one or more Superintendents for each project.

A Superintendent has specific responsibilities for:

- Ensuring that work meets government regulatory and code requirements, customer requirements, contract requirements, contract technical specifications, contract drawings, approved contract submittals, and company quality standards and specifications
- Ensuring that subcontractors and suppliers begin work in accordance with [CompanyName] start-work policies
- Ensuring that subcontractors and suppliers receive a notice to work only when conditions will not adversely affect quality results
- Conducting quality inspections, tests, and recording findings
- Accurately assessing subcontractor quality and on-time performance
- Ensuring that quality standards are achieved before approving subcontractor or work crew completion of work

The Superintendent has the authority to:

- Stop work when continuing work may adversely affect quality or cover up a defect
- Prevent the use of equipment or materials that may adversely affect quality
- Direct the removal or replacement of any non-conforming work, equipment, or material
- Suspend work and/or supply of materials as deemed necessary to assure quality results

H. ELECTRICAL INSPECTION AND TEST PLAN

[CompanyName] identifies inspections and tests that will be performed during the project. A test report is completed for each test. The test reports are then used for monitoring compliance to the plan and tracking results.

If independent laboratories are required to perform tests or quality inspections, we ensure that the laboratories are certified by a nationally recognized testing accreditation organization as appropriate for the scope of the inspection or test.

The Quality Inspection and Test Plan form lists inspections and tests (other than work task inspections) that will be performed on this project.

Results of inspections and tests will be recorded on the Inspection and Test Form.

Form exhibits are included as an exhibit in this subsection.

Selected Pages

INSPECTION AND TESTING ELECTRICAL STANDARDS

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

Inspection and Testing Standards			
Division	Description	Reference Standard No.	Reference Standard Title
28	Combustible gas detector preliminary and acceptance testing	ANSI/ISA 12.13.01	Performance Requirements for Combustible Gas Detectors
27	Intercommunication system intelligibility test	ASA S3.2	Method for Measuring the Intelligibility of Speech Over Communication Systems
26	Direct-current high-potential test for conductors	IEEE 400.2	Guide for Field Testing of Shielded Power Cable Systems Using Very Low Frequency (VLF)
26	Ground rod resistance to ground	IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
26	Visual and mechanical inspections and electrical tests	NETA ATS	Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
28	Preliminary and acceptance testing	NFPA 72	National Fire Alarm and Signaling Code
27	Fiber optic cables power budget and bandwidth	TIA-455-78-E	FOTP-78 Optical Fibres - Part 1-40: Measurement Methods and Test Procedures - Attenuation
27	Optical time domain reflectometer tests	TIA-455-78-B	FOTP-78 Optical Fibres - Part 1-40: Measurement Methods and Test Procedures - Attenuation
27	Telecommunications cabling inspection, verification, and performance tests	TIA-568-C.1	Commercial Building Telecommunications Cabling Standard
27	Optical fiber end-to-end attenuation tests	TIA-568-C.3	Optical Fiber Cabling Components Standard

CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

Inspection, measuring, and test equipment that will be controlled, calibrated, and maintained.

The Quality Manager evaluates the project requirements and determines if there are measuring devices that require controls to assure quality results.

For each type of device, the Quality Manager identifies:

- Restrictions for selection
- Limitations on use.
- Calibration requirements including the frequency of calibration. All calibrations must be traceable to national measurement standards.

When a measurement device is found not to conform to operating tolerances, the Quality Manager validates the accuracy of previous measurements.

**[CompanyName]
Inspection and Test Plan and Log**

Project Number	Project Name	
[ProjectNumber]	[ProjectName]	

Item	Spec Section Number	Spec Section Title	Applicable Standard	Inspections & Tests Description	# of Tests /Inspections Req'd.	Time Schedule/ Frequency	Inspection/Test By <small>(All tests verified by Superintendent and/or QC Manager)</small>	Sample Req'd. Yes/No	Unique characteristics of QC Service
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									

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K. PROJECT COMPLETION INSPECTIONS

[CompanyName] conducts a series of inspections near the end of each project to assure that the contracted work is completed to specifications.

Near the end of the project, or a milestone, the Quality Manager, Superintendent, and Project Manager participate in the inspection of the completed project and verify conformance to contract specifications. Any deviations are corrected and reinspected before submitting the project to the customer for final inspection.

If the customer performs a final inspection, corrections are quickly addressed, reinspected by the Quality Manager, and then submitted for customer final review.

A Record of each of the inspections will be maintained on the Project Completion Inspection form. If punch items are discovered during the inspection, a record of the punch items and their correction will be maintained on the Punch List form. Project Completion Inspection and Punch List form exhibits are included as an exhibit in this subsection.

Selected Pages

[CompanyName] Project Completion Inspection Form			
Project ID:	Project Name:	Location/Area:	
[ProjectNumber]	[ProjectName]		
Compliance Verification <input type="checkbox"/> Compliance with material inspection and tests <input type="checkbox"/> Compliance with inspection requirements <input type="checkbox"/> Compliance with functional tests if required <input type="checkbox"/> Compliance with inspection and test plan <input type="checkbox"/> Punch lists corrections complete		Heightened Awareness Checkpoints <input type="checkbox"/> [Insert items identified at project startup, pre-assembly and status meetings] <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Notes:			
Reported Nonconformances:			
Verification of Project Completion (sign and date)			
Project Superintendent verified complete to specifications (sign and date)		Sign and date*:	
Quality Manager verified complete to specifications (sign and date)		Sign and date*:	
<small>* On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.</small>			

Selected Pages

[CompanyName] Punch List						
Project ID		Project Name		Punch List Type		
[ProjectNumber]		[ProjectName]		<input type="checkbox"/> Features of Work _____		
Inspection Date		Preparer		<input type="checkbox"/> Project Final Punch <input type="checkbox"/> Pre-Final Customer Inspection <input type="checkbox"/> Final Acceptance Inspection		
Item	Location	Description	Due Date	Item Completion Verification		
				Compl. Date	Super Initial	QA Initial
Punch List Completion Date		Final QA Sign-off		Remaining Nonconformances Reported ID # and Description		

Selected Pages

LIST OF INCLUDED ELECTRICAL INSPECTION FORMS

- Conduit for Electrical Systems
- Electrical and Cathodic Protection
- Enclosed Bus Assemblies
- Exterior Lighting
- Grounding and Bonding for Electrical Systems
- Identification for Electrical Systems
- Interior Lighting
- Low-Voltage Circuit Protective Devices
- Low-Voltage Controllers
- Low-Voltage Electrical Power Conductors and Cables (<600V)
- Low-Voltage Electrical Service Entrance
- Low-Voltage Switchgear
- Low-Voltage Transformers
- Raceway and Boxes for Electrical Systems
- Switchboards and Panelboards

Electrical - Conduit for Electrical Systems 26.05.33.13

Project:	Phase:	Contract#:	Subcontractor:	Crew:
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<p><u>Compliance Verification</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Compliance with initial job-ready requirements <input type="checkbox"/> Compliance with material inspection and tests <input type="checkbox"/> Compliance with work in process first article inspection requirements <input type="checkbox"/> Compliance with work in process inspection requirements <input type="checkbox"/> Compliance with Task completion inspection requirements <input type="checkbox"/> Compliance with inspection and test plan <input type="checkbox"/> Compliance with safety policies and procedures <p>Reported Nonconformances and incomplete items:</p>	<p><u>FTQ 2TQ Heightened Awareness Checkpoints</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> <input type="checkbox"/> Cuts for Conduits in structural members approved by ENGINEER <input type="checkbox"/> <input type="checkbox"/> Firestops installed at penetrations through fire partitions// fire walls// smoke partitions// or floors <input type="checkbox"/> <input type="checkbox"/> Penetrations through floor// exterior wall and roof sealed and made watertight <input type="checkbox"/> <input type="checkbox"/> Excess wiring// insulation// ties// etc. removed from Conduits <input type="checkbox"/> <input type="checkbox"/> Conduits secured to prevent movement and chafe <input type="checkbox"/> <input type="checkbox"/> Remaining snake line labeled at both ends <input type="checkbox"/> <input type="checkbox"/> Conduit bends do not exceed minimum for size of Conduit used and are even <input type="checkbox"/> <input type="checkbox"/> Metal Conduits bonded and grounded <input type="checkbox"/> <input type="checkbox"/> Conduits are mechanically continuous <input type="checkbox"/> <input type="checkbox"/> Flexible connections to equipment subject to vibrations
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FTQ Scores and Completion Sign-off

Field Mgmt.-91.45.01

Quality 5 4 3 2 1 *Notes:*

On-Time 5 4 3 2 1 *Notes:*

Safety 5 4 3 2 1 *Notes:*

Sign and date*: Cell # / ID #: _____ Signed: _____ Date: _____

Task has been has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

<u>Quality Score</u>	5 = 100% NO problems	4 = 1 minor problems	3 = Hotspot or 2-3 minor	2 = 6+ or major problems	1 = Excessive problems
<u>On-Time Score</u>	5 = On Time	4 = Late	3 = Late by 1 day	2 = Late by 2 days	1 = Late more than 2 days
<u>Safety Score</u>	5 = 100% NO problems	4 = 1 minor problem	3 = Hotspot or 2-3 minor	2 = 4+ or major problem	1 = Injury



For More Information:

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