



## Energy Skilled: Heat Pump Comfort Advisor Concept Requirements

The following topic areas and key concept knowledge areas outline the technical content that is used to evaluate training programs that submit for recognition. These technical areas go beyond typical requirements for heat pump comfort advisors, aligning with DOE’s Building Science Education materials. All required knowledge areas and additional knowledge areas representing at least 70 points are required for recognition.

Topic Area	Key Concept Knowledge Area (Bold items are required)	Points Possible
Space Conditioning Heat Pump Types and Applications	<b>Knowledge of ducted/ductless/package terminal air source heat pumps (ASHPs)</b>	Required
	Knowledge of ground source and water source heat pumps	4
Compressor Stages and Sequences of Operation	Knowledge of variable speed compressors	2
	Knowledge of minimum and maximum system capacity in variable speed systems	2
	Understand difference between constant speed supply fans and variable speed supply fans	2
	Systems with variable speed supply fans	2
System Selection and Installation	<b>Importance of heating and cooling load calculations</b>	Required
	<b>Evaluate existing ductwork (Duct sizing, insulation, and preparing for condensation)</b>	Required
	<b>Determine outdoor unit location, protection from outdoor elements, condensate management</b>	Required
	<b>Select and size appropriate system</b>	Required
	Select appropriate filter (≥MERV 8 while ensuring appropriate air flow across the coil. If appropriate, use a flexible, air-tight gasket to prevent air leakage)	5
	Charge refrigerant and prevent leaks (include proper flaring tools, best practices with brazing to prevent oxidation, etc.)	1
	Knowledge of proper refrigerant system evacuation procedure (include digital micron gauge)	1
Understand Quality Installation Standards and Specifications (ACCA QI5)	8	
Smart Thermostats	Install, evaluate, and properly set smart thermostats for heat pumps	2
Cold Climate Heat Pump Systems	<b>Performance impacts from different/extreme outdoor temperatures</b>	Required
	<b>Consider sizing needs for different climates and outdoor temperature levels</b>	Required
	Analyze extended performance data when calculating capacity at design conditions	5
	Set up electric resistance controls for back up heat	5
Dual Fuel heat pump systems	<b>Knowledge of dual fuel heat pump system operation</b>	Required
	Install and service smart thermostats in a dual fuel pump system	2
	<b>Derive and specify a dual fuel system balance point temperature</b>	Required
Additional Considerations when Retrofitting Fossil Fuel Systems	<b>Evaluate electrical panel capacity to account for a heat pump’s electrical load, both for adding heating to a system or conversion</b>	Required
	Understand strategies for avoiding electrical panel upgrades	5
	Communicate operation and temperature differences between heat pumps and fossil fuel systems	5
Sales / Customer Interactions / Decision Guidance	Explain differences between standard efficiency and high efficiency heat pumps	5
	Understand the business case for heat pump installation	8
	Communicate the business case for quality installation	8
	Understand the market trends for heat pumps and the benefits of switching to heat pumps in existing homes	8
	<b>Understand the climate impacts of installing a heat pump</b>	Required
	<b>Calculate and evaluate the operating cost savings of different heating and cooling systems, as well as available incentives</b>	Required
	<b>Evaluate and identify the most suitable heating equipment for a specific location</b>	Required
	Understand customer preferences and limitations related to equipment selection	8
Preventative Maintenance	Use smart diagnostic tools to test system performance	3
	Use smart diagnostic tools to troubleshoot system issues	3
	Install and use add-on fault detection / monitoring equipment	3
	Clean and maintain equipment on a regular schedule	3