# Spray Foam Insulation

# Weatherization Installer/Technician Fundamentals

Learning Objectives

By attending this session, participants will be able to:

* Describe the use of spray foam in weatherization.
* Identify foam product options and uses.
* Explain the advantages and limitations of different spray foam products.
* Recognize the need for proper ventilation and personal protective equipment.

Key Terminology

Board feet

Cure

Expanding foam

Material safety data sheets (MSDS)

Non-expanding foam

One-part foam

Polyurethane foam

Positive-pressure, supplied-air respirator

Two-part foam

Supplemental Materials

Handouts & Resources

Aleshire, Vic. “Crawl Space Solutions.” *Home Energy* May/June 2004: 27-29. <www.homeenergy.org>.

Aleshire, Vic. “Handbook for Foam Products.” *Mid-Atlantic Weatherization Training Conference*. 2002. <www.waptac.org>.

“Portable 2-Part Foam.” *WxTV*. Montana Weatherization Training Center. <www.wxtvonline.org>.

Sample Material Safety Data Sheet (MSDS) and/or Product Data Sheets.

Van der Meer, Bill. “Air Sealing with Two Part Foam.” *WTC Technical Update 1.4*. Weatherization Training Center at Pennsylvania College of Technology. 2003. <www.pct.edu>.

Relevant Standard Work Specifications

1.103 – Air Sealing – Safe Work Practices
1.110 – Material Safety – Safe Work Practices

3.000 – Air Sealing

3.1601.2 – Duct Preparation for SPF Application

3.1602.2 – Duct SPF Installation

4.1001.6 – Unvented Roof Deck – Preparation for SPF

4.1001.7 – Vented Roof Deck – Preparation for SPF

4.1003.5 – Unvented Roof Deck – SPF Installation

4.1003.6 – Vented Roof Deck – SPF Installation

4.1003.7 – Ignition and Thermal Barriers – SPF

4.1004.5 – Knee Walls and Gable End Walls – Preparation for and Installation of SPF

4.1005.7 – Attic Floor – Preparation for and Installation of SPF

4.1088.5 – Parapet Walls – SPF

4.1101.3 – Exterior Wall SPF – Masking and Surface Preparation

4.1101.4 – Exterior Wall SPF – Electrical System Considerations

4.1102.2 – Open Wall - SPF Installation

4.1301.9 – Open Floors Over Unconditioned Space and Cantilevered Floors, Floors Over Garages, Floors Over Unconditioned Crawl Spaces – SPF Installation

4.1401.1 – Band/Rim Joists – SPF Installation

4.9901.1 – General Information on Spray Polyurethane Foam (SPF)

Classroom Props & Activities

* Blocks of various types of cured spray foam
* Small portable building mockups with spray foam applied (both one- and two-part foam)
* Safety equipment

Hands-On Props

Spray Foam Prop – Demonstrate spray foam application stressing the proper distance from substrate and speed of movement. Allow students hands-on experience spraying sections of the prop.

Class Overview

* Deliver the PowerPoint presentation. Engage students by asking leading questions about air sealing and insulating with two-part foam, anecdotes from the field, etc. Show students to sample spray foam MSDS, specifically the recommended safety equipment. Discuss the importance of keeping accurate MSDS in the truck, and how proper safety equipment protects workers both during installation and, in case of accidents, by providing emergency responders with valuable information.
* Use in-room, hands-on props relevant to specific slides or points to maintain interest. Discuss cure time and how that impacts production. Faster cure time means multiple layers can be applied more rapidly, and thus the entire home completed more quickly.
* Break students into groups and let them gain hands-on experience installing spray foam to various building props.