Based on an estimate using the graph on page 25 in the Guide & Workbook, what would the total heating in Btuh be for the location that requires the most heat?

Detroit MI beat out Denver with approximately 360,000 Btuh shown on the graph.

Note: We know the exact total is Zone 1 + Zone 2 from our table values, or 277,828 + 85,261 = 363,089 Btuh

Based on an estimate using the graph, what would the Sensible Cooling for Long Beach CA?

Based on an estimate using the graph, Long Beach CA has a Total Cooling Load of 190,000 Btuh and a Latent Cooling Load of about 40,000 Btuh.

Total Cooling = Sensible Cooling + Latent Cooling

Thus:

190,000 Btuh = Sensible Cooling + 40,000 Btuh; and Sensible Cooling =150,000 Btuh

A comparison number for evaluating how much humidity removal is required for cooling called Super Heat Ratio (SHR) is used in the equipment selection process. SHR = Sensible Cooling ÷ Total Cooling Load

Using the table values find the SHR for San Antonio TX.

First find the Sensible Cooling Total

350,000 Btuh = Total Cooling

100,000 Btuh = Latent Cooling

Thus,

350,000 – 100,000 = Sensible Cooling = 250,000

Second find the SHR

SHR = Sensible Cooling ÷ Total Cooling Load

350,000 Btuh = Total Cooling

100,000 Btuh = Latent Cooling

250,000 Btuh = Sensible Cooling

Thus,

SHR = 250,000 ÷ 350,000 = 0.714

Field Notes:

Numerous attempts to tune an HVAC system for a building in North Carolina with a new maintenance contract. The HVAC contractor wanted to know what the solution was for this building. A top diagnostic technician was sent to a location where the building was not cooling properly. While there, the technician found a *Manual N* load calculation was done for the equipment sizing. After studying the Load calculation the problem was clear: Undersized equipment, the wrong weather data was used. The load calculation had Dayton Ohio’s selected as the building’s location!