

Houses That Work for Existing Homes Workshop: **Airsealing: Home Energy Improvement for Savings and Comfort**

This workshop will teach participants essential information about airsealing as it applies to single family residences. The house is a system and every component in it works together. Adding insulation and sealing air leaks can improve the energy efficiency of a home and improve the home's comfort and durability. However, every change made to the building's envelope (walls, floors, and ceiling) and components will affect how the home works to keep out the elements and keep the occupants safe and comfortable. Tightening the building envelope without providing appropriate ventilation can cause pressure imbalances or negative pressure in the house. This negative pressure can set up the conditions for backdrafting of fireplaces or fuel-burning (combustion) appliances and may draw pollutants into the home. A trained contractor understands how systems work together to keep the house operating as it should. Participants will learn the basics about air leakage and the details and techniques for airsealing. They will gain practical and affordable tools and strategies they can use to help their clients make better decisions. Participants will be equipped to avoid potential risks and identify new opportunities for marketing their services. The information presented in this session will build on the basics of building science covered in the popular EEBA full day Houses That Work session. Participants for this Airsealing session are encouraged to attend an HTW I session before taking this workshop.

An important element of the workshop will be to introduce the DOE's Building America Best Practice Air Sealing Guide.

Relevance to Attendees

The workshop is targeted to at least the following groups:

- General contractors who focus their business on the residential remodeling sector
- The many specialty or specific remodeling sectors
 - Insulation and weatherization contractors
 - Window replacement contractors
 - Kitchen and bath replacement companies
 - Siding contractors
- Real estate agents
- Building supply and manufacturers representatives who promote insulation and air sealing
- Utility and housing program officials who promote weatherization programs
- Designers and architects

Learning Objectives

- Identify how air leakage is related to building science and high performance homes
- Relate the potential impact of air leakage on the building and the occupants
- Apply cost-effective strategies to specific air sealing strategies
- Demonstrate energy savings and return on investment to customers

Airsealing: Home Energy Improvement for Savings and Comfort

Curriculum Outline & Activity Plan

3.50 Hours of Teaching Time

Segment	Activity Plan	Timing
<p><u>Introduction to EEBA and its Sponsors</u></p> <ul style="list-style-type: none"> • The relationship between EEBA, DOE, ENERGY STAR, EPA • Relevance of the “Houses That Work” Program • EEBA publications and education • Introduction of speaker and sponsors 	<p>Facilitator has sponsors and participants introduce themselves and asks participants what prompted their interest in today’s session.</p>	<p>10 min.</p>
<p><u>Home Assessments</u></p> <p>Achieving the goals of healthy, safe, durable, comfortable and energy efficient housing are key points for selling air sealing to homeowners. Air sealing is labor intensive and much of the work is hidden so it can be difficult to convince clients of its value. All air sealing work needs to start with an assessment.</p> <ul style="list-style-type: none"> • Visual inspections for air sealing opportunities are enhanced once a contractor understands how the house works as a system and the building science principles for air, heat and moisture flow. • Proactively address occupant concerns regarding health and comfort • Review performance testing 	<p><u>Small Group Exercise:</u> Participants work together to list issues regarding assessments</p> <p><u>Demonstration:</u> Facilitator outlines a method for participants to address key factors of home assessments</p>	<p>25 min.</p>
<p><u>Safety and Health Concerns</u></p> <p>A discussion of the potential safety and health issues related to airsealing, including:</p> <ul style="list-style-type: none"> • Combustion safety risks • Radon testing • The roles and responsibilities contractors have in providing healthy indoor air. 	<p><u>Short Lecture:</u> Facilitator reviews risk assessment factors</p> <p><u>Small Group Exercise:</u> Participants work together to develop strategies on the major risk factors</p>	<p>25 min</p>

<p><u>Ventilation Strategies</u></p> <ul style="list-style-type: none"> • Overview of common ventilation strategies • Review of Building Science Basics 	<p><u>Short Lecture:</u> Facilitator outlines fundamentals of Ventilation strategies and Building Science basics</p>	<p>25 min</p>
<p><u>Air Sealing Construction Elements</u></p> <p>Developing priorities and strategies</p> <ul style="list-style-type: none"> • Selection of building materials • Caulking principles • Air leakage location checklist • Review of location specific details 	<p><u>Question and Answer:</u> Facilitator shows a series of slides demonstrating strategies, materials & techniques used throughout a building to ensure airsealing. Participants are asked for their feedback on their experience with these details and processes.</p>	<p>90 min</p>
<p><u>Demonstrating Energy Savings</u></p> <ul style="list-style-type: none"> • Features, advantages and benefits of airsealing • Examples of energy savings • Return on investment 	<p><u>Small Group Exercise:</u> Participants work together to develop features, advantages and benefit statements</p> <p><u>Short Lecture:</u> Facilitator demonstrates return on investment calculations</p>	<p>25 min.</p>
<p><u>Summary and End of Workshop</u></p>	<p><u>Question and Answer:</u> Facilitator asks participants: - new things they have seen that will be easy to implement - things that will take more time to implement</p>	<p>10 min.</p>