



Quality Assurance in Weatherization

This resource provides a guide to quality assurance in weatherization. It details approaches to ensure weatherization projects meet the highest standards, offering valuable insights for contractors, inspectors, and anyone involved in ensuring high-quality weatherization work. This document also explains the role of Quality Control Inspectors (QCIs) within the Department of Energy's (DOE) Weatherization Assistance Program (WAP), and provides an overview of what they involve and links to example inspection forms.



BEST PRACTICES FOR ENSURING QUALITY WEATHERIZATION PROJECTS

The following strategies will help to ensure weatherization work consistently meets the highest standards. These practices are designed to enhance the effectiveness and efficiency of weatherization efforts, ensuring compliance with all necessary guidelines, and improving overall project outcomes.

- **Take a Systematic Approach to Quality Assurance:** Develop and follow a systematic approach to quality assurance. This involves regular self-checks at different stages of the weatherization process, such as post-installation or pre-final inspection, to ensure all aspects of the work meet the required standards. (For an example of these kinds of self-checks, see *Quality Assurance Checklist for Weatherization Projects* below.)
- **Keep Detailed Records and Documentation:** Keep detailed records of all work performed, materials used, and any challenges encountered. Keep a digital log of all activities, including photographs of completed work, to provide clear evidence of compliance and quality.
- **Utilize Checklists:** Make use of comprehensive checklists that align with the Weatherization Assistance Program's Standard Work Specifications (SWS) and state-specific guidelines. This helps ensure that no critical steps are missed and standards are consistently met. Regularly update your checklists to reflect any changes in guidelines to ensure your projects always align with current standards.

- **Utilize Peer Reviews and Cross-Checking:** Encourage peer reviews within your team (in other words, team members checking each other's work). Having another set of eyes review the work can catch issues that might be overlooked.
- **Provide Regular Training and Updates:** Stay informed about the latest standards and techniques in weatherization. Regular training sessions can help your team stay up-to-date and maintain high-quality work.
- **Focus on Continuous Improvement:** Encourage a culture of continuous improvement within your team. Scheduling weekly team meetings to review and discuss ongoing work can help foster a collaborative environment for learning and help identify ways to enhance efficiency and effectiveness.
- **Create Feedback Mechanisms:** Implement systems to learn from past inspections. After each project, hold a debrief session to discuss what went well, and what could be improved, based on inspection feedback. Understanding mistakes can help avoid them in future projects.



QUALITY ASSURANCE CHECKLIST FOR WEATHERIZATION PROJECTS

This checklist is designed for weatherization crews to ensure all aspects of the work are up to standard at any stage of the project.

Pre-Completion Checks

- ☐ **Verify Adherence to Work Plan:** Ensure all work completed aligns with the detailed work plan.
- ☐ **Check Compliance With State Field Guides:** Confirm that all work meets the specific requirements outlined in the relevant state field guides.
- ☐ **Assess Environmental Impact:** Ensure that all work follows environmental regulations and best practices, such as proper disposal of materials.
- ☐ **Verify Code Compliance:** Ensure that all work adheres to required building codes and regulations.
- ☐ **Review Safety Standards:** Double-check that all safety standards and protocols have been followed, such as compliance with Occupational Safety and Health Administration (OSHA) regulations and required health and safety measures.

Quality Checks

- ❑ **Inspect Material and Work Quality:** Ensure that all materials used are of the required standard and that workmanship meets or exceeds quality expectations.
- ❑ **Check Energy Efficiency Measures:** Verify that all installed energy efficiency measures are correct and functional.
- ❑ **Check Sealing and Insulation:** Check the quality of sealing and insulation work for gaps or deficiencies. After installation, use thermal imaging cameras to check for uniform insulation coverage.

Diagnostic Testing

- ❑ **Perform Required Diagnostic Tests:** Conduct all necessary diagnostic tests to ensure systems are working efficiently and safely.
- ❑ **Document Test Results:** Record the results of diagnostic tests for reference and verification. Use standardized forms for recording test data, making it easy to reference during final inspections.

Documentation and Recordkeeping

- ❑ **Maintain Complete Documentation:** Ensure all project documentation is complete, accurate, and ready for inspection.
- ❑ **Conduct Client Education:** If needed, provide the homeowner with information on the improvements made and how to maintain them.

Final Review

- ❑ **Conduct a Final Walk Through:** Perform a final review of the work site to ensure it is clean and that the project has been completed to satisfaction.
- ❑ **Prepare for Inspection:** Organize all necessary documentation and prepare to present the completed work to the QCI who will conduct a Quality Control Inspection (see below for more information on QCIs in the Weatherization Assistance Program).

Sign-Off

- ❑ **Final Contractor Sign-Off:** Confirm that all checklist items are completed and sign off on the project as ready for inspection. If needed, complete the request for inspection forms.



WHAT IS A QUALITY CONTROL INSPECTION?

The DOE's Weatherization Assistance Program establishes a comprehensive Quality Work Plan that includes specific requirements for quality control.

A key component of the plan is the procedure for final inspections, which are completed by a certified QCI. Quality Control Inspectors are residential energy efficiency experts possessing skills outlined in the Job Task Analysis (JTA). They are tasked with ensuring the completion, appropriateness, and quality of weatherization work. This includes conducting thorough inspections and diagnostic testing.

To ensure the highest standards of quality and compliance in weatherization work, final inspections must include the following:

- **Verification of Alignment With Quality Work Plan:** Final inspections must follow the guidance specified in Section 1 of the DOE Weatherization Assistance Program Quality Work Plan.
- **Verification of Comprehensive Client File Documentation:** Every client file must contain documentation certifying the completion of a final inspection by a certified QCI.
- **Verification of Energy Audit:** The final inspection must involve a detailed review of the energy audit that verifies the accuracy of the data collected, the inputs into energy audit software, and the allowability of the energy efficiency measures listed on the work order.
- **Verification of Energy Efficiency Measures:** The inspection must verify that all energy efficiency measures have been implemented correctly, are functional, and are in line with the energy audit.
- **Verification of Safety Compliance:** The inspection must ensure that all safety standards and protocols have been rigorously followed and documented throughout the project.
- **Issue Resolution:** The QCI must identify and document any issues or discrepancies found during the inspection and outline the steps needed to resolve them.
- **Client Engagement and Feedback:** During the inspection process, it is critical to communicate clearly with the client to address any concerns they may have and gather feedback.



EXAMPLE QUALITY CONTROL INSPECTION FORMS

The example forms below can be used as a reference for creating your own inspection documents and processes. This can streamline the inspection process and ensure a systematic approach to quality assurance in weatherization projects.

Connecticut WAP QCI Final Inspection Form



**Minnesota WAP Quality Control
Inspection Form**

**New York WAP Quality Control
Inspection Form**



Kentucky WAP QCI Final Inspection Checklist

Indiana DOE WAP QCI Monitoring Form



**Arizona WAP Quality Control
Inspection Checklist**