

Project Information

For: contractor name, your co name
123 main st, town you are working in, ma 12345
Phone: must have contact #

Notes:

Design Information

Weather: Worcester Regional AP, MA, US

very important

Winter Design Conditions

Outside db 7 °F
Inside db 70 °F
Design TD 63 °F

Summer Design Conditions

Outside db 83 °F
Inside db 75 °F
Design TD 8 °F
Daily range L
Relative humidity 50 %
Moisture difference 25 gr/lb

Heating Summary

Structure 37088 Btuh
Ducts 5492 Btuh
Central vent (7 cfm) 451 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 43032 Btuh

Sensible Cooling Equipment Load Sizing

Structure 14760 Btuh
Ducts 3880 Btuh
Central vent (7 cfm) 57 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.88
Equipment sensible load 16436 Btuh

Infiltration

**If new home must
have mechanical
ventilation**

Method
Construction quality
Fireplaces

Latent Cooling Equipment Load Sizing

Structure 2376 Btuh
Ducts 668 Btuh
Central vent (7 cfm) 109 Btuh

	Heating	Cooling
Area (ft²)	2016	2016
Volume (ft³)	16128	16128
Air changes/hour	0.41	0.21
Equiv. AVF (cfm)	110	56

Equipment latent load 3045 Btuh

Equipment Total Load (Sen+Lat) 19481 Btuh
Req. total capacity at 0.70 SHR 2.0 ton

Heating Equipment Summary

Make	n/a
Trade	n/a
Model	n/a
AHRI ref	n/a
Efficiency	n/a
Heating input	0 Btuh
Heating output	0 °F
Temperature rise	0 cfm
Actual air flow	0 cfm/Btuh
Air flow factor	0 in H2O
Static pressure	n/a
Space thermostat	

Cooling Equipment Summary

Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

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Outside db 7 °F
Inside db 70 °F
Design TD 63 °F

Summer Design Conditions

Outside db 83 °F
Inside db 75 °F
Design TD 8 °F
Daily range L
Relative humidity 50 %
Moisture difference 25 gr/lb

Heating Summary

Structure 17378 Btuh
Ducts 2768 Btuh
Central vent (0 cfm) 0 Btuh
Outside air
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 20145 Btuh

Sensible Cooling Equipment Load Sizing

Structure 7069 Btuh
Ducts 1930 Btuh
Central vent (0 cfm) 0 Btuh
Outside air
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.88
Equipment sensible load 7920 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	1008	1008
Volume (ft³)	8064	8064
Air changes/hour	0.82	0.42
Equiv. AVF (cfm)	110	56

Latent Cooling Equipment Load Sizing

Structure 1320 Btuh
Ducts 334 Btuh
Central vent (0 cfm) 0 Btuh
Outside air
Equipment latent load 1654 Btuh
Equipment Total Load (Sen+Lat) 9574 Btuh
Req. total capacity at 0.85 SHR 0.8 ton

Heating Equipment Summary

Make American Standard
Trade AMERICAN STANDARD
Model ADH1B040A9H21B*
AHRI ref 5722420
Efficiency 95 AFUE
Heating input 40000 Btuh
Heating output 38000 Btuh
Temperature rise 76 °F
Actual air flow 473 cfm
Air flow factor 0.023 cfm/Btuh
Static pressure 0.70 in H2O
Space thermostat

Cooling Equipment Summary

Make American Standard
Trade AMERICAN STANDARD
Cond 4A7A3018H1
Coil C(A,C,D,E)30B44+S9X2B040U3PS+TDR
AHRI ref 10208688
Efficiency 12.5 EER, 15 SEER
Sensible cooling 12070 Btuh
Latent cooling 2130 Btuh
Total cooling 14200 Btuh
Actual air flow 473 cfm
Air flow factor 0.053 cfm/Btuh
Static pressure 0.70 in H2O
Load sensible heat ratio 0.84

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Design Information

Weather: Worcester Regional AP, MA, US

Winter Design Conditions

Outside db 7 °F
Inside db 70 °F
Design TD 63 °F

Summer Design Conditions

Outside db 83 °F
Inside db 75 °F
Design TD 8 °F
Daily range L
Relative humidity 50 %
Moisture difference 25 gr/lb

Heating Summary

Structure 19711 Btuh
Ducts 2725 Btuh
Central vent (7 cfm) 451 Btuh
Outside air 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 22886 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	1008	1008
Volume (ft³)	8064	8064
Air changes/hour	0.58	0.30
Equiv. AVF (cfm)	78	40

Sensible Cooling Equipment Load Sizing

Structure 7691 Btuh
Ducts 1930 Btuh
Central vent (7 cfm) 57 Btuh
Outside air 0 Btuh
Blower n
Use manufacturer's data
Rate/swing multiplier 0.88
Equipment sensible load 8516 Btuh

Latent Cooling Equipment Load Sizing

Structure 1057 Btuh
Ducts 334 Btuh
Central vent (7 cfm) 109 Btuh
Outside air 1500 Btuh
Equipment latent load 10016 Btuh
Equipment Total Load (Sen+Lat) 10016 Btuh
Req. total capacity at 0.85 SHR 0.8 ton

Heating Equipment Summary

Make American Standard
Trade AMERICAN STANDARD
Model ADD2A040A9242A*
AHRI ref 2016744
Efficiency 80 AFUE
Heating input 40000 Btuh
Heating output 32000 Btuh
Temperature rise 64 °F
Actual air flow 470 cfm
Air flow factor 0.021 cfm/Btuh
Static pressure 0.70 in H2O
Space thermostat

Cooling Equipment Summary

Make American Standard
Trade ASPEN
Cond 4A7A3018H1
Coil C(A,C,D,E)30A2G+S9X2B040U3PS+TDR
AHRI ref 10208692
Efficiency 11.8 EER, 14 SEER
Sensible cooling 11985 Btuh
Latent cooling 2115 Btuh
Total cooling 14100 Btuh
Actual air flow 470 cfm
Air flow factor 0.049 cfm/Btuh
Static pressure 0.70 in H2O
Load sensible heat ratio 0.87

must be complete

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Load Short Form
Entire House
company name

Job: 1234
Date: Dec. 30th 2018
By: mb

company address, town your company is in License: **must have lic. type and #**

Project Information

For: contractor name, your co name
123 main st, town you are working in, ma 12345
Phone: must have contact #

Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	7	83	Method	Average
Inside db (°F)	70	75	Construction quality	
Design TD (°F)	63	8	Fireplaces	0
Daily range	-	L		
Inside humidity (%)	45	50		
Moisture difference (gr/lb)	45	25		

HEATING EQUIPMENT

Make n/a
Trade n/a
Model n/a
AHRI ref n/a

Efficiency
Heating input
Heating output
Temperature rise
Actual air flow
Air flow factor
Static pressure
Space thermostat

0 Btuh
0 °F
0 cfm
0 cfm/Btuh
0 in H2O
n/a

will be blank if
home has more
than 1 system

COOLING EQUIPMENT

Make n/a
Trade n/a
Cond n/a
Coil n/a
AHRI ref n/a

Efficiency n/a
Sensible cooling 0 Btuh
Latent cooling 0 Btuh
Total cooling 0 Btuh
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0 in H2O
Load sensible heat ratio 0

ROOM NAME		Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
2nd fl	d	1008	22435	9621	470	470
1st fl	d	1008	20145	9000	473	473
Entire House	d	2016	42581	18620	943	943
Other equip loads			451	57		
Equip. @ 0.88 RSM				16436		
Latent cooling				3045		
TOTALS		2016	43032	19481	943	943

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Load Short Form

1stfl
company name

Job: 1234
Date: Dec. 30th 2018
By: mb

company address, town your company is in License: **must have lic. type and #**

Project Information

For: contractor name, your co name
123 main st, town you are working in, ma 12345
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Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	7	83	Method	Average
Inside db (°F)	70	75	Construction quality	
Design TD (°F)	63	8	Fireplaces	
Daily range	-	L		
Inside humidity (%)	40	50		
Moisture difference (gr/lb)	39	25		

0

HEATING EQUIPMENT

Make American Standard
Trade AMERICAN STANDARD
Model ADH1B040A9H21B*
AHRI ref 5722420
Efficiency 95 AFUE
Heating input 40000 Btuh
Heating output 38000 Btuh
Temperature rise 76 °F
Actual air flow 473 cfm
Air flow factor 0.023 cfm/Btuh
Static pressure 0.70 in H2O
Space thermostat

COOLING EQUIPMENT

Make American Standard
Trade AMERICAN STANDARD
Cond 4A7A3018H1
Coil C(A,C,D,E)30B44+S9X2B040U3PS+TDR
AHRI ref 10208688
Efficiency 12.5 EER, 15 SEER
Sensible cooling 12070 Btuh
Latent cooling 2130 Btuh
Total cooling 14200 Btuh
Actual air flow 473 cfm
Air flow factor 0.053 cfm/Btuh
Static pressure 0.70 in H2O
Load sensible heat ratio 0.84

must be filled in, good
to check to see if it is
actually whats there..

ROOM NAME	Area (ft²)	Htg load (Btuh)	AVF (n)	Clg AVF (cfm)
living	208	4563	107	161
den	196	4211	99	83
kitchen	195	3794	89	125
base stairs	40	0	0	0
lav	40	1802	42	32
dining	251	4388	103	53
foyer/stairs	78	1389	33	20

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1stfl	d	1008	20145	9000	473	473
Other equip loads			0	0		
Equip. @ 0.88 RSM				7920		
Latent cooling				1654		
TOTALS		1008	20145	9574	473	473

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2nd fl	d	1008	22435	9621	470	470
Other equip loads			451	57		
Equip. @ 0.88 RSM				8516		
Latent cooling				1500		
TOTALS		1008	22886	10016	470	470

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Design Conditions

Location:

Worcester Regional AP, MA, US
Elevation: 1017 ft
Latitude: 42°N

must be your area

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

7
-
15.0

Cooling

83
16 (L)
70
7.5

these values are from location data

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
63
45
44.6

Cooling

75
8
50
24.9

Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12F-0sw: Fm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood fm, 16" o.c. stud	n	499	0.065	21.0	4.11	2053	0.68	337
	e	388	0.065	21.0	4.11	1596	0.68	262
	s	468	0.065	21.0	4.11	1926	0.68	316
	w	385	0.065	21.0	4.11	1584	0.68	260
	all	1740	0.065	21.0	4.11	7159	0.68	1176

Partitions

(none)

wall r value

Windows

10C-w: 2 glazing, clr low-e outr, air gas, wd fm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.24); 6.67 ft head ht	n	35	0.300	0	19.0	665	4.89	171
2 glazing, clr low-e outr, argon gas, wd fm mat, clr innr, 1/4" gap, 1/8" thk;	n	42	0.300	0	19.0	798	8.13	341
2 glazing, clr low-e outr, argon gas, wd fm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	e	60	0.300	0	19.0	1139	30.6	1833
	s	87	0.300	0	19.0	1652	15.5	1347
	w	42	0.300	0	19.0	798	30.6	1283
	all	231	0.300	0	19.0	4387	20.8	4805

window u values

Doors

11D0: Door, wd sc type	s	21	0.390	0	24.7	518	8.42	177
	w	21	0.390	0	24.7	518	8.42	177
	all	42	0.390	0	24.7	1037	8.42	354

Ceilings

16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 cell ins, 1/2" gypsum board int fnsh		1008	0.020	50.0	1.27	1276	0.90	909
		1008	0.020	50.0	1.27	1276	0.90	909
	all	2016	0.020	50.0	1.27	2552	0.90	1818

attic r value

Floors

19A-0bswp: Part floor, hrd wd flr fnsh, frm flr, 10" thkns, 1/2" gypsum board int fnsh		1008	0.295	0	7.01	7071	0.89	894
19A-38bswp: Flr floor, frm flr, 10" thkns, hrd wd flr fnsh, r-38 cav ins, tight bsmt ovr		1008	0.029	38.0	1.58	1591	0.20	201

floor insulation r value

company address, town your company is in License: **must have lic. type and #**

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Design Conditions

Location:		Indoor:		Heating	Cooling
Worcester Regional AP, MA, US		Indoor temperature (°F)		70	75
Elevation: 1017 ft		Design TD (°F)		63	8
Latitude: 42°N		Relative humidity (%)		40	50
		Moisture difference (gr/lb)		38.9	24.9
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	7	83	Method	Simplified	
Daily range (°F)	-	16 (L)	Construction quality	Average	
Wet bulb (°F)	-	70	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·F	Insul R ft²·F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	241	0.065	21.0	4.11	992	0.68	163
	e	200	0.065	21.0	4.11	823	0.68	135
	s	219	0.065	21.0	4.11	901	0.68	148
	w	185	0.065	21.0	4.11	761	0.68	125
	all	845	0.065	21.0	4.11	3477	0.68	571
Partitions								
(none)								
Windows								
10C-w: 2 glazing, clr low-e outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.24); 6.67 ft head ht	n	35	0.300	0	19.0	665	4.89	171
2 glazing, clr low-e outr, argon gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk;	n	12	0.300	0	19.0	228	8.13	98
2 glazing, clr low-e outr, argon gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk;	e	24	0.300	0	19.0	456	30.6	733
6.67 ft head ht	s	48	0.300	0	19.0	912	15.5	743
	w	18	0.300	0	19.0	342	30.6	550
	all	102	0.300	0	19.0	1937	20.8	2124
Doors								
11D0: Door, wd sc type	s	21	0.390	0	24.7	518	8.42	177
	w	21	0.390	0	24.7	518	8.42	177
	all	42	0.390	0	24.7	1037	8.42	354
Ceilings								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		1008	0.020	50.0	1.27	1276	0.90	909
Floors								
19A-38bswp: Fir floor, frm flr, 10" thkns, hrd wd flr fnsh, r-38 cav ins, tight bsmt ovr		1008	0.029	38.0	1.58	1591	0.20	201



Component Constructions

2nd fl
company name

Job: 1234
Date: Dec. 30th 2018
By: mb

company address, town your company is in License: **must have lic. type and #**

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Design Conditions

Location:		Indoor:		Heating	Cooling
Worcester Regional AP, MA, US		Indoor temperature (°F)		70	75
Elevation: 1017 ft		Design TD (°F)		63	8
Latitude: 42°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		50.4	24.9
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)	7	83	16 (L)	Method	Simplified
Daily range (°F)	-	70	7.5	Construction quality	Average
Wet bulb (°F)	-			Fireplaces	0
Wind speed (mph)	15.0				

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	258	0.065	21.0	4.11	1062	0.68	174
	e	188	0.065	21.0	4.11	774	0.68	127
	s	249	0.065	21.0	4.11	1025	0.68	168
	w	200	0.065	21.0	4.11	823	0.68	135
	all	895	0.065	21.0	4.11	3682	0.68	605

Partitions (none)

Windows

2 glazing, clr low-e outr, argon gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk;	n	30	0.300	0	19.0	570	8.13	244
2 glazing, clr low-e outr, argon gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk;	e	36	0.300	0	19.0	684	30.6	1100
6.67 ft head ht	s	39	0.300	0	19.0	741	15.5	604
	w	24	0.300	0	19.0	456	30.6	733
	all	129	0.300	0	19.0	2450	20.8	2681

Doors (none)

Ceilings

16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh	1008	0.020	50.0	1.27	1276	0.90	909
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Floors

19A-0bswp: Part floor, hrd wd flr fnsh, frm flr, 10" thkns, 1/2" gypsum board int fnsh	1008	0.295	0	7.01	7071	0.89	894
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no r value do to in conditioned space

