Part II: The revisions in Item 1 should not raise the cost of construction because the proposed revisions are consistent with the intent of Item 1. In Item 2, if exterior wall components to the exterior of a vented air space have been considered mass walls in conflict with the intent of Item 1, there could be a cost increase.

CE63-19: Tables C402.1.3 and C402.1.4 were cut off in the Committee Action Hearing Agenda

CE63-19

Proponent: William Fay, Energy-Efficient Codes Coalition, representing Energy-Efficient Codes Coalition (bfay@ase.org); Harry Misuriello, American Council for an Energy-Efficient Economy, representing American Council for an Energy-Efficient Economy (misuriello@verizon.net)

Revise as follows:

(Portions of table not shown remain unchanged)

TABLE C402.1.3
OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD[a, i]

	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
CLIMATE ZONE	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**
Walls, above grade																
Mass[g]	R-5.7ci[c]	R-5.7ci[c]	R-5.7ci[c]	R-7.6ci	R-7.6ci	R-9.5ci	R-9.5ci	R-11.4ci	R-11.4ci	R-13.3ci	R-13.3ci	R-15.2ci	R-15.2ci	R-15.2ci	R-25ci	R-25ci
Metal building	R-13+ R-6.5ci	R-13 + R-6.5ci	R13 + R-6.5ci	R-13 + R-13ci	R-13 + R-6.5ci	R-13 + R-13ci	R-13 + R-13ci	~~R-13 + R-13ci~~ R-13 + R-14ci	~~R-13 + R-13ci~~ R-13 + R-14ci	~~R-13 + R-13ci~~ R-13 + R-14ci	~~R-13 + R-13ci~~ R-13 + R-14ci	~~R-13 + R-13ci~~ R-13 + R-14ci	~~R-13 + R-13ci~~ R-13 + R-17ci	R-13+ R-19.5ci	~~R-13 + R-13ci~~ R-13 + R-19.5ci	R-13+ R-19.5ci
Metal framed	R-13 + R-5ci	R-13 + R-5ci	R-13 + R-5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	~~R-13 + R-7.5ci~~ R-13 + R-10ci	~~R-13 + R-7.5ci~~ R-13 + R-10ci	~~R-13 + R-7.5ci~~ R-13 + R-12.5ci	~~R-13 + R-7.5ci~~ R-13 + R-12.5ci	~~R-13 + R-7.5ci~~ R-13 + R-12.5ci	R-13 + R-15.6ci	~~R-13 + R-7.5ci~~ R-13 + R-18.8ci	~~R-13+ R17.5ci~~ R-13 + R-18.8ci
Wood framed and other	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	R-13 + R-3.8ci or R-20	~~R-13 + R-3.8ci or R-20~~ R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci	~~R13 + R-15.6ci or R-20 + R-10ci~~ R-13 + R-18.8ci	~~R13 + R-15.6ci or R-20 + R-10ci~~ R-13 + R-18.8ci

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 4.88 kg/m^2, 1 pound per cubic foot = 16 kg/m^3.
ci = Continuous insulation, NR = No Requirement, LS = Liner System.

a. Assembly descriptions can be found in ANSI/ASHRAE/IESNA Appendix A.
b. Where using *R*-value compliance method, a thermal spacer block shall be provided, otherwise use the *U*-factor compliance method in Table C402.1.4.
c. R-5.7ci is allowed to be substituted with concrete block walls complying with ASTM C90, ungrouted or partially grouted at 32 inches or less on center vertically and 48 inches or less on center horizontally, with ungrouted cores filled with materials having a maximum thermal conductivity of 0.44 Btu-in/h-f^2 °F.
d. Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for heated slabs.
e. "Mass floors" shall be in accordance with Section C402.2.3.
f. Steel floor joist systems shall be insulated to R-38.
g. "Mass walls" shall be in accordance with Section C402.2.2.
h. The first value is for perimeter insulation and the second value is for slab insulation. Perimeter insulation is not required to extend below the bottom of the slab.
i. Not applicable to garage doors. See Table C402.1.4.

Revise as follows:

(Portions of table not shown remain unchanged)

TABLE C402.1.4
OPAQUE THERMAL ENVELOPE ASSEMBLY MAXIMUM REQUIREMENTS, *U*-FACTOR METHOD[a, b]

	1		**2**		**3**		**4 EXCEPT MARINE**		**5 AND MARINE 4**		**6**		**7**		**8**	
CLIMATE ZONE	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**	**All other**	**Group R**
Walls, above grade																
Mass[g]	U-0.151	U-0.151	U-0.151	U-0.123	U-0.123	U-0.104	U-0.104	U-0.090	U-0.090	U-0.080	U-0.080	U-0.071	U-0.071	U-0.071	~~U-0.061~~ U-0.037	~~U-0.061~~ U-0.037
Metal building	U-0.079	U-0.079	U-0.079	U-0.079	U-0.079	U-0.052	U-0.052	~~U-0.052~~ U-0.050	~~U-0.052~~ U-0.050	~~U-0.052~~ U-0.050	U-0.052 U-0.050	~~U-0.052~~ U-0.050	~~U-0.052~~ U-0.044	U-0.039	~~U-0.052~~ U-0.039	U-0.039
Metal framed	U-0.077	U-0.077	U-0.077	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	~~U-0.064~~ U-0.055	~~U-0.064~~ U-0.055	~~U-0.064~~ U-0.049	~~U-0.064~~ U-0.049	~~U-0.064~~ U-0.049	~~U-0.052~~ U-0.042	~~U-0.064~~ U-0.037	~~U-0.045~~ U-0.037
Wood framed and other[c]	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	~~U-0.064~~	~~U-0.064~~	U-0.051	U-0.051	U-0.051	U-0.051	~~U-0.036~~	~~U-0.036~~

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
									U-0.051	U-0.051					U-0.032	U-0.032

For SI: 1 pound per square foot = 4.88 kg/m^2, 1 pound per cubic foot = 16 kg/m^3.
ci = Continuous insulation, NR = No Requirement, LS = Liner System.

a. Where assembly *U*-factors, *C*-factors, and *F*-factors are established in ANSI/ASHRAE/IESNA 90.1 Appendix A, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table, and provided that the construction, excluding the cladding system on walls, complies with the appropriate construction details from ANSI/ASHRAE/ISNEA 90.1 Appendix A.
b. Where *U*-factors have been established by testing in accordance with ASTM C1363, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table. The *R*-value of continuous insulation shall be permitted to be added to or subtracted from the original tested design.
c. Where heated slabs are below grade, below-grade walls shall comply with the *U*-factor requirements for above-grade mass walls.
d. "Mass floors" shall be in accordance with Section C402.2.3.
e. These *C*-, *F*- and *U*-factors are based on assemblies that are not required to contain insulation.
f. The first value is for perimeter insulation and the second value is for full slab insulation.
g. "Mass walls" shall be in accordance with Section C402.2.2.

CE64-19: Tables C402.1.3 and C402.1.4 were cut off in the Committee Action Hearing Agenda

CE64-19

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