



COMcheck Software Version COMcheckWeb

Envelope Compliance Certificate

Project Information

Energy Code: 2015 IECC
Project Title: CMG Cameron NC
Location: Cameron, North Carolina
Climate Zone: 3a
Project Type: New Construction
Vertical Glazing / Wall Area: 25%

Construction Site:
NC 24-87
Cameron, North Carolina 28326

Owner/Agent:
Chris Neil
Primax Properties, LLC
1100 E. Morehead Street
Charlotte, North Carolina 28204
704-954-7216
cneil@primaxproperties.com

Designer/Contractor:
Bryan Tanguay
Wilkus Architects
15 Ninth Ave N
Hopkins, Minnesota 55343
952-658-7855
bmt@wilkusarch.com

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
High Performance SWH, 1.0 credit

Building Area

Floor Area

1-Dining: Cafeteria/Fast Food : Nonresidential

2325

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Roof: Insulation Entirely Above Deck, 3-Year-Aged Solar Reflectance = 91.00, Thermal Emittance = 0.89 (d), [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	2290	---	30.0	0.032	0.039
Floor: Unheated Slab-On-Grade, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (c)	200	---	---	0.730	0.730
<u>NORTH</u>					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	1014	20.0	0.0	0.064	0.064
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	57	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	104	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	104	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	89	---	---	0.370	0.460
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Perf. Specs.: Product ID Kawneer 500T, SHGC 0.16, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	21	---	---	0.480	0.770
<u>EAST</u>					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	579	20.0	0.0	0.064	0.064

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Cafeteria/Fast Food]					
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	103	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	103	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	23	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, PF 0.49, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	33	---	---	0.370	0.460
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Perf. Specs.: Product ID Kawneer 500T, SHGC 0.16, PF 0.49, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	42	---	---	0.480	0.770
SOUTH					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	966	20.0	0.0	0.064	0.064
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, PF 0.50, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	43	---	---	0.370	0.460
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID Trifab VG 451T, SHGC 0.24, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	47	---	---	0.370	0.460
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Perf. Specs.: Product ID Kawneer 500T, SHGC 0.16, [Bldg. Use 1 - Dining: Cafeteria/Fast Food] (b)	21	---	---	0.480	0.770
WEST					
Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	585	20.0	0.0	0.064	0.064
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Dining: Cafeteria/Fast Food]	35	---	---	0.370	0.610

(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.

(d) High albedo roof requirement options: 1) 3-year aged solar reflectance ≥ 0.55 thermal emittance ≥ 0.75 , 2) 3-year aged solar reflectance index ≥ 64.0 , 3) Initial year aged solar reflectance ≥ 0.70 thermal emittance ≥ 0.75 , 4) Initial year aged solar reflectance index ≥ 82.0 .

Envelope PASSES: Design 14% 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 2015 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Date



Inspection Checklist

Energy Code: 2015 IECC

Requirements: 100.0% 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.
C402.4.1 [PR10] ¹	The vertical fenestration area <= 30 percent of the gross above-grade wall area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.1 [PR11] ¹	The skylight area <= 3 percent of the gross roof area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.4.2 [PR14] ¹	In enclosed spaces > 2,500 ft ² directly under a roof with ceiling heights >15 ft. and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/sorting area, transportation, or workshop, the following requirements apply: (a) the daylight zone under skylights is >= half the floor area; (b) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40; or a minimum skylight effective aperture >= 1 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
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:

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

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.
C104 [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.
C402.2.6 [FO12] ³	Radiant heating systems panels insulated to $\geq R-3.5$ on face opposite space being heated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply. 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	Vertical fenestration U-Factor.	<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.
C402.4.4 [FR14] ²	U-factor of opaque doors associated with the building thermal envelope meets requirements.	<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 [FR16] ¹	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or tested in an approved manner. 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	Exception: Field fabricated fenestration assemblies.
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.	<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	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.
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	Requirement will be met.
C402.2.1 [IN17] ³	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C104 [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.
C104 [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.
C402.3 [IN5] ³	High-albedo roofs satisfy one of the following: 3-year-aged solar reflectance ≥ 0.55 and thermal emittance ≥ 0.75 or 3-year-aged solar reflectance index ≥ 64.0 .	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C104 [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)
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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C402.5.3 [FI51] ³	Where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening are located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope. Such rooms are sealed and insulated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C402.5.6 [FI37] ¹	Weatherseals installed on all loading dock cargo doors.	<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	Exception: Requirement does not apply.
C406.7, C406.7.1 [FI53] ¹	Enhanced Service Water Heat System efficiency package. One of the following SWH system enhancements must satisfy 60 percent of hot water requirements, or 100 percent if the building otherwise complies with heat recovery per Section C403.4.5: Waste heat recovery (from SWH, process equipment, or combined heat and power system), OR solar water-heating.	<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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