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Envelope Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title: Cannery Trail Residences
Project Type: New Construction

Construction Site:	Owner/Agent:	Designer/Contractor:
1750 N Oxford Ave Eau Claire, Wisconsin		
Building Location (for weather data):	Eau Claire, Wisconsin	
Climate Zone:	6a	
Vertical Glazing / Wall Area Pct.:	**25%**	

Building Use: Activity Type(s)	**Floor Area**
1-3 FLOORS BUILDING (Multifamily) : Nonresidential	61857

does it call for just SF above ground, can't remember.

Section 2: Envelope Assemblies and Requirements Checklist

Envelope TBD: All building area types must be assigned to at least one envelope assembly

Envelope Assemblies:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
3 1/2" COMPOSITE SIDING/DECKING WALL: Wood-Framed, 16in. o.c.,	684	20.0	3.6	0.050	0.051
COMPOSITE SIDING/DECKING WALL: Wood-Framed, 16in. o.c.,	4226	20.0	3.6	0.050	0.051
1ST FLOOR WINDOWS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	1437	---	---	0.800	0.550
STOREFRONT WINDOWS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	341	---	---	0.800	0.550
1ST FLOOR DOORS - GLASS INSET: , Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	66	---	---	0.800	0.800
1ST FLOOR DOORS - TERRACE DOORS: , Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	407	---	---	0.800	0.800
GARAGE DOOR: Uninsulated Double-Layer Metal, Swinging,	128	---	---	0.600	0.700
COMPOSITE SIDING/DECKING WALL - 1hr: Wood-Framed, 16in. o.c.,	892	20.0	3.6	0.050	0.051
COMPOSITE SIDING/DECKING WALL - COURTYARD: Wood-Framed, 16in. o.c.,	247	20.0	3.6	0.050	0.051
EXT WALL - C8AØF - (10" CONCRETE + 2" EPS INSUL): Solid Concrete, 10in. Thickness,Normal Density , Furring: None,	6642	---	10.0	0.084	0.080
EXT WALL - C8AØF - WITH STUCCO: Solid Concrete, 10in. Thickness,Normal Density , Furring: None,	995	---	10.0	0.084	0.080
EXT WALL - M8AØF - (10" CMU + 2" EPS INSUL): Concrete Block, 10in., Solid Grouted,Normal Density , Furring: None,	852	---	10.0	0.082	0.080
EXT WALL - FIBER CEMENT - LARGE: Wood-Framed, 16in. o.c.,	9376	20.0	3.6	0.050	0.051
2ND FLOOR WINDOWS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	1971	---	---	0.800	0.550
2ND FLOOR DOORS - TERRACE DOORS: , Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	274	---	---	0.800	0.800
2ND FLOOR HVAC PANELS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	660	---	---	0.800	0.550
EXT WALL - FIBER CEMENT - LARGE - 1hr: Wood-Framed, 16in. o.c.,	824	20.0	3.6	0.050	0.051

this is 3" of rigid insulation over CMU - eps is 5R/in ... so 15R. This is just the insulation, the other materials in the assembly add more, but not much. We might, however, have to add these negligible values if we don't pass. this wall and others...hopefully we don't have do do this.

we might have to change these defaults if we don't pass.. some of the windows we're looking to use, have a better u value than this default.

i think this garage door will be insulated. Go with the deafault U-value?

this can be 15r, i think.. it will be eifs instead of stucco

will be 20 and 3.6 because this panel is essentially this wall.

The actually louver of the hvac unit should probably be counted as less of u-value but not sure how to do that.
can you take a look?.. this is what we're using..
\CTR\Products\D30 Heating\D3020 Heating Systems\Magic-pak\Used in Project

EXT WALL - FIBER CEMENT - SMALL: Wood-Framed, 16in. o.c.,	5324	20.0	3.6	0.050	0.051
3RD FLOOR WINDOWS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	1725	---	---	0.800	0.550
3RD FLOOR DOORS - TERRACE DOORS: , Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	299	---	---	0.800	0.800
3RD FLOOR HVAC PANELS: Metal Frame, Perf. Type: Energy code default, Double Pane, Clear , SHGC 0.70,	660	---	---	0.800	0.550
EXT WALL - FIBER CEMENT - SMALL - 1hr: Wood-Framed, 16in. o.c.,	475	20.0	3.6	0.050	0.051
POLYCARBONATE WALL - 2ND: Other Steel Framed Wall, (b)	117	---	---	0.188	0.064
POLYCARBONATE WALL - 3RD: Other Steel Framed Wall, (b)	1120	---	---	0.188	0.064
6" CONCRETE SLAB ON GRADE: Unheated Slab-On-Grade, Horizontal with vertical 1 ft.,	675	---	11.0	---	---
COMPOSITE CEIING OVER EXTERIOR: Wood-Framed,	1979	20.0	3.6	0.041	0.033
12" CONCRETE SLAB BASEMENT/GARDEN W/ 6" POLYURETHANE: Insulation Entirely Above Deck,	8320	---	45.0	0.022	0.048
WOOD-FRAMED ROOF ABOVE 3RD FLOOR: Insulation Entirely Above Deck,	20572	---	25.0	0.039	0.048
WOOD-FRAMED ROOF ABOVE CORRIDORS (USG - L521): Attic Roof, Wood Joists,	2021	0.0	0.0	0.613	0.027

the slab will not have an r-value. in the program do they differentiate a slab that is below grade verses one that is buried a floor down?

will be about r-30, since it the 24" depth of the truss

we can actually use r-50 here as well because the entire cavity of the truss will be filled with batt

this will be r-25 cont. rigid insulation, but not batt because no cavity.

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

(b) 'Other' components require supporting documentation for proposed U-factors.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

- ❑ 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
- ❑ 2. Windows, doors, and skylights certified as meeting leakage requirements.
- ❑ 3. Component R-values & U-factors labeled as certified.
- ❑ 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- ❑ 5. 'Other' components have supporting documentation for proposed U-Factors.
- ❑ 6. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
- ❑ 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
- ❑ 8. Cargo doors and loading dock doors are weather sealed.
- ❑ 9. Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.
- ❑ 10. Building entrance doors have a vestibule equipped with self-closing devices.

Exceptions:

- ❑ Building entrances with revolving doors.
- ❑ Doors not intended to be used as a building entrance.
- ❑ Doors that open directly from a space less than 3000 sq. ft. in area.
- ❑ Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
- ❑ Doors opening directly from a sleeping/dwelling unit.