

HANDOUT

PART 1

Ernie's PPT Facts to remember

1. What is 1 BTU? – heat to raise 1 pound of water 1 degree F
2. Sensible heat – energy that just changes temperature – light bulb, sun
3. Latent heat – the moisture part of energy – people sweat, RH%
4. All heat is measured in BTU's – 1 watt = 3.4 BTU's (sensible)
5. All heat is measured in BTU's – 1000 BTU = 1 pound of water
6. Solar energy = high noon – 237 BTU/ sqft on horizontal surface
7. 100 Watt light bulb = 3400 BTU/hr
8. People = sitting – 250 BTU sensible/hr & 250 BTU latent/hr
9. transmission – rate that heat moves through materials = "U" value
10. Insulation in stores sold as "R-13", etc. $U = 1/R$
11. Infiltration – air that leaks into a building and back out – typ 1 chg/hr
12. Infiltration is both sensible & latent heat
13. Ventilation is Code required outdoor air put into building
14. Moisture in air is measured as #water/#dry air
15. How big is a pound of dry air? – 13.5 cubic feet
16. 70F & 50%RH – contains about .0075 #water/#dry air (very tiny)
17. 70F & 100%RH – contains about .016 #water/#dry air (still tiny)
18. Moisture capacity of wood – normal 5 to 10 % by weight
19. Moisture in rotting wood – 15 to 25% or even more!
20. Wood and all organics are hygroscopic – absorbs & desorbs vapor