TABLE N1101.1(2) - ADDITIONAL MEASURES		
	mande is cross differented	HIGH-EFFICIENCY HVAC SYSTEM <sup>a</sup>
	1	a. Gas-fired furnace or boiler AFUE 94 percent, or
		b. Air-source heat pump HSPF 10.0/14.0 SEER cooling, or
		c. Ground-source heat pump COP 3.5 or Energy Star rated
	2	HIGH-EFFICIENCY WATER HEATING SYSTEM
		a. Natural gas/propane water heater with minimum UEF 0.90, or
		b. Electric heat pump water heater with minimum 2.0 COP, or
		c. Natural gas/propane tankless/instantaneous heater with minimum 0.80 UEF and
		Drain Water Heat Recovery Unit installed on minimum of one shower/tub-shower
	3	WALL INSULATION UPGRADE
	J	Exterior walls—U-0.045/R-21 conventional framing with R-5.0 continuous insulation
		ADVANCED ENVELOPE
	4	Windows—U-0.21 (Area weighted average), and
		Flat ceiling <sup>b</sup> —U-0.017/R-60, and
		Framed floors—U-0.026/R-38 or slab edge insulation to F-0.48 or less (R-10 for 48"; R-15 for 36" or R-5 fully
		insulated slab)
		DUCTLESS HEAT PUMP
П	5	For dwelling units with all-electric heat, provide:
L]		Ductless heat pump of minimum HSPF 10 in primary zone replaces zonal electric heat sources, and
		programmable thermostat for all heaters in bedrooms
	6	HIGH EFFICIENCY THERMAL ENVELOPE UA®
		Proposed UA is 8 percent lower than the code UA
	7	GLAZING AREA
		Glazing area, measured as the total of framed openings is less than 12 percent of conditioned floor area
	8	3 ACH AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION
		Achieve a maximum of 3.0 ACH50 whole-house air leakage when third-party tested and provide a whole-house ventilation system including heat recovery with a minimum sensible heat recovery efficiency of not less than 66 percent.

For SI: 1 square foot =  $0.093 \text{ m}^2$ , 1 watt per square foot =  $10.8 \text{ W/m}^2$ .

- a. Appliances located within the building thermal envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the outdoors.
- b. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless vaulted area has a U-factor no greater than U-0.026.
- c. In accordance with Table N1104.1(1), the Proposed UA total of the Proposed Alternative Design shall be a minimum of 8 percent less than the Code UA total of the Standard Base Casc.

•	TABLE N1101.3 - SMALL-ADDITION ADDITIONAL MEASURES (SELECT ONE)
1	Increase the ceiling insulation of the existing portion of the home as specified in Table N1101.2.
2	Replace all existing single-pane wood or aluminum windows to the U-factor as specified in Table N1101.2
3	Insulate the existing floor, crawl space, or basement wall systems as specified in Table N1101.2 and install 100 percent of permanently installed lighting fixtures as CFL, LED, or linear fluorescent, or a minimum efficacy of 40 lumens per watt as specified in Section N1107.2.
4	Test the entire dwelling with a blower door and exhibit no more than 4.5 air changes per hour @ 50 Pascals.
5	Seal and performance test the duct system.
6	Replace existing 80-percent AFUE or less gas furnace with a 92-percent AFUE or greater system.
7	Replace existing electric radiant space heaters with a ductless mini split system with a minimum HSPF of 10.0.
8	Replace existing electric forced air furnace with an air source heat pump with a minimum HSPF of 9.5.
9	Replace existing water heater with a water heater meeting:  Natural gas/propane water heater with minimum UEF 0.90, or  Electric heat pump water heater with minimum 2.0 COP.

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