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Air-Sealing & Insulation Syllabus



Instructor: {Instructor Name}

Instructor's Contact Information: Course Information:

Phone: [phonenumber]

Email: [emailaddress]

[meeting day, time]

[meeting location]

Course Description

The successful weatherization of an existing home requires extensive planning, knowledge of building science and codes, and well-executed installations. This course is focused on developing the skills and knowledge of current and potential Weatherization Installers. This class offers three days of review, theory, and hands-on lab exercises to reinforce and extend the knowledge of building science and tools and techniques for insulating, air-sealing buildings, reducing base load, and drywall repair.

By attending this course, the Student will gain a deeper understanding about weatherization material properties for insulating and air-sealing. With a focus on performance, each student participating in lab/field activities is responsible for the appropriate use of insulation blowing machines, air-sealing props, installing base load measures, and drywall repair.

Course Objectives

By the end of this course, students will be able to:

1. Identify typical construction details that lead to gaps in pressure and thermal boundaries and know how to treat them.
2. List the various tools and materials used in air-sealing and attic preparation.
3. Select appropriate tools and materials to air-seal building simulation props. Props are pressure tested to check air tightness.
4. Outline the process for insulating attics with loose-fill insulation on both horizontal and vertical surfaces.
5. Set-up and demonstrate the use of an insulation blowing machine.
6. Dense-pack a test wall & blow loose fill insulation in a simulated attic
7. Discuss safety concerns related to wiring.
8. Demonstrate comparing material use to coverage required.

Prerequisites

N/A

Required Text

NME\$A Air Sealing & Insulation Professional Handbook

Expectations

1. Exhibit professional conduct, including complying with OSHA safety standards.
2. Attend all classroom, lab, and field sessions.
3. Complete and submit all required assignments/exercises according to course deadlines.
4. Participate in classroom discussions.
5. Complete/participate in all field and laboratory projects.
6. Use individual knowledge and skills to assist with group activities.
7. Demonstrate ability to properly perform specific specialized diagnostic tests.

Assignments

- Primary assessments will be conducted by observation throughout classroom, laboratory, and field sessions. This includes productive participation in question and answer sessions, and discussions during each lesson.
- Final evaluation consists of skill demonstrations and completion of Course Hand

NME\$SA and SFCC Policies/Procedures

[see SFCC Student Handbook and JACK for SFCC and NME\$A policies: www.sfcc.edu]

Attendance: Students are required to attend each class in order to pass each course offering for certification. Notify your instructor within 24 hours of any unforeseen absence. Courses are not run on a regular basis and therefore, make-up scheduling may not be possible.

Academic Honesty: Students may not gain, or attempt to gain, academic advantage by misrepresenting their work or by interfering with the completion, submission, or evaluation of work.*[see SFCC policies on plagiarism in Student Handbook]*

Electronic Devices: All electronic devices must be set to off at the beginning of each class session. Student cell phone use policy is “emergencies only” during instruction.

Grading:

Students must achieve the follow to receive a passing grade/certification

100% completion of all Skill Demonstration Tasks is required

100% completion of the Course Handbook

70% on Quizzes

Students with Disabilities: If you have a disability for which you would be requesting accommodations by SFCC or the NME\$A program, please contact your instructor upon enrollment.

Resources

Weatherization Assistance Program Technical Assistance: www.waptac.org

Weatherization TV: www.wxtvonline.org

SFCC Online Course Materials: <https://sfcc.instructure.com>

Schedule: (Each Day after class: 15-30 minutes for one-on-one sessions as needed)

Day 1:

Introductions, course expectations	8:00-8:30am
Review: Health & Safety, Building Math, House as a System, Building Science, Common Pressure Boundary Problems	8:30-9:00am
<break>	9:00-9:10am
Review: Health & Safety, Building Math, House as a System, Building Science, Common Pressure Boundary Problems (<i>con't</i>)	9:10-10:10am
<break>	10:10-10:20am
Insulation and air-sealing tools and materials	10:20-11:20am
<break>	11:20-11:30am
Review air-sealing props and desired outcomes	11:30-12:00pm
<LUNCH> Early Return - instructor available for questions	12:00-1:00pm
Air-seal props; pressure testing	1:00-2:00pm
<break>	2:00-2:10pm
Air-seal props; pressure testing (<i>con't</i>)	2:10-3:10pm
<break>	3:10-3:20pm
Air-seal props; pressure testing (<i>con't</i>)	3:20-4:20pm
Clean-up lab; store completed props	4:20-5:00pm

Day 2:

Day 1 Review	8:00-8:20am
HVAC problems, preparing for insulation, venting systems	8:20-9:20am
<break>	9:20-9:30am
HVAC problems, preparing for insulation, venting systems (<i>con't</i>)	9:30-10:00am
Continue air-sealing props	10:00-10:30am
<break>	10:30-10:40am
Insulation blowing machine; safety, operations & maintenance	10:40-11:40am
<LUNCH> Early Return - instructor available for questions	11:40-12:40pm
Insulation blowing machine: loose-fill prop	12:40-1:40pm
<break>	1:40-1:50pm
Insulation blowing machine: loose-fill prop (<i>con't</i>)	1:50-2:50pm
<break>	2:50-3:00pm
Mobile home construction & site visit	3:00-4:00pm
<break>	4:00-4:10pm
Mobile home construction & site visit (<i>con't</i>); complete course handbook exercises	4:10-5:00pm

Day 3:

Review Day 2	8:00-8:20am
Baseload measures (CFL's, low-flow devices, water heater blanket installs, DHW pipe-wrap)	8:20-9:20am
<break>	9:20-9:30am
Baseload measures (<i>con't</i>)	9:30-9:50am
Insulation basics	9:50-10:30am
<break>	10:30-10:40am
Insulation blowing machine: hole drilling; dense-pack props	10:40-11:40am
<LUNCH> Early Return - instructor available for questions	11:40-12:40pm
Insulation blowing machine: hole drilling; dense-pack props (<i>con't</i>)	12:40-1:40pm
<break>	1:40-1:50pm
Insulation blowing machine: hole drilling; dense-pack props (<i>con't</i>)	1:50-2:50pm
<break>	2:50-3:00pm
Drywall repair	3:00-4:00pm
<break>	4:00-4:10pm
Drywall repair & lab clean-up	4:10-4:30pm
Complete Course Handbook / Class Evaluation	4:50-5:00pm