

Heating Appliance Worksheets – Retrofit

Building Department: 604-990-2480, building@dnv.org, fax: 604-984-9683

COMPLETION: To ensure legibility, please complete (type online) then print. Sign the printed copy and submit to the department and address indicated above.

Heating Load Worksheet – Square Foot Method		GAS	
Job Address			
Completed by			
Phone		Quality First #	
Signature		Date	

CALCULATIONS

Step 1 Calculate **Dwelling Heat Load** =

$$\underline{\hspace{2cm}} \text{ sq ft X } \underline{\hspace{2cm}} \text{ BTUH/sq ft} = \boxed{\hspace{2cm}} \text{ BTUH } \text{ A}$$

Step 2 If home has a heated crawlspace, calculate **Crawlspace Heat Load** =

$$\underline{\hspace{2cm}} \text{ sq ft X } \underline{\hspace{2cm}} \text{ BTUH/sq ft} = \boxed{\hspace{2cm}} \text{ BTUH } \text{ B}$$

(Total heated area of crawlspace) (Crawlspace Heat Load Factor)

Step 3 Base Heat Load @ 55 °F DTD (Box A + Box B = Box C) = $\boxed{\hspace{2cm}}$ BTUH C

Step 4 Multiply Base Heat Load (Box C) by Regional Temperature Adjustment (RTA) Factor from Design Temperature Chart X $\boxed{0.96}$ D

Step 5 **Regionally Adjusted Base Heat Load** (Box C x Box D = Box E) = $\boxed{\hspace{2cm}}$ BTUH E

Step 6 Add thermostat **Setback Pick-up factor of 10%**
0.10 x $\underline{\hspace{2cm}}$ BTUH in Box E = $\boxed{\hspace{2cm}}$ BTUH F

Step 7 If dwelling heated with hot-water appliance, skip Step 8; proceed to Step 9.

Step 8 Add heat load due to outdoor air brought in for combustion (B149.1 & .2) With 4" Ø duct and directly connected to R.A. Plenum
Add 3000 BTUH times TRA factor (Box D) = 3000 BTUH x $\underline{\hspace{2cm}}$ = $\boxed{\hspace{2cm}}$ BTUH G

Step 9 Add Box E + F + G = **Total BTUH for Appliance Selection** = $\boxed{\hspace{2cm}}$ BTUH H

Heating Appliance Worksheets – Retrofit

Building Department: 604-990-2480, building@dnv.org, fax: 604-984-9683

COMPLETION: To ensure legibility, please complete (type online) then print. Sign the printed copy and submit to the department and address indicated above.

Heating Appliance Selection Worksheet – Forced Air Heating System		GAS	
Job Address			
Completed by			
Phone		Quality First #	
Signature		Date	
CALCULATIONS			

Total Heated Floor of Dwelling = **Sq ft**

Step 1 (Box 4 – Heat Loss Summary Worksheet) = **BTUH A**

Step 2 Use manufacturer's specification tables to select an appliance with a BTUH output of at least the value of Box A (or one (1) size larger **only**).

Make _____ Input = **BTUH B**

Model _____ **Output** = **BTUH C**

High Altitude _____ Two-stage furnace-size to High-0Fire Input and Output

Step 3 Selected Appliance Air Circulation (CFM):

Duct static Pressure @ .3" W.C. External Static Pressure (ESP) **D**

Add ESP (inches W.C.) per manufacturer's data for installed Cooling Coil = **E**

Add ESP (inches W.C.) per manufacturer's data for installed High Efficiency Air Filter = **F**

Total System ESP (Box D + Box E + Box F) = **G**

Motor Speed Selected @ _____ ESP (Box G) = Heating CFM **H**

Step 4 $\frac{\text{Temperature Rise}}{\text{Furnace OUTPUT}} = \frac{(\text{Box C})}{(\text{Box H})} \frac{\text{BTUH}}{\text{CFM} \times 1.1} = \text{TEMPERATURE RISE}$ **F I**

Temperature Rise Range from Manufacturer's Technical Specifications (Box 1) MUST fall within this range = _____

Step 5 Duct System Designed for Cooling: _____ CFM **CFM J**
COOLING CFM

COOLING CAPACITY @ 400 CFM/TON	Tons	1.5	2.0	2.5	3.0	4.00	5.00
	CFM	600	800	1000	1200	1600	2000

Step 6 Retro-Fit Installation (Attach worksheets if required by Inspection Authority) Estimated Capacity of existing duct system = **CFM K**
RETRO-FIT CFM