Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2015 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This calculator will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please fill out all of the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please call the WSU Energy Extension Program at (360) 956-2042 for assistance.

Project Information	*Contact Information*
2322 Basic	Disney and Associates, Inc.
Establish a Basic Permit	5706 Bethel Road SE Suite 100
Port Orchard, WA 98367	Port Orchard, WA 98367

Heating System Type: ○ All Other Systems ◉ Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions".

Design Temperature
Instructions: Port Orchard
Design Temperature Difference (ΔT) 41
ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building
Conditioned Floor Area
Instructions: Conditioned Floor Area (sq ft) 2,322
Average Ceiling Height
Instructions: Average Ceiling Height (ft) 9.0
Conditioned Volume 20,898

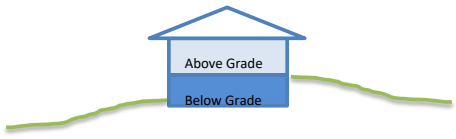
	U-Factor	X	Area	=	UA
Glazing and Doors (Instructions: U-0.28)	0.280		504		141.06
Skylights (Instructions)	0.50		16		8.00
Insulation					
Attic (Instructions: R-49)	0.026		2,178		56.63
Single Rafter or Joist Vaulted Ceilings (Instructions: R-38 Vented)	0.027		2,178		58.81
Above Grade Walls *(see Figure 1)* (Instructions: R-21 Intermediate)	0.056		3,748		209.89
Floors (Instructions: R-30)	0.029		2,322		67.34
Below Grade Walls *(see Figure 1)* (Instructions: R-21 Interior)	0.042		1,137		47.75
Slab Below Grade *(see Figure 1)* (Instructions: R-10 Fully insulated)	F-Factor 0.303		Length 144		43.63
Slab on Grade *(see Figure 1)* (Instructions: No Slab on Grade in this project.)	F-Factor ---		Length		

Location of Ducts
Instructions: Unconditioned Space
Duct Leakage Coefficient 1.10

CHANGES MUST Be Approved Prior To Performing Work

Sum of UA	633.11	
Envelope Heat Load *Sum of UA X ΔT*	25,958	Btu / Hour
Air Leakage Heat Load *Volume X 0.6 X ΔT X .018*	9,254	Btu / Hour
Building Design Heat Load *Air Leakage + Envelope Heat Loss*	35,211	Btu / Hour
Building and Duct Heat Load *Ducts in unconditioned space: Sum of Building Heat Loss X 1.10* *Ducts in conditioned space: Sum of Building Heat Loss X 1*	38,732	Btu / Hour
Maximum Heat Equipment Output *Building and Duct Heat Loss X 1.40 for Forced Air Furnace* *Building and Duct Heat Loss X 1.25 for Heat Pump*	48,415	Btu / Hour

Figure 1.



Established Basic Permit #
19-05700

(07/01/13)

Permit Number: 20-00762