



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

Form  
RPER 1.01  
8 Mar 10

County, Town, Municipality, Jurisdiction  
Header Information

Contractor \_\_\_\_\_  
Mechanical License # \_\_\_\_\_  
Building Plan # Manual J, 8th Ed., V 2.0 (Clinton MA)  
Home Address (Street or Lot#, Block, Subdivision) \_\_\_\_\_

### REQUIRED ATTACHMENTS<sup>1</sup>

Manual J1 Form (and supporting worksheets):  
or MJ1AE Form<sup>2</sup> (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 (UMC 1106.1)

### Design Conditions

#### Winter Design Conditions

Outdoor temperature 2 °F  
Indoor temperature 70 °F  
Total heat loss \_\_\_\_\_ Btu

#### Summer Design Conditions

Outdoor temperature 87 °F  
Indoor temperature 75 °F  
Grains difference 24 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

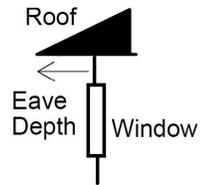
Number of occupants \_\_\_\_\_

#### Windows

Eave overhang depth \_\_\_\_\_ Ft

Internal shade \_\_\_\_\_  
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

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 \_\_\_\_\_

Reserved for use by County, Town, Municipality, or Authority having jurisdiction.

<sup>1</sup> The AHJ shall have the discretion to accept Required Attachments printed from approved ACCA software vendors, see list on page 2 of instructions.

<sup>2</sup> If abridged version of Manual J is used for load calculation, then verify residence meets requirements, see Abridged Edition Checklist on page 13 of instructions.