Oklahoma CTE

Residential HVAC System Design (2016)

Adopted 2016

Mathematics for HVACR	**Demonstrate proficiency in solving equations.**
	Calculate ΔT.
	Understand and demonstrate knowledge of proper duct sizing.
	Explain the process and demonstrate the ability to calculate heat loss and gain for single family dwelling and residential duplex/two flat.
Heat (Gas and/or Electric)	**Identify the formula for sensible heat.**
	Describe and demonstrate the method of measuring static pressure.
	Describe the effects of relative humidity on comfort and health.
	Describe sensible and latent heat.
	Define BTU.
	Describe the principles of dehumidification and humidification.
Air Flow	**Describe and measure temperature rise.**
	Explain the procedure for determining CFM and demonstrate.
	Describe the effects of static pressure on air flow and demonstrate.
	State the recommended air velocities throughout the supply and return duct system.
	Measure air velocities throughout the supply and return duct system.
	Describe the construction and efficiencies of varying filtering media and systems.
	Describe, fabricate and install various types of duct connectors.
	escribe "R" values and noise reduction elements of various duct materials.

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Air Conditioning	**Describe the laws of thermodynamics.**
	Describe and demonstrate convection, conduction, and radiation.
	Define enthalpy.
	Explain the condensation of a vapor, and its effect on heat.
	Explain and demonstrate vaporization of a liquid, and its effect on heat.
	Describe the principles of dehumidification and humidification.
	**Describe and define the following: - BTU - latent heat - sensible heat - sub-cooled liquid and superheated vapor - dry and wet bulb temperatures - dew point **