

9th Edition Stretch Code Modeling Analysis

3800 sq. ft. 3 BR Single Family Electric Heat
Worcester, MA



2015 BASE CODE Three Compliance Options

HERS Index (ERI)

Base	57
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Energy Rating Index (HERS)

PASS

Cost Alternative

PASS

REScheck – UA Alternative

PASS



Electric Heat Pump

ERI compliance requires a HERS Index of max. 55 and a Certified HERS Rating

2015 STRETCH CODE HERS (ERI) Compliance Option

HERS Index (ERI)

Stretch	47
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Energy Rating Index (HERS)

PASS

Changes to meet STRETCH CODE

Changes to meet STRETCH CODE		Cost or (Savings)
Builder Costs	Estimated cost of adjustments + HERS Rater fee	\$2,003
	Utility rebates ¹	(\$4,793)
	Cost compared to BASE CODE	(\$2,790)
Homebuyer Costs	Estimated reduced energy cost per year ²	(\$1,144)
	Change to downpayment ³	(\$279)
	Change to annual mortgage payment ³	(\$144)
	Year 1 cash flow	(\$1,567)
	Year 2+ cash flow	(\$1,288)

1 - Incentives revised annually around July 1

2 - Energy costs are based on 21 cents/kWh / \$1.01/therm, savings are compared with BASE CODE home

3 - 30 Year Mortgage assumes 10% downpayment at 4% APR

March 2016

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BASELINE FEATURES

FOUNDATION	<i>Unconditioned, uninsulated basement</i>
FLOOR	<i>R30 fiberglass Grade 1</i>
WALLS	<i>R21 fiberglass Grade 1</i>
WINDOWS (U-VALUE/SHGC)	<i>0.30/0.30</i>
CEILING – FLAT	<i>R-19 + R-30 fiberglass cross</i>
CEILING – SLOPED	<i>R-30 fiberglass Grade 2</i>
HEATING	<i>10 HSPF Heat Pump</i>
COOLING	<i>19 SEER Heat Pump</i>
DHW	<i>0.95 EF Tank Electric Resistance WH</i>
DUCT LEAKAGE TO OUTSIDE	<i>N/A Ductless</i>
AIR INFILTRATION	<i>3.0 ACH50</i>
LED/CFL LIGHTING	<i>75%</i>

2015 STRETCH CODE HERS (ERI)

HERS Index (ERI)

Base	57
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Adjusted Features

Construction Cost/(savings)

HERS Rating	\$1,350
Floor R30 Grade 2	(\$111)
Walls R21 Grade 2	(\$154)
11.3HSPF/19.1SEER Heat Pump	\$500
3.25 EF Heat Pump DHW	\$419
LED Lighting 100%	\$0
Total Cost	\$2,003

MassSave Incentive Breakdown

Incentive

RNC Program Tier II	\$1,250
Heat Pump – MassSave and MassCEC	\$2,593
Heat Pump Water Heater Incentive	\$750
RNC Program LED light bulbs ⁴	\$200
Total Incentive	\$4,793
Total Cost compared to BASE CODE	<u>(\$2,790)</u>