

*.blg label ... 35a(ach nat) 100d(ducts CFM25) 1w(base windows) all entered as CFM25

Annual Load (MMBtu/yr)	Heating	Cooling	Water Heating	Rating	
C:\...\Brandon35a100d1w-atCFM25.blg	1250cfm25 52.7	all 1/2 Htg 16.8	18.0	0.35AirLkg 88.6	*
C:\...\Brandon35a150d1w-atCFM25.blg	1300 54.4	16.9	18.0	0.36 88.5	
C:\...\Brandon35a200d1w-atCFM25.blg	1350 56.0	17.0	18.0	0.38 88.3	
C:\...\Brandon35a250d1w-atCFM25.blg	1400 57.5	17.0	18.0	0.39 88.1	
C:\...\Brandon35a300d1w-atCFM25.blg	1450 58.9	17.1	18.0	0.41 87.9	
C:\...\Brandon40a100d1w-atCFM25.blg	1425 54.8	16.8	18.0	0.40 88.4	*
C:\...\Brandon40a150d1w-atCFM25.blg	1475 56.5	16.9	18.0	0.41 88.2	
C:\...\Brandon40a200d1w-atCFM25.blg	1525 58.2	17.0	18.0	0.43 88.0	
C:\...\Brandon40a250d1w-atCFM25.blg	1575 59.6	17.0	18.0	0.44 87.8	
C:\...\Brandon40a300d1w-atCFM25.blg	1625 61.1	17.1	18.0	0.46 87.6	
C:\...\Brandon45a100d1w-atCFM25.blg	1605 56.9	16.8	18.0	0.45 88.1	*
C:\...\Brandon45a150d1w-atCFM25.blg	1655 58.7	16.9	18.0	0.46 87.9	
C:\...\Brandon45a200d1w-atCFM25.blg	1705 60.4	16.9	18.0	0.48 87.7	
C:\...\Brandon45a250d1w-atCFM25.blg	1755 61.9	17.0	18.0	0.49 87.5	
C:\...\Brandon45a300d1w-atCFM25.blg	1805 63.3	17.1	18.0	0.51 87.3	
C:\...\Brandon50a100d1w-atCFM25.blg	1791 59.2	16.8	18.0	0.50 87.8	*
C:\...\Brandon50a150d1w-atCFM25.blg	1841 61.0	16.9	18.0	0.52 87.6	
C:\...\Brandon50a200d1w-atCFM25.blg	1891 62.6	16.9	18.0	0.53 87.4	
C:\...\Brandon50a250d1w-atCFM25.blg	1941 64.2	17.0	18.0	0.54 87.2	
C:\...\Brandon50a300d1w-atCFM25.blg	1991 65.6	17.1	18.0	0.56 87.0	
C:\...\Brandon50a300d1.5w-atCFM25.blg	1991 67.2	19.9	18.0	0.56 86.4	*
C:\...\Brandon50a350d1.5w-atCFM25.blg	2041 68.6	20.0	18.0	0.57 86.2	
C:\...\Brandon50a400d1.5w-atCFM25.blg	2091 69.9	20.1	18.0	0.59 86.0	

Window Orientation w/c East

Indexes:	Increase	Approximate drop in score
Whole house air leakage	0.05ach	0.3
Duct leakage	50cfm25	0.2
Window area increase	+50%	0.6
extrapolate to	+10%	0.1

The results support my original observation of relative score stability in the Sampled or Volume builder application. This model transitions from 0.35 ACHnat/100cfm25 duct lkg to a whole house corrected leakage rate of 0.50 ACHnat/400cfm25/with 150%window area and is still 86.0 or EStar.

The ACH goes from 0.35 to 0.50

The ducts go from 100cfm25 to 400 cfm25

The window area increases by 50%

We can expect 100% of the sampled houses to fall within these factors

Conclusion: a 2+ point score cushion is secure. (BOPs are constructed on this type of margin.)

REM/Rate - Residential Energy Analysis and Rating Software v10.1 NP

This information does not constitute any warranty of energy cost or savings.
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Dave Roberts Comment:

I also think it is worth showing the math for score changes in the 86-88 point range:

Point score = 100 - TnML/TRL*20

For an 88, TnML/TRL = (100 - 88)/20 = 0.60

For an 86, TnML/TRL = (100 - 86)/20 = 0.70

0.70 / 0.60 = 1.17, or the 86 home uses 17% more energy than the 88 home!

