



### **Lesson: Window Treatments**

Building owners select window treatments to improve building efficiency and occupant comfort. Window treatments can insulate windows in winter and block solar heat in summer. This lesson presents the following information about window treatments: how window treatments increase the R-value of windows, how window treatments block solar heat through windows, how to compare the performance of window treatments and how to evaluate the practical challenges of installing window treatments. This is a 1.2 hour session.

**BPI (0.60 CEUs)**

### **Category: Evaluation**

#### **Lesson: Blower Door Theory**

Blower door tests are essential to building-energy evaluations. This lesson covers the science behind blower door tests and how we use test results to evaluate building air tightness, principles of building air tightness testing, why air tightness tests are important and how to interpret the results of your blower door tests. This is a 1.7 hour session.

**BPI (0.85 CEUs)**

#### **Lesson: Blower Door Test Preparation**

Building-energy specialists need to set the building envelope up correctly to conduct accurate blower door tests. This lesson outlines how to configure the building to energy-industry standards. You'll learn how windows, doors, ventilation equipment, and combustion appliances configurations affect measurement accuracy and how to avoid common set-up problems. This is a 1.0 hour session.

**BPI (0.50 CEUs)**

#### **Lesson: Blower Door Testing**

Building-energy specialists can set up blower door equipment in a number of incorrect ways. This lesson explains how to set up the blower door test equipment the right way, how to conduct the blower door test from start to finish, how to avoid common equipment set-up errors and how to interpret blower-door-test results and compare them to industry air tightness standards. This is a 2.9 hour session.

**BPI (1.45 CEUs)**

#### **Lesson: Blower Door Testing Manometers**

Building-energy specialists use manometers to measure building air-pressures and blower-door airflow. Your measurement's accuracy depends how you set up and use the manometer. This lesson covers the most used manometer models and how they measure pressure differences during the blower door test, basic manometer features and functions, how to set up manometers for blower door tests and common problems that cause inaccurate manometer measurements. This is a 2.3 hour session.

**BPI (1.15 CEUs)**



### **Lesson: Energy Auditing**

An energy audit is your client's roadmap to improve an existing building's energy efficiency. Without an energy audit, your clients can't be confident that improvements will reduce energy use or be cost-effective. This lesson covers the entire auditing process, from initial customer interview to post-evaluation analysis, how to do a customer-interview, utility bill analysis techniques, visual inspection methods, diagnostic test procedures and how to recognize health hazards and building durability issues. This is a 1.7 hour session.

**BPI (.85 CEUs)**

### **Lesson: Window Economics**

Windows are a high-cost building component, and they have a major impact on energy-efficiency and comfort. Building-energy specialists must be able to select site-appropriate, cost-effective windows. You'll learn the following in this lesson: the basics of energy efficiency economics, how to apply those efficiency economics to windows, the difference between total and incremental costs, the importance of measure life, how to use simple payback and other economic metrics to help make decisions about windows and how to evaluate window economics based on site-specific information. This is a 1.5 hour session.

**BPI (0.75 CEUs)**

### **Lesson: Analyzing Consumption**

If you work with existing buildings, you must be able to analyze past energy consumption. This lesson discusses how to convert utility bill data into useful information for your projects, how to separate seasonal energy use from baseload use, how degree days affect seasonal consumption and how to use post-improvement utility data to measure the success of retrofit projects.. This is a 1.1 hour session.

**BPI (0.55 CEUs)**

### **Lesson: Gas Heating Systems ID**

Gas heating equipment comes in all shapes and sizes. It's your job as a buildingenergy specialist to correctly identify these systems. This lesson covers the types of gas-burning appliances, their major features, and how to identify them. You'll learn about the following: the difference between open-combustion and sealed-combustion appliances, how combustion appliances vent their byproducts, and different types of gas-heating equipment and their comparative energy efficiencies. This is a 1.7 hour session.

**BPI (0.85 CEUs)**

### **Lesson: Duct Blower Theory**

Excessive duct leakage causes major energy and comfort problems in many buildings. This lesson covers why and how building-energy specialists test duct-system leakage, the main types and components of duct systems, typical air-leakage locations, problems caused by poorly sealed ducts, the methods and equipment used to test duct-airtightness test methods and equipment, and energy-code duct-airtightness. This is a 1.6 hour session.

**BPI (0.80 CEUs)**



**Lesson: Duct Blower Testing**

Duct airtightness testing can be a challenge, even for experienced building-energy specialists. This lesson covers industry standards for duct-airtightness inspection and testing, how to visually inspect duct systems, how to conduct the total duct leakage test, how to conduct the leakage to outdoors test and how to interpret duct-airtightness test results. This is a 2.1 hour session.

**BPI (1.5 CEUs)**

**Lesson: Pressure Pan Duct Testing**

Duct systems located outside the thermal envelope waste a lot of energy. Fortunately, building-energy specialists and HVAC technicians have tools to diagnose duct-leakage problems. This lesson covers evaluating duct-system leakage with a pressure pan. You'll learn how to use a pressure pan to identify the severity and location of duct leaks. You'll also learn the limitations of using a pressure pan to test duct-system leakage. This is a 1.2 hour session.

**BPI (0.60 CEUs)**