![Phoenix Energy Supply logo]

Instructions to use the Heat Load Estimator based on Historical Fuel Consumption

This tool can quickly translate historical fuel consumption into a Design Heating Load, however it is very important to understand the underlying assumptions to guard against inaccurate results. The following guidelines help illustrate these basic assumptions:

1. **The fuel consumption is strictly for space heating**—In the event the fuel was serving non-space heating loads such as domestic hot water or clothes drying the consumption data should be reduced to account for these non-heating loads. Judgement should be used for loads such as cooking and fireplaces, which to a great extent are contributing to heating the space.

2. **Time Period**—Although the heating degree-day data is based on annual data, this tool can be used for any time period as long as the time period for the consumption data correlates to the heating degree-day time period.

3. **Heating Degree-Days are based on a 65°F Base**-This is reasonable when space temperatures are maintained between 68°F & 72°F. For different thermostat setpoints heating degree-days should be obtained at a base temperature 5 degrees below the thermostat setpoint. Here is one website to obtain such data— http://www.degreedays.net/

4. Step by Step Instructions:

⇒ Enter Project Name, Date & your name (by:) so that 3 months from now you can remember which project this pertains to.

⇒ Select the Fuel Type (Fuel Oil, Propane or Natural Gas)

⇒ Enter consumption (in gallons or therms) for the time period that correlates to the heating degree-day data (annual if data for listed cities is used).

⇒ Enter the delivery efficiency of the furnace or boiler, it may be prudent to enter both a minimum and maximum to determine the impact on the load over a reasonable range of estimated efficiencies.

⇒ The Solar/Internal Gain Factor should probably be left at 23% unless there may be unique circumstances that would warrant adjusting it.

⇒ Select a Country or the Manual method of entering heating degree-days, if you are using a time period other than one year you must enter the specific heating degree-days and a appropriate outdoor design temperature.

⇒ Select State/Province & City if appropriate that reflects the location closest to your project.

⇒ The Design Heat Loss should help you select equipment based on your own specific design strategies.

⇒ Print the document for your records (hopefully as a .pdf so that you are not wasting paper).

Heat Load Estimator based on Annual Fuel Consumption

info@phoenixenergysupply.com (315) 253-3720

Project Name: [   ]
Date: [   ] by: [   ]

◉ FUEL OIL   ○ PROPANE   ○ NATURALGAS

Annual Consumption	800	gallons
Fuel Energy Content	134,000	BTU/gallon
Total Energy Purchased	107,200,000	BTU/Year
Average Efficiency ◄ □ ►	82%	Best Guess
Heat Delivered to House	87,904,000	
Solar/Int Gain % ◄ □ ►	23%	23% is Normal
Total Heat Required	114,161,039	BTU

◉ United States ○ Canada ○ Manual   Enter Manual HDD/Design Temp

[6,000] [12 deg F]

State/Province: Alabama ▼
City: Birmingham AP ▼

Heating Degree-Days	2,641	Heating Degree-Days
BTU/Heating Degree-Day	43,226	BTU/HDD
OD Design Temp	21	^{o}F
Design Heat Loss	**79,248**	BTU/Hr @ 21 F

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