# Zone Pressure Diagnostics

Weatherization Energy Auditor Single Family

**Learning Objectives**

By attending this session, participants will be able to:

* Demonstrate the strengths and limitations of zonal pressure diagnostics (ZPD).
* Assess when to use zone pressure diagnostics.
* Demonstrate the use of ZPD charts.

**Key Terminology**

CFM50

Can’t reach fifty (CRF)

Pascals (Pa)

With reference to (WRT)

Zone pressure diagnostics (ZPD)

**Supplemental Materials**

Handouts & Resources

Bohac, David. “Zone Pressure Diagnostics*.*” *Home Energy*. May/Jun. 2002, pp. 34-37. <www.homeenergy.org>.

Cox, Anthony, and Collin Olson. “ZPD Charts and Training Worksheets.” 2006.

Fitzgerald, Jim. Robert Nevitt, and Michael Blasnik. “User-Friendly Pressure Diagnostics.” *Home Energy.* Sept./Oct. 1994, pp. 15-20. <www.homeenergy.org>.

Flow Method: Hole Added from House to Zone.

Flow Method: Hole Added from Zone to Outside.

Haskell, Ted. “Duct improvement in the Northwest: Part 1 – New Construction and Retrofit.” *Home Energy.* Jan./Feb. 1996. <www.homeenergy.org>.

Open the Door from Garage to Outside.

Open the Door from House to Garage.

“Pressure Diagnostic Techniques.” Affordable Comfort Inc. 1994.

“Pressure Diagnostics with the House of Pressure.” PowerPoint presentation. New River Center for Energy Research and Training.

Tooley, John. “Pressure Balancing a House & ‘Mad-Air’.” *Natural Florida Retrofit Inc*. Date Unknown.

ZPD Training Worksheet.

Online Platform Lessons

Use these online interactive training modules as prerequisites before students attend the course or as in-class computer lab sessions. Users must first create an account at [www.nterlearning.org](http://www.nterlearning.org) to access.

a- 7.2 Room Pressure Tests, Thermal Boundary and Add-a-Hole ZPD Case Study
<https://www.nterlearning.org/web/guest/course-details?cid=248>

a- 9.3 Dominant Duct Leakage <https://www.nterlearning.org/web/guest/course-details?cid=248>

a- 9.5 Duct Induced Room Pressure Imbalance
<https://www.nterlearning.org/web/guest/course-details?cid=248>

Classroom Props & Activities

Blower door

Manometer and a selection of multicolored hoses

Smoke generating device

Calculators

**Class Overview**

* Field staff members can grow restless in a lecture setting. Make the class as interactive as possible by soliciting applicable experiences from the class. Perform the interactive and practice exercises as prompted in the presentation. Ask students to do the math on their calculators before clicking forward to the answers.
* If the training setup is conducive to such a demonstration, simulate ZPD testing between the classroom and other areas of the site, classroom window open or window closed, etc. Better test case scenarios would result by having a model or full-sized pressure house in a WTC lab or by testing on a real home. Avoid going through the entire presentation without getting students into a lab demonstration on a model or full-sized house. Commercially available interactive models, such as the “House of Pressure” or the “ZPD House,” are capable of mimicking any of the pressure and flow exercises illustrated in the presentation.