



Envelope Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Basecamp Row Townhome 1
Location: Steamboat Springs, Colorado
Climate Zone: 7
Project Type: New Construction
Vertical Glazing / Wall Area: 29%

Construction Site:
1901 Curve Plaza
Steamboat Springs, Colorado 80487

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Air Infiltration, 1.0 credit

Building Area

Floor Area

1-Multifamily : Residential

17550

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Roof: Attic Roof, Wood Joists, [Bldg. Use 1 - Multifamily]	3295	45.0	0.0	0.023	0.021
Roof: Attic Roof, Wood Joists, [Bldg. Use 1 - Multifamily]	1558	30.0	15.0	0.022	0.021
Floor: Slab-On-Grade:Unheated, Vertical 2 ft., [Bldg. Use 1 - Multifamily] (c)	337	---	10.0	0.540	0.520
NORTH					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	2050	20.0	8.0	0.041	0.051
Window: Vinyl Frame: Fixed, Perf. Specs.: Product ID PEL-N-209000161-00003, SHGC 0.31, [Bldg. Use 1 - Multifamily] (b)	601	---	---	0.260	0.290
Window: Vinyl Frame: Operable, Perf. Specs.: Product ID PEL-N-239-00005-00007, SHGC 0.25, [Bldg. Use 1 - Multifamily] (b)	342	---	---	0.260	0.370
Door: Glass (over 50 9.56976e-315lazing): Metal Frame, Non-Entrance Door, Perf. Type: Energy code default, Single Pane, Clear , SHGC 0.80, [Bldg. Use 1 - Multifamily]	260	---	---	1.200	0.370
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Multifamily]	139	---	---	0.360	0.370
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	1651	20.0	0.0	0.064	0.051
EAST					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	1080	20.0	8.0	0.041	0.051
Window: Vinyl Frame: Fixed, Perf. Specs.: Product ID PEL-N-209000161-00003, SHGC 0.31, [Bldg. Use 1 - Multifamily] (b)	75	---	---	0.260	0.290
Window: Vinyl Frame: Operable, Perf. Specs.: Product ID temp, SHGC 0.25, [Bldg. Use 1 - Multifamily] (b)	68	---	---	0.260	0.370
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	317	20.0	0.0	0.064	0.051
SOUTH					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	2338	20.0	8.0	0.041	0.051
Window: Vinyl Frame: Fixed, Perf. Specs.: Product ID PEL-N-	346	---	---	0.260	0.290

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
209000161-00003, SHGC 0.31, [Bldg. Use 1 - Multifamily] (b)					
Window: Vinyl Frame: Operable, Perf. Specs.: Product ID PEL-N-239-00005-00007, SHGC 0.25, [Bldg. Use 1 - Multifamily] (b)	326	---	---	0.260	0.370
Door: Glass (over 50 9.56976e-315lazing): Nonmetal Frame, Entrance Door, Perf. Specs.: Product ID PEL-N-251-00005-00001, SHGC 0.28, [Bldg. Use 1 - Multifamily] (b)	138	---	---	0.300	0.770
Door: Glass (over 50 9.56976e-315lazing): Metal Frame, Non-Entrance Door, Perf. Specs.: Product ID Glass Garage Door, SHGC 0.25, [Bldg. Use 1 - Multifamily] (b)	591	---	---	0.260	0.370
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	1426	20.0	0.0	0.064	0.051
WEST					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	933	20.0	0.0	0.064	0.051
Window: Vinyl Frame: Operable, Perf. Specs.: Product ID PEL-N-209000161-00003, SHGC 0.31, [Bldg. Use 1 - Multifamily] (b)	143	---	---	0.260	0.370
Window: Vinyl Frame: Operable, Perf. Specs.: Product ID PEL-N-239-00005-00007, SHGC 0.25, [Bldg. Use 1 - Multifamily] (b)	98	---	---	0.260	0.370
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Multifamily]	548	20.0	0.0	0.064	0.051

- (a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 0.3% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Date



Inspection Checklist

Energy Code: 2018 IECC

Requirements: 40.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1] ¹	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.5 [PR16] ¹	Group R-2 dwelling units have separate electrical meters.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C406 [PR9] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C303.2 [FO4] ²	Slab edge insulation installed per manufacturer's instructions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.2.1 [FO6] ¹	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C105 [FO3] ²	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.2.4 [FO7] ²	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or >= 10 inches of soil.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. See the Envelope Assemblies table for values.

Additional Comments/Assumptions:

☐ 1 High Impact (Tier 1)
 ☒ 2 Medium Impact (Tier 2)
 ☐ 3 Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Complies?	Comments/Assumptions
C303.1.3 [FR12] ²	Fenestration products rated in accordance with NFRC.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.1.3 [FR13] ¹	Fenestration products are certified as to performance labels or certificates provided.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.3 [FR10] ¹	Vertical fenestration SHGC value.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.4.3, C402.4.3.4 [FR8] ¹	Installed vertical fenestration U-factor and SHGC consistent with label specifications and as reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.5.1.2.1 [FR19] ¹	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability ≤ 0.004 dfm/ft ² . Air barrier penetrations are sealed in an approved manner.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.5.2, C402.5.4 [FR18] ³	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.5.7 [FR17] ³	Vestibules are installed on all building entrances. Doors have self-closing devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Doors that open directly from a space ≥ 3000 ft ² .

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.5.5, C403.2.4.3 [ME3] ³	Stair and elevator shaft vents have motorized dampers that automatically close. Refernece section C403.7.7 for operational details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C403.7.7 [ME58] ³	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. Reference section language for operational details.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.6 [EL26] ²	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.7 [EL27] ²	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.8.2, C405.8.2.1 [EL28] ²	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.9 [EL29] ²	Total voltage drop across the combination of feeders and branch circuits $\leq 5\%$.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)
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Section # & Req.ID	Insulation Inspection	Complies?	Comments/Assumptions
C303.1 [IN3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is ≤ 3 in 12.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.2.1 [IN20] ¹	Insulation installed on a suspended ceiling having ceiling tiles is not being specified for roof/ceiling assemblies. Continuous insulation board installed in 2 or more layers with edge joints offset between layers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.1 [IN10] ²	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.2 [IN7] ¹	Above-grade wall insulation installed per manufacturer's instructions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C303.2.1 [IN14] ²	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C105 [IN6] ¹	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.2.3 [IN8] ²	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.2.6 [IN18] ³	Radiant panels and associated components, designed for heat transfer from the panel surfaces to the occupants or indoor space are insulated with a minimum of R-3.5.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C105 [IN2] ¹	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
C402.5.1.1 [IN1] ¹	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

☐ 1 High Impact (Tier 1)
 ☒ 2 Medium Impact (Tier 2)
 ☐ 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C402.5.6 [FI37] ¹	Weatherseals installed on all loading dock cargo door openings and provide direct contact along the top and sides of vehicles parked in the doorway.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C402.5.8 [FI26] ³	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C406.9 [FI56] ¹	Reduced air infiltration. Air infiltration verified by whole-building pressurization testing conducted in accordance with ASTM E779 or ASTM E1827 by an independent third party. The measured air-leakage rate of the building envelope is ≤ 0.25 cfm/ft ² under a pressure differential of 0.3 inches water column, with the calculated surface area being the sum of the above- and below-grade building envelope. Comprehensive report documentation will be submitted to the code official and the building owner.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
C408.1.1 [FI57] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

☐ 1 High Impact (Tier 1)
 ☒ 2 Medium Impact (Tier 2)
 ☐ 3 Low Impact (Tier 3)

