



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

Form  
RPER 1  
15 Mar 09

County, Town, Municipality, Jurisdiction  
Header Information

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

### REQUIRED ATTACHMENTS

Manual J1 Form (and supporting worksheets):  
or MJ1AE Form\* (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 \_\_\_\_\_ °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

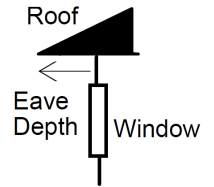
Orientation (Front door faces) \_\_\_\_\_  
North, East, West, South, Northeast, Northwest, Southeast, Southwest

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 (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  
Static pressure \_\_\_\_\_ IWC  
Fan's rated external static pressure for design airflow

## 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 \_\_\_\_\_

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

\* Home qualifies for MJ1AE Form based on Abridged Edition Checklist.