

9th Edition Stretch Code Modeling Analysis

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



2015 BASE CODE Three Compliance Options

HERS Index (ERI)

Base	58
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Energy Rating Index (HERS)

PASS

Cost Alternative

PASS

REScheck – UA Alternative

PASS



Natural Gas Heat ERI compliance requires a HERS Index of 55 and a Certified HERS Rating

2015 STRETCH CODE HERS (ERI) Compliance Option

HERS Index (ERI)

Stretch	50
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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	\$3,170
	Utility rebates ¹	(\$2,350)
	Cost compared to BASE CODE	\$820
Homebuyer Costs	Estimated energy cost change per year ²	(\$266)
	Change to downpayment ³	\$82
	Change to annual mortgage payment ³	\$42
	Year 1 cash flow	(\$142)
	Year 2+ cash flow	(\$224)

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>92% Furnace x2</i>
COOLING	<i>13 SEER x2</i>
DHW	<i>0.62 EF 50 gallon tank</i>
DUCT LEAKAGE TO OUTSIDE	<i>4%</i>
AIR INFILTRATION	<i>3.0 ACH50</i>
HIGH EFFICACY LIGHTING	<i>75%</i>

2015 STRETCH CODE HERS (ERI)

HERS Index (ERI)		Adjusted Features	Construction Cost/(savings)
Base	58		
Stretch	50	HERS Rating	\$1,350
		95% Furnace x2	\$1,278
		0.95 Tankless DHW	\$92
		2.5 ACH50	\$450 (4 hrs oversight by HERS rater)
		100% LED lighting	\$0
		Total Cost	\$3,170

Incentive Breakdown	Incentive
MassSave RNC Program Tier I	\$750
Furnaces ≥95% AFUE	\$300x2=\$600
On-Demand, Tankless Water Heater with an Energy Factor ≥0.94 and electronic ignition	\$800
MassSave RNC Program LED light bulbs ⁴	\$200
Total Incentive	\$2,350
Total Cost compared to BASE CODE	<u>(\$820)</u>