

## Insulation & Air Sealing Workshop Description and Outline

### **HTW II Insulation Workshop**

#### **"Attaining Optimal Insulation Effectiveness in High Performance Homes"**

This workshop will help participants understand the key principles for ensuring they attain optimal insulation effectiveness in high performance homes. The session will review the basic physics of air, heat and moisture flow covered in the HTW I workshop and then will cover the essential questions related to creating an effective thermal barrier. Participants will learn the advantages and differences between each type of insulation and will be given valuable techniques and strategies to maximize the performance of each type. A thorough discussion of proper installation methods will be covered including the importance of air sealing and air sealing methods. This presentation will allow participants to discuss insulation issues and their experiences through the use of case studies and group exercises to ensure a wide variety of construction types and systems relevant to the home building industry are covered.

#### **Relevance to Attendees:**

The workshop will be of most interest to at least the following groups:

- New home builders and remodelers and their site supervision staff
- Designers and architects
- Estimators and contract managers of builders
- Building supply and manufacturers representatives who promote insulation and air sealing
- Insulation and drywall trade contractors as well as framers
- Utility and housing program officials who promote ENERGY STAR Homes.
- Energy Raters

#### **Learning Objectives:**

- Learn the basics of air, heat and moisture flow as it relates to creating effective insulation systems.
- Identify the advantages and differences between insulation systems so as to be able to make cost effective energy efficiency decisions.
- Learn important techniques and strategies for proper installation of insulation systems for a wide variety of construction details and methods.
- Identify techniques and methods for cost effective air sealing methods to optimize overall insulation effectiveness.

#### **Note:**

- The workshop will in all cases be adapted to the climate zone and building practices of the local area where it is being presented to ensure it is relevant to participants.

## **Workshop Format**

**Length of Workshop:** The workshop is a half day (3.5 hour) format

## **Agenda**

- 8:30 - Welcome, review of the agenda / the objectives, introductions.
- A brief overview of EEBA and the ENERGY STAR program
- 8:40 - **Background**
- Review of the key concepts of the Houses That Work program that specifically apply to insulation issues – that is, where this workshop fits in light of the other EEBA offerings.
    - A short review of building science basics – air, heat and moisture flow as it relates to insulation and air sealing, house as a system issues and how small changes can have important impacts
- 9:00 - **Why We Need to Improve the Performance of Insulation**
- The benefits of proper insulation to builders
  - The risks to builders of inappropriate or improperly installed insulation
    - The roles and responsibilities of builders and their trades in ensuring proper insulation.
- 9:20 - **How Insulation Works and Defining R-Value**
- The fundamentals that every builder needs to know about how insulation works and what defines proper performance
- 9:40 – **The Importance of Air Leakage Control**
- Why air leakage is so important to proper insulation performance
  - Practical air sealing strategies and materials for various building elements
    - Interior and exterior air barriers
    - Critical details behind tubs, fireplaces, bulkheads, garage interfaces
- 10:10 – **Selecting from the Many Types of Insulation**
- The advantages and issues of the different types of insulation
  - Strategies for selecting and applying different types of insulation for different housing problems and different parts of the house
- 11:00 – **Effective Insulation Details**
- Strategies that every builder and insulator needs to know for properly applying the different types of insulation
  - Insulation details for:
    - Foundations
    - Walls
    - Attics – including conditioned attics
    - Ductwork
- 12:00 – **Summary and Wrap-up**