

9th Edition Stretch Code Modeling Analysis

2550 sq.ft. 3 BR Single Family Home with Electric Heat Pump
Worcester, MA



HERS Index	
Target ⁵	60
Example Base	64
Example Stretch	52

Incremental Costs and Benefits to Meet Stretch Code

0% of Total Construction Cost⁴

	COSTS		BENEFITS	NET	
BUILDER	Adjustments + HERS Rater Fee		Rebates ¹	Cost Compared to Base Code	
	-\$2,260		+\$2,853	+\$593	
HOMEBUYER	Change to Downpayment ³	Change to Annual Mortgage Payment ³	Estimated Energy Cost Savings per Year ²	Year 1 Cash Flow	Year 2+ Cash Flow
	-\$59	-\$47	+\$659	+\$765	+\$706

1 – Incentives are determined using the Pay For Savings calculator. Savings compared to MA reference home.

PFS Incentive = \$0.50 * kWh savings + \$50 * MMBtu savings + \$4000 * 0.xx percent savings (single family home)

2 – Energy costs are based on \$0.25/kWh, \$1.21/therm, \$2.90/gal propane, \$2.88/gal oil. Savings are compared with Base Code home.

3 – 30-year mortgage assumes 10% down payment at 4% APR.

4 – NAHB New Contractor Built Median Cost Per Square Foot in North East US (2017) \$161.53



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Breakdown of Incremental Construction Costs to Meet Stretch Code

FEATURE	Base Code	Stretch Code	Construction Cost
HERS RATING	64	52	\$500
WINDOWS (U-VALUE/SHGC)	.30/.30	.27/.30	\$500
DHW	0.95 EF Tank Electric	3.24 EF Heat Pump DHW	\$660
HEATING	10 HSPF / 19 SEER Heat Pump	12 HSPF / 19 SEER Heat Pump	\$600
COOLING			
DUCT LEAKAGE TO OUTSIDE	4 CFM25 / 100 CFA	<i>No change required</i>	\$0
FOUNDATION	Unconditioned, uninsulated basement	<i>No change required</i>	\$0
FLOOR	R38 fiberglass Grade 1	<i>No change required</i>	\$0
WALLS	R21 fiberglass Grade 1	<i>No change required</i>	\$0
HIGH EFFICACY LIGHTING	100% LED	<i>No change required</i>	\$0
CEILING – FLAT	R-50 blown in cellulose	<i>No change required</i>	\$0
AIR INFILTRATION	3.0 ACH50	<i>No change required</i>	\$0
TOTAL			\$2,260

