# Other Mobile Home Measures

# Weatherization Installer/Technician Mobile Homes

Learning Objectives

By attending this session, participants will become aware of:

* Mobile home window and door terminology.
* Methods for improving windows and doors.
* Criteria and methods for replacing windows and doors.
* Mobile home hot water tank features.
* Safe and efficient operation of hot water tanks.
* Criteria for replacing hot water tanks.
* Common incidental repairs.
* Moisture and indoor air quality (IAQ).

Key Terminology

Ambient air

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

Base load

Carbon Monoxide (CO)

Domestic Hot Water Tank (DHWT) access door

Ground vapor retarder

Incidental repairs

Indoor Air Quality (IAQ)

Jalousie windows

Minimum Ventilation Rate (MVR)

Thermal break

Window film

Worst case Combustion Appliance Zone (CAZ) test

Supplemental Materials

Handouts & Resources

Armanda, Larry. “Ventilation Strategies in Weatherization.” *WTC Technical Update* 1.8 (2006). Weatherization Training Center at Pennsylvania College of Technology. [www.pct.edu/wtc/articles.htm](http://www.pct.edu/wtc/articles.htm).

Beers, Jonathan. “Dryer Venting” *Home Energy* Nov./Dec. 2003: 14-16.

“Clothes Dryer and Washing Machine Safety Tips.” National Fire Protection Association, 2 Sept. 2009. www.nfpa.org/assets/files/PDF/Research/DryerWasherSafetyTips.pdf

Greely, Kathy, John Randolph, and Bill Hill. “A Warm Wind Blows South: Virginia's Weatherization Evaluation.” *Home Energy* Jan./Feb. 1992: 15-21. www.homeenergy.org

Moyer, Neil. “Moisture Problems in Manufactured Housing” *Home Energy* March/April 2002. www.homeenergy.org.

“NFPA Dryer Fact Sheet.” National Fire Protection Association, 2 Sept. 2009. www.nfpa.org/assets/files/PDF/DryerFactSheet.pdf.

"OSHA Carbon Monoxide Poisoning Fact Sheet." U.S. Department of Labor, Occupational Safety and Health Administration. 2002. www.osha.gov

Steiner, Cal. “Moisture, Leaks, and Pressures in Mobile Homes” *Home Energy* March/April 2006. www.homeenergy.org.

US DOE WAP, Midwest Regional Field Office. *Midwest Weatherization Best Practices Field Guide* May 2007: 172-177, 190, 194-195, 201.

Classroom Props & Activities

* Window (old and new units).
* Mobile home hot water tank – Attempt to secure a used one from a local weatherization agency.
* Ventilation fan (old and new units).
* Dryer vent materials.
* Gas cook stove and CO tester.

**Class Overview**

* Use the presentation, discussion, and handouts to introduce students to the key elements of windows, doors, domestic hot water tanks, health and safety measures and incidental repairs. Focus on the key elements of each category and use props to reinforce concepts:
  + Windows and doors
    - Evaluating their performance.
    - Repair or replacement criteria.
* During the windows and doors section of the presentation, show the differences between an old jalousie window unit and new energy efficient replacement types. Discuss and demonstrate how to select and measure windows for replacement per manufacturer’s instructions. Apply the same principles for door replacement.
  + Hot water tanks
    - Evaluating safety and efficient operation.
    - Repairs or improvements.
    - Replacement criteria.
* Show the features of a used mobile home hot water tank, paying particular attention to its safety features and control systems.
  + Health and safety measures
    - Investigating moisture problems.
    - Minimum ventilation rates.
    - Dryer venting.
    - Mechanical ventilation.
    - Gas cook stove testing.
    - Show the features of mechanical ventilation fans. Refer to the section on “Mechanical Ventilation” in the Installer Intermediate Module for additional detail.
* Show dryer vent materials. Refer to the section on “Dryer Vents” in the Installer Intermediate Module for additional detail.
* Demonstrate gas cook stove testing if an operating stove with a fuel supply is available. If an operating stove is not available, show the various components and simulate a test. Demonstrate where to insert the probe of the CO tester and discuss CO and action levels.
* Discuss incidental repairs.