



Related Technical Instruction (RTI) Outline for the Weatherization Laborer Apprenticeship Program

Sponsor Name	
RTI Provider Name	Everblue
RTI Provider Address	8720 Camberly Road, Huntersville, NC 28078
RTI Contact Name	Lesley Baulding
RTI Contact Phone	(800) 460-2575
RTI Contact Email	training@support.goeverblue.com
Total Hours of Instruction	160

Course		Hours	
	BPI Building Science Principles	16	
	<ul style="list-style-type: none"> • The “house-as-a-system” approach to home performance • How to identify potential building performance problems in a home • How to improve the safety, comfort, and health of building occupants • Why you should focus on energy efficiency before solar • How to educate clients about potential building performance problems 		
	BPI Building Analyst Technician	40	
	<ul style="list-style-type: none"> • Principles of Energy • Basics of Heat, Moisture & Airflow • Building Structural Elements • Types of Insulation • Building Mechanical Elements • Blower Door & Pressure Diagnostics • Combustion Safety • Common Problems & Solutions • The Energy Audit Process • Health & Safety 		

Course	BPI Building Analyst Professional	Hours	10
<ul style="list-style-type: none"> • Construction Math • Principles of Heat, Moisture & Airflow • Building Structural Elements • Analysis of Data Collection • Energy Modeling • Work Scope Development • Common Problems & Solutions • The Energy Audit Process • Health & Safety 			

Course	BPI Infiltration & Duct Leakage	Hours	14
<ul style="list-style-type: none"> • Construction Math • Airflow • Blower Door & Pressure Diagnostics • Tightness Verification • Duct Testing • Duct Tightness Verification 			

Course	HEP Energy Auditor	Hours	40
<ul style="list-style-type: none"> • Professional energy audit conduct • How to collect information about a building for an energy audit • Energy audit process • How to evaluate the collected energy audit data • Compliance with the program or project requirements • Educate homeowner on energy usage, mold, lead, and ventilation • Address homeowner's concerns and use of the home 			

Course	HEP Quality Control Inspector	Hours	15
<ul style="list-style-type: none"> • In-process quality assurance inspections • Post-work visual and sensory inspections • Post-work diagnostic inspections for health and safety • Worker professionalism assessments • Compliance with program or project requirements • Evaluating customer satisfaction 			

Course	Weatherization Installer Badges	Hours	25
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- Work Lead-Safe
- Air Seal Attic Floor
- Seal & Dam High-Temp Heat Sources in Attic
- Prep Attic Floor for Insulation
- Treat Attic Hatch
- Insulate Attic Floor & Pass Inspection the 1st Time
- Insulate Ceiling of a Manufactured Home
- Seal and Insulate Knee Walls
- Install Dense-Pack Sidewall Insulation
- Insulate Mobile Home Walls
- Install Weatherstripping & Sweep Set on Exterior Door
- Air Seal & Insulate Walls of a Conditioned Subspace
- Air Seal Floor Above an Unconditioned Subspace
- Insulate the Floor Above an Unconditioned Subspace
- Insulate the Belly of the Manufactured Home
- Install or Repair Vapor Retarder in a Subspace
- Vent Clothes Dyer to the Exterior
- Install Ducting for a Bath or Kitchen Range Fan
- Air Seal Ducted Distribution System
- Insulate Ducted Distribution System
- Install Window or Exterior Door
- Repair/Replace Cracked or Broken Glass
- Insulate a Water Heater Tank & the First 6 Feet of Pipes
- Install Low-Flow Faucet Aerators or Showerhead
- Install Exterior Roof Penetration



Office of Apprenticeship
U.S. Department of Labor

Work Process Schedule

Energy Auditor		
Job Description: Establish oneself with the knowledge, skills, and abilities to conduct energy audits of residential buildings.		
RAPIDS Code:	O*NET Code: 47-4011.01	
Estimated Program Length: 8 Weeks		
Apprenticeship Type: <input checked="" type="checkbox"/> Competency-Based <input type="checkbox"/> Time-Based <input type="checkbox"/> Hybrid		

Suggested On-the-Job Learning Outline

Collects information about a home using visual, material, dimensional, and appliance data		
Competencies	Date Completed	Initial
A. Documents energy consumption using 12 months of client utility bills and annual fuel delivery information (oil, propane, etc.)		
B. Documents the home’s history (age of original structure, age of additions/improvements) using property records		

C. Conducts a physical/visual inspection to identify issues that pose a health and/or safety risk (e.g., clutter, bleach stored next to a furnace, animal feces, asbestos-containing materials, hazardous materials)		
D. Collects appliance and base load information by inspecting household appliances (e.g., refrigerator, dishwasher, dehumidifier, HVAC)		
E. Identifies and defines the conditioned home boundary using pressure and thermal boundary assessments		
F. Collects mechanical ventilation data and determines the volume of the affected space		
G. Identifies building insulation (attic, walls, and foundation/subspace) using building science, OSHA safety requirements, and general thermography principles		
H. Collects attic data		
I. Collects wall data		
J. Collects window and door data		
K. Collects foundation/subspace data		
L. Collects roof data		

Demonstrates ability to perform diagnostic testing on the unit for an energy audit		
Competencies	Date Completed	Initial
A. Prepares the dwelling for the test(s) using building science and testing protocols		
B. Tests the electric appliances		
C. Conducts indoor air quality tests by measuring levels of targeted indoor air pollutants (e.g., carbon monoxide and combustible gases) and determines if the reading exceeds any applicable action levels		
D. Determines the safety and efficiency of combustion appliances by visually inspecting the fuel supply lines, testing for leakage in the fuel supply lines, performing combustion safety tests (e.g., combustion appliance zone depressurization test, carbon monoxide test), and conducting combustion efficiency tests		
E. Determines air leakage of the building envelope by performing blower door and pressure pan tests		

F. Determines the performance of HVAC distribution by performing a forced air system distribution leakage test and measuring room pressure differences		
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Demonstrates ability to use collected energy audit data to determine the scope of work		
Competencies	Date Completed	Initial
A. Evaluates the health and safety data to determine if there are potential health and safety concerns and if so, if those issues can be addressed through an energy efficiency measure		
B. Evaluates the durability/structural integrity of the home		
C. Evaluates the HVAC system for health and safety concerns and potential replacement or upgrades		
D. Evaluates the mechanical ventilation to determine the need for repairs, replacements, additions, or make-up air		
E. Evaluates energy use compared to codes and standards adopted by the authority having jurisdiction		
F. Evaluates the foundation/subspace to determine if repairs are needed (e.g., plumbing, floors) or if additional insulation and/or air sealing is needed		
G. Evaluates the walls to determine if repairs are needed		
H. Evaluates the attic to determine if repairs are needed or if additional ventilation is required		
I. Evaluates the doors and windows to determine if repairs are needed and to determine the impact of potential health and safety issues (e.g., lead-based paint, asbestos containing materials, moisture)		
J. Uses energy modeling software to further analyze the data collected and to produce a cost/savings report		
K. Generates the recommended work scope with health and safety measures, building durability measures, and energy conservation measures		

Suggested Related Instruction Outline

Provider	
Name: Everblue	
Address: 8720 Camberly Road, Huntersville, NC 28078	
Email: training@support.goeverblue.com	Phone Number: (800) 460-2575
Suggested Related Instruction Hours: 160	

Course Title	Contact Hours
BPI Building Science Principles	16
BPI Building Analyst Technician	40
BPI Building Analyst Professional	10
BPI Infiltration & Duct Leakage	14
HEP Energy Auditor	40
HEP Quality Control Inspector	15
Weatherization Installer Badges	25



Work Process Schedule

Home Performance Laborer (Residential)		
Job Description: Perform a variety of activities to weatherize homes and make them more energy efficient. Duties include repairing windows, insulating ducts, and performing heating, ventilating, and air-conditioning (HVAC) work. May perform energy audits and advise clients on energy conservation measures.		
RAPIDS Code: 2004HY	O*NET Code: 47-4099.03	
Estimated Program Length: 1 Year		
Apprenticeship Type: <input type="checkbox"/> Competency-Based <input type="checkbox"/> Time-Based <input checked="" type="checkbox"/> Hybrid		

Suggested On-the-Job Learning Outline

Test products for functionality or quality.	Approximate Hours	
A. Test combustible appliances, such as gas appliances.		
		-
Total Hours		-

Inspect equipment to ensure proper functioning.	Approximate Hours	
A. Determine amount of air leakage in buildings, using a blower door machine.		
		-
Total Hours		-

Test characteristics of materials or structures.	Approximate Hours	
A. Determine amount of air leakage in buildings, using a blower door machine.		
		-
Total Hours		-

Apply material to fill gaps in surfaces.	Approximate Hours	
A. Install and seal air ducts, combustion air openings, or ventilation openings to improve heating and cooling efficiency.		-
B. Prepare and apply weather-stripping, glazing, caulking, or door sweeps to reduce energy losses.		-
C. Apply spackling, compounding, or other materials to repair holes in walls.		-
Total Hours		-

Inspect industrial or commercial equipment to ensure proper operation.	Approximate Hours	
A. Test and diagnose air flow systems, using furnace efficiency analysis equipment.		-
Total Hours		-

Install green structural components, equipment or systems.	Approximate Hours	
A. Install and seal air ducts, combustion air openings, or ventilation openings to improve heating and cooling efficiency.		-
Total Hours		-

Inspect work sites to determine condition or necessary repairs.	Approximate Hours	
A. Inspect buildings to identify required weatherization measures, including repair work, modification, or replacement.		-
Total Hours		-

Communicate with clients about products, procedures, and policies.	Approximate Hours		
A. Recommend weatherization techniques to clients in accordance with needs and applicable energy regulations, codes, policies, or statutes.			-
B. Contact residents or building owners to schedule appointments.			-
C. Explain recommendations, policies, procedures, requirements, or other related information to residents or building owners.			-
D. Explain energy conservation measures, such as the use of low flow showerheads and energy-efficient lighting.			-
Total Hours			-

Install insulation in equipment or structures.	Approximate Hours		
A. Apply insulation materials, such as loose, blanket, board, and foam insulation to attics, crawl spaces, basements, or walls.			-
B. Wrap air ducts and water lines with insulating materials, such as duct wrap and pipe insulation.			-
C. Prepare and apply weather-stripping, glazing, caulking, or door sweeps to reduce energy losses.			-
D. Wrap water heaters with water heater blankets.			-
Total Hours			-

Install building fixtures.	Approximate Hours		
A. Make minor repairs using basic hand or power tools and materials, such as glass, lumber, and drywall.			-
Total Hours			-

Estimate construction project costs.	Approximate Hours		
A. Prepare cost estimates or specifications for rehabilitation or weatherization services.			-
Total Hours			-

Clean equipment or facilities.	Approximate Hours	
A. Clean and maintain tools and equipment.		-
Total Hours		-

Maintain construction tools or equipment.	Approximate Hours	
A. Clean and maintain tools and equipment.		-
Total Hours		-

Record operational or environmental data.	Approximate Hours	
A. Maintain activity logs, financial transaction logs, or other records of weatherization work performed.		-
Total Hours		-

Prepare operational reports.	Approximate Hours	
A. Prepare or assist in the preparation of bids, contracts, or written reports related to weatherization work.		-
Total Hours		-

Inspect completed work to ensure proper installation.	Approximate Hours	
A. Install storm windows or storm doors and verify proper fit.		-
Total Hours		-

Install doors or windows.	Approximate Hours	
A. Install storm windows or storm doors and verify proper fit.		-
Total Hours		-

Total OJL Hours: _____ - _____

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