



Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form
RPER 1.01
8 Mar 10

Town of Northborough

Contractor _____
Mechanical License # _____
Building Plan # _____
Home Address (Street or Lot#, Block, Subdivision) _____

REQUIRED ATTACHMENTS	REQUIRED	ATTACHED
Manual J1 Form (and supporting worksheets):	<input type="checkbox"/> Yes	<input type="checkbox"/> No
or MJ1AE Form (and supporting worksheets):	<input type="checkbox"/> Yes	<input type="checkbox"/> No
OEM performance data (heating, cooling, blower):	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Manual D Friction Rate Worksheet:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Duct distribution system sketch:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

HVAC LOAD CALCULATION (UMC 1106.1) Manual J, 8th Ed., V 2.5 Clinton MA

Design Conditions

Winter Design Conditions

Outdoor temperature _____ °F
Indoor temperature _____ °F
Total heat loss _____ Btu

Summer Design Conditions

Outdoor temperature _____ °F
Indoor temperature _____ °F
Grains difference _____ Δ Gr @ _____ % Rh
Sensible heat gain _____ Btu
Latent heat gain _____ Btu
Total heat gain _____ Btu

Building Construction Information

Building

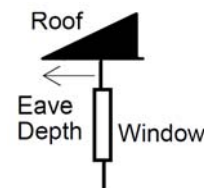
Orientation (Front door faces) _____
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms _____
Conditioned floor area _____ Sq Ft

Number of occupants _____

Windows

Eave overhang depth _____ Ft
Internal shade _____
Blinds, drapes, etc _____
Number of skylights _____



HVAC EQUIPMENT SELECTION

Heating Equipment Data

Equipment type _____
Furnace, Heat pump, Boiler, etc. _____
Model _____
Heating output capacity _____ Btu
Heat pumps - capacity at winter design outdoor conditions _____
Auxiliary heat output capacity _____ Btu

Cooling Equipment Data

Equipment type _____
Air Conditioner, Heat pump, etc _____
Model _____
Sensible cooling capacity _____ Btu
Latent cooling capacity _____ Btu
Total cooling capacity _____ Btu

Blower Data

Heating CFM _____ CFM
Cooling CFM _____ CFM

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (UMC 601.2)

Design airflow _____ CFM
Longest supply duct: _____ Ft
Duct Materials Used (circle)
Trunk Duct: Duct board, Flex, Sheet metal, Lined sheet metal, Other (specify) _____
External Static Pressure (ESP) _____ IWC
Longest return duct: _____ Ft
Component Pressure Losses (CPL) _____ IWC
Total Effective Length (TEL) _____ Ft
Branch Duct: Duct board, Flex, Sheet metal, Lined sheet metal, Other (specify) _____
Available Static Pressure (ASP) _____ IWC
Friction Rate: _____ IWC
ASP = ESP - CPL
Friction Rate = (ASP × 100) ÷ TEL

I declare the load calculation, equipment selection, and duct system design were rigorously performed based on the building plan listed above, I understand the claims made on these forms will be subject to review and verification.

Contractor's Printed Name _____ Date _____
Contractor's Signature _____
Email _____ Daytime Phone # _____