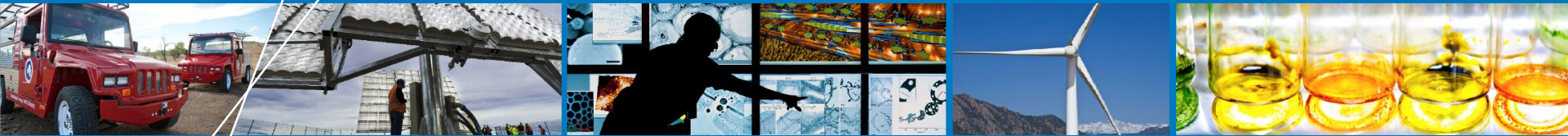


Guidelines for Home Energy Professionals Project



Chuck Kurnik

June 17, 2015

Webinar Overview

- Guidelines for Home Energy Professionals Project
- Standard Work Specifications (SWS)
 - Benefits to the home performance industry
 - History and development
- Demonstration
 - SWS Online Tool
 - SWS Field Guide Template

Guidelines for Home Energy Professionals Project Summary



Goal: Collaborate with industry to develop the tools needed for a high-quality residential energy upgrade industry, supported by accredited training programs, and a skilled and credentialed workforce.

Quality Work

- Standard Work Specifications (SWS) define the minimum requirements for high-quality, safe, and durable installations
- References to industry technical standards and codes

Quality Workers

- Certifications are accredited under ISO 17024 standard
- Based on Job Task Analysis (JTAs) and Knowledge, Skills, and Abilities (KSAs); also incorporates SWS
- Administered by Building Professionals Institute (BPI)
- Competency-based; only home energy upgrade certifications supported by DOE

Quality Training

- Based on JTAs for four common job classifications: Energy Auditor, Retrofit Installer Technician, Crew Leader, and Quality Control Inspector
- Outlines key tasks and knowledge, skills, and abilities needed
- Accredited by IREC

Benefits to the Home Performance Industry


- **The Standard Work Specifications**
 - Improve quality
 - Existing resource
 - Covers wide array of measures
 - Great training aid

“We do 4,000 jobs a year in Arizona and the work we are seeing now is nearly flawless. The only issues we ever see are contractors who have been doing this work for years and who assume they are doing it correctly...until they start failing inspections. Then we put these tools in their hands, and they don't fail inspections anymore”


- Chris Baker, Energy Training and Technical Assistance Coordinator for the Southwest Building Science Training Center, on implementing the SWS in Arizona's Home Performance with Energy Star Program

Standard Work Specifications – Development

The SWS were developed in an open effort, synthesizing the expertise of the Weatherization Assistance Program (WAP) and the greater industry.



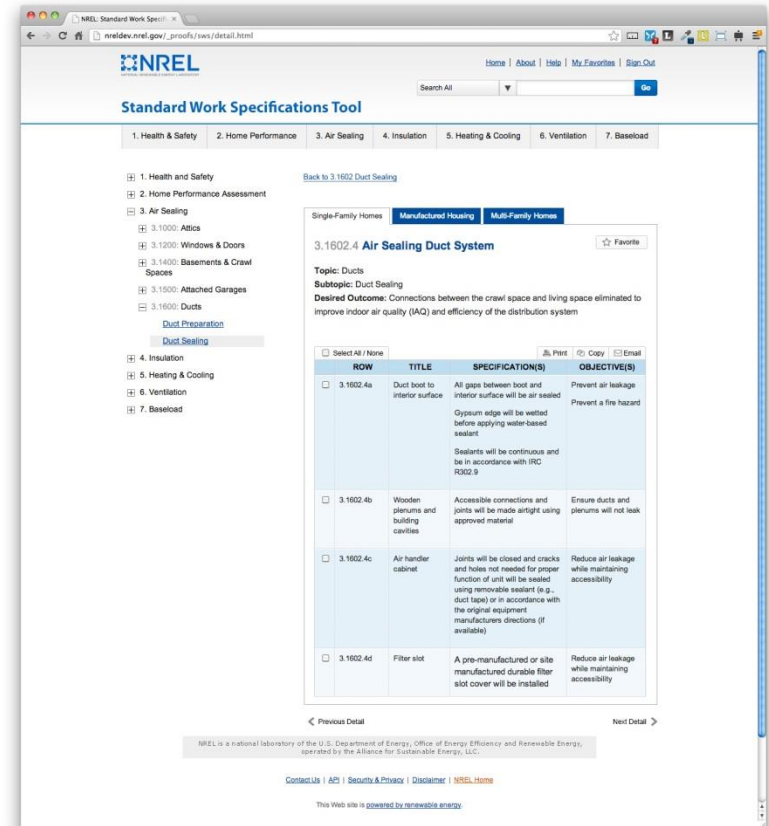
Program administrators, health and safety experts, weatherization contractors, product manufacturers, and federal partners at the EPA, USDA, and HUD all took part in the initial development of the SWS.



The SWS then went through an extensive industry review process beginning in November 2010, that resulted in nearly 2,000 comments captured over four separate public review periods.

What Are the Standard Work Specifications?

- Standard Work Specifications
 - Single-Family
 - Multifamily
 - Manufactured Housing
- Outcome-driven specifications
 - Quality work defined
 - Standardized expectations
 - Safer work environment
- SWS Online Tool
 - sws.nrel.gov
 - Tool can be easily accessed from the field, on a phone or tablet



Standard Work Specifications – Structure

4 1006.1 Pull-Down Stairs
 Topic: Attics
 Subtopic: Attic Openings
 4.1006.1 Detail Name: Pull-Down Stairs
 Desired Outcome: Pull-down attic stair properly sealed and insulated

ROW	TITLE	SPECIFICATION(S)	OBJECTIVE(S)
4.1006.1a	Installation	Ratches will be insulated with non-compressible insulation and the measure will include a protective barrier or baffle Pull down stair assembly will be insulated to the same R-value as the adjoining insulated assembly Pull down stair rough opening will be surrounded with a durable dam that is higher than the level of the attic floor insulation	Achieve uniform R-value Prevent loose insulation from entering the living area

The **Specification** defines the minimum level of action required to meet the **Objective**.

The **Objective** defines the required outcomes of the work.

The first digit indicates **SECTION**. This **DETAIL** is from SECTION 3 - Air Sealing

The final digit indicates **DETAIL**. This is the third detail within the "Penetrations and Chases" **SUBTOPIC**

TOPIC numbers align across **SECTIONS**. **SUBTOPICS** do not align across **TOPICS** except within the "Ventilation" **SECTION** where **SUBTOPICS** are parallel.

3.10 01.3 Walls Open to Attic – Balloon Framing and Double Walls

The first 2 numbers of the second digit indicate **TOPIC**. 10XX is reserved for Attic.

The second 2 numbers of the second digit indicate **SUBTOPIC**. This **DETAIL** is from the first **SUBTOPIC** within this **TOPIC**.

Standard Work Specifications Online Tool

Key Features

- ✓ Advanced search
- ✓ Integrated glossary
- ✓ Print details
- ✓ Email details
- ✓ Create lists of Favorites (with login)
- ✓ Create QC Checklists
- ✓ Submit comments (with login)
- ✓ Create and share Field Guides (with login/permission)
- ✓ How-to Video
- ✓ Application programming interface (API)

SWS Field Guide Template

Air Sealing > Windows and Doors > Replacement

Single-Unit Window, Mounted on Rough Opening—Newer House

3.1203.2d Replacement window installation

Specification(s):

Replacement windows will be installed in accordance with manufacturer specifications and will be integrated with flashing

Gaps between the new window and existing frame will be sealed with low-expanding foam

Objective(s):

Ensure replacement window operates properly

Ensure replacement window is weather tight

Tools:

1. Utility knife
2. Spray foam gun
3. Drill
4. Hammer
5. Saw

Materials:

1. Fasteners
2. Flashing
3. Low-expansion spray foam
4. Backer rod
5. Primed trim



Single pane window is being removed to install double pane unit



Double pane unit installed with trim in place

Air Sealing > Windows and Doors > Replacement

Single-Unit Window, Mounted on Rough Opening—Newer House

3.1203.2d Replacement window installation



Install flashing to manufacturer specs and industry standards



Flanges have been folded out to allow for easy installation



Fasten window flange securely around exterior of entire window



With window secured in place, check for proper function



Check that sash locks align properly, indicating window is plumb



Fill interior gap with compressible foam or appropriate sealant



Prime and replace interior trim and, if needed, sill



Replace exterior trim and patch exterior siding or finish as needed

Demonstration

- **SWS Online Tool**
- **SWS Field Guide Template**

Examples of the SWS in Action

Possible Users/Tasks



Tom

Training Program Instructor

Needs to find specific details to copy/paste into a lesson



Ivan

Quality Control Inspector

Needs to cite and link to SWS details when writing a home inspection report.



Audrey

Energy Auditor

Needs to create a list of retrievable specifications that she can reference on the job.



Walter

WAP Program Manager

Needs to quickly refer to the SWS to confirm how the work should be done and send specifications via email.

Additional Resources

- **Guidelines for Home Energy Professionals Project website:** energy.gov/eere/wipo/guidelines-home-energy-professionals
- **Standard Work Specifications (SWS) Online Tool:** sws.nrel.gov
- **API** – Link located at the bottom of the SWS Online Tool
- **Project email address:** workforce.guidelines@nrel.gov

Chuck Kurnik
chuck.kurnik@nrel.gov