

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

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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

Puyallup

Design Temperature Difference (ΔT)
 $\Delta T = \text{Indoor (70 degrees)} - \text{Outdoor Design Temp}$

51

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

Area of Building

Conditioned Floor Area

Instructions

Conditioned Floor Area (sq ft)

1,341

Average Ceiling Height

Instructions

Average Ceiling Height (ft)

8.0

Conditioned Volume
10,728

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

Glazing and Doors

Instructions

U-0.28

U-Factor X Area = UA
0.280 X 240 = 67.20

Skylights

Instructions

U-Factor X Area = UA
0.50 X [] = ---

Insulation

Attic

Instructions

R-49

U-Factor X Area = UA
0.026 X 1,341 = 34.87

Single Rafter or Joist Vaulted Ceilings

Instructions

Select R-Value

U-Factor X Area = UA
No selection X [] = ---

Above Grade Walls (see Figure 1)

Instructions

R-21 Intermediate

U-Factor X Area = UA
0.056 X 1,608 = 90.05

Floors

Instructions

R-30

U-Factor X Area = UA
0.029 X 1,341 = 38.89

Below Grade Walls (see Figure 1)

Instructions

No Below Grade Walls in this project.

U-Factor X Area = UA
0.028 X [] = ---

Slab Below Grade (see Figure 1)

Instructions

No Slab Below Grade in this project.

F-Factor X Length = UA
0.303 X [] = ---

Slab on Grade (see Figure 1)

Instructions

No Slab on Grade in this project.

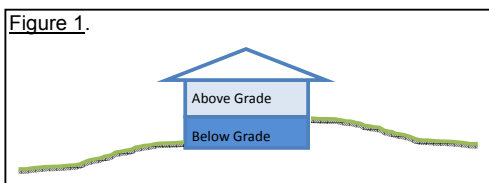
F-Factor X Length = UA
--- X [] = ---

Location of Ducts

Instructions

Conditioned Space

Duct Leakage Coefficient
1.00



Sum of UA	231.00
Envelope Heat Load	11,781 Btu / Hour
<i>Sum of UA X ΔT</i>	
Air Leakage Heat Load	5,909 Btu / Hour
<i>Volume X 0.6 X ΔT X .018</i>	
Building Design Heat Load	17,690 Btu / Hour
<i>Air Leakage + Envelope Heat Loss</i>	
Building and Duct Heat Load	17,690 Btu / Hour
<i>Ducts in unconditioned space: Sum of Building Heat Loss X 1.10</i>	
<i>Ducts in conditioned space: Sum of Building Heat Loss X 1</i>	
Maximum Heat Equipment Output	22,113 Btu / Hour
<i>Building and Duct Heat Loss X 1.40 for Forced Air Furnace</i>	
<i>Building and Duct Heat Loss X 1.25 for Heat Pump</i>	