

**Core Competencies for the
Weatherization Assistance Program**

Companion Matrix to the
March 26, 2007, Narrative Draft

	Installer	Crew Chief	Auditor	Contractor	HVAC Installer/ Contractor	Inspector	Client Ed.	Monitor (Tech.)	Monitor (Admin.)	Program Manager	Trainer
Basic Competencies	X	X	X	X	X	X	X	X	X	X	X
Safe Work Practices	X	X	X	X	X	X		X			X
Understand building science principles		X	X	X		X	X	X		X	X
Air Sealing											
Select proper materials	X	X	X	X		X		X			X
Know minimum ventilation rates	X	X	X	X		X		X			X
Use blower door	X	X	X	X		X		X			X
Seal leaks in attics, floors, etc.	X	X	X	X		X		X			X
Properly apply caulk & foam	X	X	X	X		X		X			X
Weatherstrip doors, windows, etc.	X	X	X	X		X		X			X
Repair broken glass	X	X	X	X		X		X			X
Repair plaster & sheetrock	X	X	X	X		X		X			X
Install or modify mechanical ventilation	X	X	X	X		X		X			X
Duct Sealing											
Seal ducts	X	X	X	X	X	X		X			X
Repair/modify ducts per work order	X	X	X	X	X	X		X			X
Insulation											
Know insulation materials	X	X	X	X		X	X	X		X	X
Know hazards of knob-&-tube wiring	X	X	X	X		X		X		X	X
Know local attic ventilation codes		X	X	X		X		X			X
Install blown & batt insulation	X	X	X	X		X		X			X
Access & dense-pack sidewalls	X	X	X	X		X		X			X
Install water heater blankets	X	X	X	X		X		X			X
Insulate ducts & pipes	X	X	X	X		X		X			X
Operate & maintain blowing machine	X	X	X	X		X		X			X
Base-Load Measures											
Convert incand. lamps to CFLs, maintain light level	X	X	X	X		X		X			X
Install low-flow showerheads/aerators	X	X	X	X		X		X			X
Meter energy usage of electrical appliances			X			X		X			X
Determine refig energy usage w/ meter of database			X			X		X			X
Project Management											
Manage a crew of Installers		X		X							
Ensure Safe Work Practices are used		X	X	X		X		X		X	X
Understand a work order		X	X	X		X		X	X	X	X
Know building codes, esp. energy & H&S codes		X	X	X	X	X		X		X	X
Order materials to avoid delays		X		X							
Maintain QC of wx work & ensure it meets pgm stds		X		X	X	X		X		X	

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Warehouse materials as necessary		X		X	X						
Training											
Know adult learning concepts		X		X			X	X		X	X
Complete adult education training program											X
Know benefits of cross training		X		X				X		X	X
Provide ongoing training		X		X				X			X
Certification in training topic								X			X
Know allowable activities at training location								X		X	X
Know training resources							X	X		X	X
Develop curriculum based on student needs								X			X
Tailor each class based on student needs								X			X
Motivate students							X	X			X
Provide hands-on training							X	X	X		X
Use technology to enhance learning								X			X
Diagnostic Testing											
Blower door/zone pressure diagnostics											
Know air & heat movement principles		X	X	X		X	X	X		X	X
Know typical air leakage problems		X	X	X		X	X	X		X	X
Compute minimum ventilation rates		X	X	X		X		X			X
Take blower door readings & interpret results		X	X	X		X		X			X
Know air barrier & its proper alignment		X	X	X		X	X	X		X	X
Know primary & intermediate zones		X	X	X		X	X	X		X	X
Conduct zone pressure diagnostics		X	X	X		X		X			X
Locate air barrier & determine its effectiveness		X	X	X		X		X			X
Duct testing											
Know problems w/ different kinds of leakage		X	X	X	X	X	X	X		X	X
Conduct pressure pan, duct blaster, or Delta Q		X	X	X	X	X		X			X
Determine dominant duct leakage		X	X	X	X	X		X			X
Measure & resolve room pressure imbalances		X	X	X	X	X		X			X
Steam & hot water pipe testing											
Know components & oper of steam & HW sys			X		X	X		X			X
Test air vents, steam traps, t'stat rad valves, etc.			X		X	X		X			X
Bleed air from HW distribution system					X						
Estimate energy impact of overheating problems			X		X	X		X			X
Combustion Appliance Safety											
Know CO action levels		X	X	X	X	X	X	X		X	X
Know code requirements of:											

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Vent sizing, materials, clearances, installation		X	X	X	X	X		X			X
Safety shut-off devices		X	X	X	X	X		X			X
Gas line sizing		X	X	X	X	X		X			X
Combustion air		X	X	X	X	X		X			X
Know causes & remedies of common vent problems		X	X	X	X	X	X	X		X	X
Measure CO in ambient air		X	X	X	X	X		X			X
Measure CO in vented & unvented appliances		X	X	X	X	X		X			X
Measure CO of gas & propane stoves & ranges		X	X	X	X	X		X			X
Clean & adjust ovens/ranges to remedy high CO		X	X	X	X	X		X			X
Understand as-measured & air-free CO readings		X	X	X	X	X		X			X
Detect gas, propane, and fuel oil leaks		X	X	X	X	X		X			X
Conduct worst-case draft test of CAZ		X	X	X	X	X		X			X
Measure CAZ & ensure adequate combustion air			X		X	X		X			X
Clock a gas meter to determine appliance input			X		X	X		X			X
Measure temp rise/drop & static press drop on FA sys			X		X	X		X			X
Measure steady-state efficiency of vented units		X	X	X	X	X		X			X
Assess adequacy of plenum & duct sizes			X		X	X		X			X
Inspection and Measurement											
Know factors that affect heat loss in buildings		X	X	X		X	X	X		X	X
Know critical junction points		X	X	X		X	X	X		X	X
Know R-values of different insulation materials		X	X	X		X		X			X
Know different insulation mtrls & installation techniques		X	X	X		X	X	X		X	X
Know air-sealing techniques & appropriate materials		X	X	X		X	X	X		X	X
Know causes & remedies of moisture problems		X	X	X		X	X	X		X	X
Know causes & remedies of IAQ problems		X	X	X		X	X	X		X	X
Know residential mechanical ventilation systems		X	X	X		X		X		X	X
Know min ventilation rates per appropriate ASHRAE 62		X	X	X		X		X			X
Know electric base-load usage		X	X	X		X		X		X	X
Measure building dimensions & compute areas		X	X	X		X		X		X	X
Compute volume of conditioned space		X	X	X		X		X		X	X
Define thermal envelope of a building		X	X	X		X		X		X	X
Assess existing insulation & its R-value		X	X	X		X		X			X
Analyze utility bills			X			X		X			X
Measure Selection											
Know materials allowed by 10 CFR 440 Appendix A			X			X	X	X	X	X	X
Know regs & policy affecting measure selection			X			X		X	X	X	X
Understand the interaction between measures			X			X	X	X		X	X

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Properly use DOE-approved energy audit/priority list			X			X		X			X
Prioritize air-sealing measures			X			X		X			X
Estimate heating & cooling load of a building			X		X	X		X			X
Work Scope Development											
Estimate type & quantity of wx materials needed			X			X		X			X
Prepare easy-to-understand work order			X			X		X			X
Business Management											
Maintain required licenses				X	X						
Possess adequate insurance				X	X						
Employ U.S. citizens or properly documented aliens		X		X	X						
Bid, negotiate, & sign contracts as necessary				X	X						
Heating & Cooling Equipment											
Repair/place heating & cooling eqmt per code					X						
Repair/place combustion appliance vent systems					X						X
Repair/place water heater					X						X
Add supply & return plenums & ducts as necessary					X						X
Client Education											
Know actions by occupant that reduce energy use							X			X	X
Estimate savings that can result from occupant actions							X				X
Know actions by occupant that ensure health & safety							X			X	X
Know basic steps involved in weatherization process'							X			X	X
Know basic equipment used to weatherize a house							X			X	X
Monitoring											
Technical Monitoring											
Produce reports, identify weaknesses & solutions						X		X	X		X
Solve complex technical problems						X		X			X
Administrative Monitoring											
Know enabling legislation of Weatherization Pgm									X	X	X
Know DOE program regulations (10 CFR 440)									X	X	X
Know DOE program guidance & policy									X	X	X
Know budget federal, state, & local processes									X	X	
Know 10 CFR 600 & OMB Circulars									X	X	
Know applicable state procurement regulations									X	X	
Know state approached to monitoring & T&TA									X	X	X
Program Management											
Know applicable databases & tracking systems										X	
Submit accurate financial and production reports										X	

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Provide T&TA for staff & contractors										X	X
Coordinate resources										X	
Develop & implement leveraging strategies										X	

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State Program Management											
Prepare an annual state plan										X	
Prepare an annual weatherization grant application										X	
Develop, maintain, and enforce tec pgm stds										X	
Develop & manage an effective monitoring program										X	
Process reimbursement requests										X	
Local Agency Program Coordination											
Prepare and track a budget										X	
Maintain a purchase order system										X	
Maintain inventory tracking system										X	
Comply with federal limits on admin expenses										X	
Manage a small construction-focused operation										X	
Ensure rigorous final inspection of all units										X	X