



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

Form
RPER 1.01
8 Mar 10

Hanover County Building Inspections

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

REQUIRED ATTACHMENTS¹

Manual J1 Form (and supporting worksheets):
or MJ1AE Form² (and supporting worksheets):
OEM performance data (heating, cooling, blower):
Manual D Friction Rate Worksheet:
Duct distribution system sketch:

ATTACHED

Yes No
Yes No
Yes No
Yes No
Yes No

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature 18 °F
Indoor temperature 72 °F
Total heat loss _____ Btu

Summer Design Conditions

Outdoor temperature 92 °F
Indoor temperature 75 °F
Grains difference 39 Δ Gr @ 50 % 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

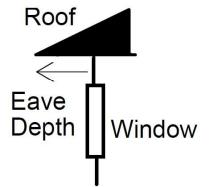
Number of occupants _____

Windows

Eave overhang depth _____ Ft

Internal shade medium blinds 45 deg
Blinds, drapes, etc

Number of skylights _____



HVAC EQUIPMENT SELECTION (IRC M1401.3)

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 (IRC M1601.1)

Design airflow _____ CFM

External Static Pressure (ESP) _____ IWC

Component Pressure Losses (CPL) _____ IWC

Available Static Pressure (ASP) _____ IWC

ASP = ESP - CPL

Longest supply duct: _____ Ft

Longest return duct: _____ Ft

Total Effective Length (TEL) _____ Ft

Friction Rate: _____ IWC

Friction Rate = (ASP × 100) ÷ TEL

Duct Materials Used (circle)

Trunk Duct: Duct board, Flex, Sheet metal,
Lined sheet metal, Other (specify) _____

Branch Duct: Duct board, Flex, Sheet metal,
Lined sheet metal, Other (specify) _____

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 _____