

Building Envelope Improvement (672) Requirement Sheet

2016 Environmental Quality Incentives Program (EQIP)

Tennessee

Definition: Development and implementation of improvements to reduce, or improve the energy efficiency of on-farm energy use.

Eligibility: Non-residential structures and energy using systems where reducing energy use is the identified goal.

Purpose: This practice may be applied as part of a conservation management system to reduce energy use.

Requirements: Equipment and material installed for this practice shall be in conformance with the energy audit completed through Conservation Activity 122, 124, 128 and/or ASABE Standard S612, Performing On-Farm Energy Audits.

Other items include:

- Work performed shall conform to all applicable standards, codes, laws and regulations.
- Satisfy Plan and Specification requirements set forth in Practice Standard 672, August 2013 as well as the approved Energy Audit.
- Comply with NRCS-TN Specification 672, March 2015. (See attached Specification 672)

Scenario Eligibility: Only practices that are recommended for energy savings in the Energy Audit are eligible for implementation.

Operation and Maintenance: An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and safety requirements. (See EFOTG for O & M Plan).

Producer requirements for payment: Install practice according NRCS standards specifications and requirements. Payment is made following certification by appropriate NRCS staff with engineering job approval authority or acceptance by NRCS staff that all required items have been performed and appropriate submittals have been obtained.

Attachments: 672 Specifications

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION
Building Envelope Improvement CODE 672**

1. SCOPE

This specification sets forth requirements needed for implementation of Building Envelope Improvements.

2. EQUIPMENT AND MATERIAL

Equipment and material installed for this practice shall be in conformance with the energy audit completed through Conservation Activity Plan 122, 124, 128 and/or ASABE Standard S612, Performing On-farm Energy Audits.

3. DESIGN

Any improvements related to building wall conversions and/or involve the use of spray foam, batt or blown insulation, requires approval by the State Conservation Engineer.

4. SUBMITTALS/CERTIFICATIONS

The Producer or Installer shall furnish the NRCS written certification from the manufacturer that furnished equipment and materials conform to the requirements of this specification, the energy audit and Code 672. Product submittals are required to be submitted to NRCS for approval prior to installation.

The Producer or Installer shall certify that the installation of all furnished equipment and material meets all codes, laws and regulations.

The Installer or Vendor shall furnish warranty certifications, spare parts lists, service bulletins/manuals, and instructions covering the operation and maintenance of the furnished equipment to Producer.

5. INSTALLATION

Installation shall conform to all applicable NRCS standards and specifications, manufacture recommendations and guidance, codes, laws, and regulations.

6. OPERATION AND MAINTENANCE (refer to EFOTG for fillable form)

New, replacement, or retrofit systems and related components or devices shall be operated and maintained in accordance with the manufacturer's recommendations.

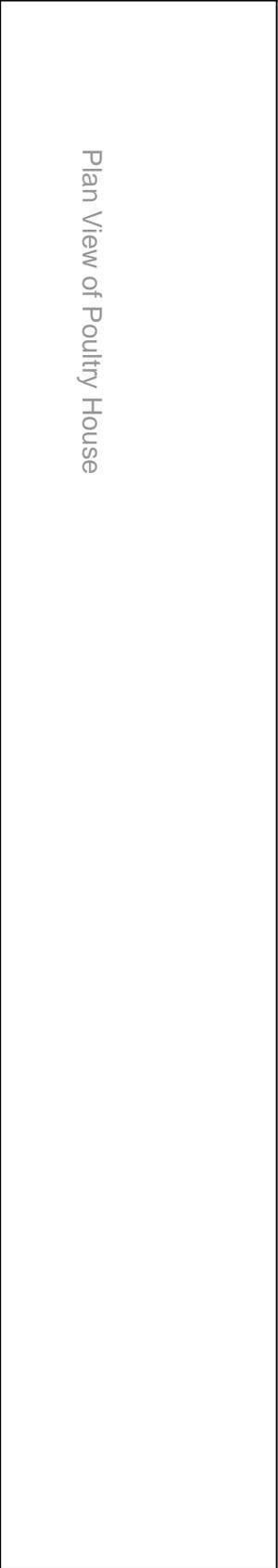
The following records will be kept, retained and updated for a minimum of five years from the beginning of operation of the installed new, replacement, or retrofitted system.

- Types and amounts of fuel used (gallons of fuel or BTU equivalents) in the system(s), or electricity used (kilowatt hours) for higher efficiency or on farm electrical generation that has replaced an existing system.
- Documentation of maintenance conducted on the new, replacement, or retrofitted system and related components or devices.

7. INSPECTION OF RECORDS

NRCS shall have the right to inspect the installed equipment and material throughout the life of this practice. For five years, NRCS shall have the right to review and inspect Producer records as outlined in Section 5, above.

Zone Diagram: Use the plan view below to indicate general zones of similar construction and insulation that will be improved at this time, and label A, B, C, etc. as needed. Indicate NORTH and note the FANS end vs the INLETS end.



Description of Existing Building Envelope

(Circle items as appropriate or write-in. You need only describe existing building envelope which will be improved at this time. Make note of zones from above as appropriate.)

Attic/Roof Insulation

- 1) blown-in cellulose, 2) blown-in fiberglass, 3) paper-faced batts, 4) Styrofoam layers, or
- 5) _____

What is typical thickness?

Typical condition: good, light damage, major deterioration

Wall Structure

- 1) framing is the only lumber present in the wall, 2) continuous layer of two-bys, plywood, OSB, or
- 3) _____ What is typical thickness?
- Is a window opening present?

Exterior Building Panels

- 1) corrugated sheet metal or 2) _____

Wall Insulation

- 1) nothing, 2) paper-faced batts, 3) sprayed-on cellulose, spray foam, or 4) _____

What is typical thickness?

Typical condition: good, light damage, major deterioration

Insulation Protection: nothing, plywood or OSB, dense spray-foam, or _____

- Sealant has been applied to:
- 1) nowhere, 2) junction of wall with stem wall (footing), 3) eaves, 4) gable ends, 5) ridge cap,
 - 6) miscellaneous holes, 7) around door frames, 8) around fan housings, 9) _____

Additional Information

Design and Description of Improvements

Provide specification sheet to producer and discuss.

- How will the attic/roof insulation be improved?
- How will the wall structure and insulation be improved?
- Where will sealant be applied?

Include here any design guidance details, such as the required added R-value for the attic (and the associated inches or bags of insulation required) etc.

Confirm the producer's desired method of wall insulation or sidewall renovation. Initiate engineer concurrence if necessary.

Producer and Contract No. _____

ID of Poultry House _____

Width: _____ (ft) Length: _____ (ft)

Area: _____ (sf)

Checkout Actions

Attic Insulation

- 1) Review the practice specifications.
- 2) Verify and record the nominal length, width, and area of the building.
- 3) Determine the average depth of added insulation across the building attic using one of the following methods:
 - a. an estimate of the blown-in-place volume of each bag, a tally of the number of bags used for the house, and a calculation of the average depth across the attic, OR
 - b. an in-the-attic ruler measurement of the average depth of insulation added.

FEATURE MEASURE:
NOMINAL AREA OF BUILDING IN SQUARE FEET

Installed Depth of Attic Insulation

Tables for required depth of insulation to add for common attic loose-fill insulation materials have been calculated and filed in eFOTG. For un-common materials, request Application Coverage Chart from packaging or material spec sheet. If R15 depth is not on table, ask engineer for worksheet to interpolate for R15 depth and the associated in-place volume (CF/bag).

Number of Bags Blown into Building	x	In-Place Volume (cf/bag)	/	Building Area (sf)	x 12 =	Average Depth Across Building (inches)
					(in/ft)	

Wall Insulation

- 1) Review the practice specifications.
- 2) Verify that substrate to which insulation was attached is in good condition. This means that degraded insulation, lumber, other materials, and dust was removed before installation of new insulation.
- 3) Verify that a layer was installed to provide physical protection for the insulation.
- 4) Measure the length and vertical height of the walls insulated, and calculate the total area. Exclusions which are equal to or smaller than a single common door or fan need not be deducted.

FEATURE MEASURE:
WALL AREA REBUILT/REINSULATED IN SQUARE FEET

Sidewall Renovation

- 1) Review the practice specifications.
- 2) Verify that a permanent exterior siding was installed
- 3) Verify that rotten or degraded insulation was removed and replaced with new insulation.
- 4) Verify that a layer was installed to provide physical protection for the insulation.
- 5) Measure the length and vertical height of the walls renovated, and calculate the total area. Exclusions which are equal to or smaller than a single common door or fan need not be deducted.

FEATURE MEASURE:
WALL AREA REBUILT/REINSULATED IN SQUARE FEET

Sealant

- 1) Review the practice specifications.
- 2) Verify that that sealing lines or areas were cleaned before application of the sealant.
- 3) Verify that that sealant within reach of animal production is resilient to animal pecking and biting.
- 4) Verify and record the length of the house.

FEATURE MEASURE:
NOMINAL LENGTH OF BUILDING IN FEET

Roll-Up (Vehicular) Door

- 1) Review the practice specifications.
- 2) Verify that frame of door was caulked or sealed to house frame, and verify that door members (or layers) seal to door frame.
- 3) Note quantity of doors installed.

FEATURE MEASURE:
NUMBER OF DOORS

Checkout

Pictures are recommended to supplement the documentation of installations.

I certify that I have visually confirmed on-site that the conservation energy improvement(s) was installed and that the improvement(s) meets NRCS minimum specifications. I have examined invoices for the materials purchased and work performed and filed copies in the participant case file.

Authorized NRCS Agent

Date