



Heat Pump Components, Codes and Conditions

Course Outline

By

Casey O'Malley Associates

Course description:

This two-hours session will cover advanced refrigeration and heat pumps in an easy to understand format. Seasoned inspectors typically know the basic items to look for; but did you ever wonder; how does a heat pump work? Additionally, we will discuss modalities and evidences of failures and/or improper installations and many several actual field conditions. Our emphasis will be the fundamentals of inspection standards of practice with respect to air to air heat pumps, and we will discuss ground and water source heat pumps.

Goal:

Upon completion of this class, students will be more knowledgeable regarding the installation, inspection and evaluation of various heat pump systems and the myriad of related components with application to residential inspection. Students will also be more knowledgeable regarding the appropriate conditions observed that warrant recommendation of further analysis.

Learning Objectives:

Upon completion of the course students will be able to demonstrate a working knowledge of:

1. Nomenclature specific to heat pump system installations and their relation to Home Inspection
2. Identify components and proper installation with respect to heat pump systems
3. Identify modalities and evidences of failure; installation, weathering and mechanical
4. Common "defects" and recognition/reporting

Books and Handouts:

PowerPoint Presentation by Michael Casey

Evaluation:

Class participation



Class Schedule

Draft Abstract:

Heat Pumps; Components, Conditions and Codes. Inspectors must be knowledgeable regarding modern installation requirements and practices **and** field conditions indicative of potential non-performance. This session will discuss terminology and function, inspection requirements, installation details and common faulty conditions and applying our knowledge to home inspections.

Timing: 2 hours

Class Presentation: PowerPoint presentation by Michael Casey

Timed Outline:

Standards and inspection requirements 5 minutes

Terminology 5 minutes

Heat transfer and refrigerant theory, balance point 20 minutes

Parts of a heat pump system and function (accumulator, reversing valve, etc) 10 minutes

Installation Basics and Details 20 minutes

Drain system details 10 minutes

Air to Air, ground and water source heat pumps 10 minutes

Thermostats, supplemental heat, emergency heat 20 minutes

Typical defects and recognition 20 minutes

Bio:

Or other instructor as approved by COA

Michael is a partner with Casey, O'Malley Associates; a national A.M. Best recommended consulting firm based in San Diego. He is a past president of the California Real Estate Inspection Association (1994/1995) and of the American Society of Home Inspectors (ASHI) (2002). Mike is multi-code certified by the ICC and IAPMO. He is also a licensed general, plumbing and mechanical contractor in several states and a Virginia Certified home inspector. Besides co-authoring several books in the *Code Check* series, Michael has authored numerous other books, and has taught home and building inspection and has an expert witness practice throughout North America since 1987.

Michael can be contacted at

mike@caseyomalleyassociates.com or 866-363-1330 Ex. 1