TOWN OF NEEDHAM MA ENERGY CODE COMPLIANCE FORM

Applicant Name: _____ Site Address: _____

print

Needham, MA

Applicant Phone: _____

Applicant Signature: _____ Date of Application: _____

NEW CONSTRUCTION , ADDITIONS & ALTERATIONS:
(check ONE of the following two options)

PRESCRIPTIVE ENVELOPE COMPONENT CRITERIA FOR NEW ONE-AND TWO-FAMILY BUILDINGS

	MAXIMUM	MINIMUM						
☐ Option 1	Fenestration U-factor Doors & Windows	Sky Lights U-Factor	Ceiling R-Value	Floor R Value	Above grade Wall R-Value	Floor R-Value	Basement Wall R-Value	Slab Perimeter R-Value and Depth

☐ Option 2:

√ REScheck Version 4.6.1 or later variant software analysis must be completed

√ RES*check* – Web which can be accessed at http://www.energycodes.gov/rescheck/

CHECK IF SUNROOM

SUNROOMS

Complete the following formula to determine the % of glazing:

(a) Gross Wall & Ceiling/Roof Area equals _____SF

(b) Glazing area equals _____SF

Formula: (100 x b ÷ a)

100 x _____ ÷ _____ = _____ % of glazing
b *a*

☐ SUNROOM – An addition or alteration to an existing building/dwelling unit where the total glazing area of said addition exceeds 40% of the combined gross wall and ceiling area of the addition.

Ceiling R-Value	Wall R-Value	Window U-Factor

CLIMATE ZONE	FENESTRATION *U*-FACTOR[b]	SKYLIGHT[b] *U*-FACTOR	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	FLOOR *R*-VALUE	BASEMENT[c] WALL *R*-VALUE	SLAB[d] *R*-VALUE & DEPTH	CRAWL SPACE[c] WALL *R*-VALUE
1	NR	0.75	30	13	13	0	0	0
2	0.40	0.65	38	13	13	0	0	0
3	0.35	0.55	38	20 or 13+5[h]	19	5/13[f]	0	5/13
4 except Marine	0.35	0.55	49	20 or 13+5[h]	19	10 /13	10, 2 ft	10/13
5 and Marine 4	0.30	0.55	49	20 or 13+5[h]	30[g]	15/19	10, 2 ft	15/19
6	0.32	0.55	49	20+5 or 13+10[h]	30[g]	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	49	20+5 or 13+10[h]	38[g]	15/19	10, 4 ft	15/19

Table R402.1.1

Table R402.4.1.1

COMPONENT	CRITERIA[a]
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be sealed.
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.
Rim joists	Rim joists shall be insulated and include the air barrier.
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls. Fireplaces shall have gasketed doors.