



HVAC Maintenance Essentials Quality Plan Sample

Selected pages (not a complete plan)

Sample includes:

- ✓ Quality Plan Pages
- ✓ Standard Forms Examples
- ✓ Inspection Checklist Examples

Contact:

First Time Quality

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[CompanyName]

HVAC Maintenance

Quality Assurance/Quality Control Plan

[ProjectName]

[ProjectNumber]

Effective Date: [Date]

Version	Version notes
[Date]	Initial issue

Approved

[QualityManagerName], Quality Manager

CONTRACT-SPECIFIC HVAC MAINTENANCE QUALITY PLAN

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E. HVAC MAINTENANCE PERSONNEL QUALIFICATIONS

[CompanyName] ensures that only knowledgeable, capable employees carry out the planning, execution, and control of the contract.

We train our employees on quality standards and procedures based on contract requirements as well as their job positions. Then we validate their capabilities before they are assigned to carry out their quality job responsibilities on the contract. Ongoing monitoring of performance continually validates qualifications of each employee.

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.

PERSONNEL CERTIFICATION REQUIREMENTS

Personnel certifications are required for the following:

Certification or License Title	Reference Standard No.	Reference Standard Title
Welders to structural steel	AWS D1.1/D1.1M	Structural Welding Code - Reinforcing Steel
Welders for boilers and associated piping	ASME BPVC SEC IX	BPVC Section IX-Welding and Brazing Qualifications
Refrigerant Recovery Technician	EPA 608	ASE Automotive Service Excellence

TRAINING

We train our employees on quality standards and procedures based on contract requirements as well as their job positions. Then we validate their capabilities before they are assigned to carry out their quality job responsibilities on the contract. Ongoing monitoring of performance continually validates qualifications of each employee.

After a training activity is completed, [CompanyName] keeps of record of both the training activity and the training participants.

H. HVAC MAINTENANCE INSPECTION AND TEST PLAN

[CompanyName] identifies inspections and tests that will be performed during the contract. 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 contract.

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

Form exhibits are included as an exhibit in this subsection.

INSPECTION AND TESTING HVAC STANDARDS

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

Description	Reference Standard No.	Reference Standard Title
HVAC ductwork tests	SMACNA 1143	HVAC Air Duct Leakage Test Manual
Test heat trace cable system	IEEE 515	Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Heat Tracing for Industrial Applications
HVAC testing, adjusting, and balancing	AABC MN-1	National Standards for Total System Balance

CONTROL OF INSPECTION, MEASURING, AND TEST EQUIPMENT

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

The Quality Manager evaluates the contract 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.

I. MAINTENANCE WORK TASK QUALITY

INSPECTIONS

[CompanyName] identifies a list of work tasks, phases of production, which will be quality controlled.

WORK TASKS SERIES OF INSPECTIONS

Each work Task is subject to a series of inspections; before, during, and after the work is complete. Each inspection verifies compliance with full scope of the relevant specifications; not limited to checkpoints for heightened awareness.

- The initial task-ready inspection occurs when crews are ready to start work and ensures that work begins only when it does not adversely impact quality results.
- Incoming material inspections verify that materials are as specified and meet all requirements necessary to assure quality results.
- Work-in-process inspections continuously verify that work conforms to contract specifications and workmanship expectations. Work continues only when it does not adversely impact quality results.
- At completion of the Task an inspection verifies that work, materials, and tests have been completed in accordance with contract quality requirements. When appropriate, functional tests are performed.

Inspection results are recoded and maintained as part of the contract files.

SPECIAL PROCESS INSPECTIONS

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.

MATERIAL QUALITY INSPECTION AND TESTS

Material quality inspections and tests ensure that purchased materials meet purchase contract quantity and quality requirements. The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to contract quality requirements.

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.

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

[CompanyName] Quality Controlled Maintenance Task List			
Contract ID	Contract Name	Preparer	Date
[ProjectNumber]	[ProjectName]		

	Task Order	Weekly	Monthly	Quarterly	Semi-Annually	Annually
				Quarterly	Semi-Annually	
					Semi-Annually	
				Quarterly		
						Annually
			Monthly	Quarterly	Semi-Annually	Annually
		Weekly	Monthly	Quarterly	Semi-Annually	Annually
		Weekly	Monthly	Quarterly	Semi-Annually	Annually
					Semi-Annually	Annually
					Semi-Annually	Annually
					Semi-Annually	Annually
					Semi-Annually	Annually

Selected Pages

<p>[CompanyName] Periodic Maintenance Record</p>
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Facility		
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Equipment and/or Handbook Reference	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1xWeekly												
2x Weekly												

Questions? Call First Time Quality 410-451-8006

Equipment and/or Handbook Reference	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1 x Monthly												
2 x Monthly												
Quarterly												
	Scheduled			Completed			Scheduled			Completed		

Selected Pages

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Equipment and/or Handbook Reference	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Total Tasks Required												
Total Tasks Accomplished												

Selected Pages

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[CompanyName]

HVAC Inspection Checklist Forms

Selected Pages

INSPECTION CHECKLIST

TABLE OF CONTENTS

HVAC - Air Outlets and Inlets 23.37.00
HVAC - Air Terminal Units 23.36.00
HVAC - Breechings// Chimneys// and Stacks 23.51.00
HVAC - Central Cooling Equipment 23.60.00
HVAC - Commissioning of HVAC 23.08.00
HVAC - Cooling Towers 23.65.00
HVAC - Facility Fuel-Oil Piping 23.11.13
HVAC - Facility Fuel-Storage Tanks 23.13.00
HVAC - Facility Natural-Gas Piping 23.11.23
HVAC - Furnaces 23.54.00
HVAC - Heating Boilers 23.52.00
HVAC - HVAC Air Cleaning Devices 23.40.00
HVAC - HVAC Ducts and Casings 23.31.00
HVAC - HVAC Fans 23.34.00
HVAC - HVAC Insulation 23.07.00
HVAC - HVAC Piping and Pumps 23.20.00
HVAC - HVAC Water Treatment 23.25.00
HVAC - Indoor Central-Station Air-Handling Units 23.73.00
HVAC - Instrumentation and Control for HVAC 23.09.00
HVAC - Refrigerant Piping 23.23.00
HVAC - Testing// Adjusting// and Balancing for HVAC 23.05.93

Selected Pages

HVAC - Instrumentation and Control for HVAC 23.09.00

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"/> Operational settings of adjustment devices (valves// dampers// splitters// etc.) marked on equipment <input type="checkbox"/> <input type="checkbox"/> Controls isolated from drafts// vibration// and heat transfer surfaces <input type="checkbox"/> <input type="checkbox"/> Readouts and indicators clearly visible <input type="checkbox"/> <input type="checkbox"/> Dampers do not bind <input type="checkbox"/> <input type="checkbox"/> Instrumentation and Controls tested across full operational range <input type="checkbox"/> <input type="checkbox"/> Valve operational positions (open vs. closed) clearly indicated <input type="checkbox"/> <input type="checkbox"/> Each control device (valves// dampers// splitters// panels// etc.) uniquely labeled and identified <input type="checkbox"/> <input type="checkbox"/> Service Manuals supplied to Owner <input type="checkbox"/> <input type="checkbox"/> Owner instructed in use and maintenance of HVAC Instrumentation and Controls <input type="checkbox"/> <input type="checkbox"/> Operational set points noted in Operation and Maintenance Manuals
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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 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 problem	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

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For More Information:

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