

Project 12327

Energy Code: 2021 IECC

Location: San Antonio, Texas

Construction Type: Single-family
Project Type: New Construction

Project SubType: None
Conditioned Floor Area: 271 ft2
Glazing Area 23%

Climate Zone: **2 (1644 HDD)**

Permit Date: Permit Number:

All Electric false
Is Renewable false
Has Charger false
Has Battery: false
Has Heat Pump: true

Construction Site: Owner/Agent:

San Antonio, TX

Designer/Contractor: Bobby Blough B&B System Design Vineland, NJ 08361

Compliance: Passes using UA trade-off

Compliance: 19.8% Better Than Code Maximum UA: 106 Your UA: 85 Maximum SHGC: 0.25 Your SHGC: 0.25

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules. It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling 1: Flat Ceiling or Scissor Truss	271	28.0	0.0	0.037	0.026	10	7
Wall 1: Wood Frame, 16" o.c.	140	19.0	0.0	0.060	0.084	7	9
Window 1: 2 glazing, clr low-e outr, argon gas, insulated vinyl frm mat, clr SHGC: 0.25	28			0.300	0.400	8	11
Wall 2: Wood Frame, 16" o.c.	158	19.0	0.0	0.060	0.084	8	11
Window 1: 2 glazing, clr low-e outr, argon gas, insulated vinyl frm mat, clr SHGC: 0.25	28			0.300	0.400	8	11
Wall 3: Wood Frame, 16" o.c.	140	19.0	0.0	0.060	0.084	5	7
Window 1: 2 glazing, clr low-e outr, argon gas, insulated vinyl frm mat, clr SHGC: 0.25	56			0.300	0.400	17	22

Project Title: 12327 Report date: 12/29/24

Data filename: Page 1 of 10

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Wall 4: Wood Frame, 16" o.c.	158	19.0	0.0	0.060	0.084	7	9
Door 1: Solid	21			0.350	0.400	7	8
Window 1: 2 glazing, clr low-e outr, argon gas, insulated vinyl frm mat, clr SHGC: 0.25	28			0.300	0.400	8	11
Floor 1: Slab-On-Grade:Unheated Insulation depth: 7.8' Insulation position: No Insulation	66		0.0	0.730	0.730	0	0

Energy Credits

Description	Credits
Improved Air Sealing and Efficient Ventilation System Option - R408.2.5	1.0

Required: 1 Proposed: 1

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2021 IECC requirements in REScheck Version: REScheck—Web and to comply with the mandatory requirements listed in the REScheck Inspection Checklist.

Name - Title Signature Date

Project Title: 12327 Report date: 12/29/24

Data filename: Page 2 of 10

W

REScheck Software Version: REScheck-Web

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 97.0% were addressed directly in the REScheck software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck 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	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1] ¹	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope and energy compliance path represented on construction documents.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
103.1, 103.2, 403.8 [PR3] ¹	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
302.1, 403.7 [PR2] ²	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr Cooling: Btu/hr	Heating: Btu/hr Cooling: Btu/hr	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Additional Comments/Assumptions:



Project Title: 12327 Report date: 12/29/24
Data filename: Page 3 of 10

Section # & Req.ID	Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.2 [FO1] ¹	Slab edge insulation R-value.	R Unheated Heated	R Unheated Heated	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2, 402.2.10 [FO2] ¹	Slab edge insulation installed per manufacturer's instructions.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
402.1.2 [FO3] ¹	Slab edge insulation depth/length.	ft	ft	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2.1 [FO11] ²	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.9 [FO12] ²	Snow and ice-melting system controls installed to shut off system when pavement temperature > 50F and no precipitation.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.



Project Title: 12327

Data filename:

Report date: 12/29/24

Page 4 of10

Section		Plans Verified	Field Verified		
# & Req.ID	Framing / Rough-In Inspection	Value	Value	Complies?	Comments/Assumptions
402.1, 402.3.4 [FR1] ¹	Door U-factor.	U	U	□Complies □Does Not	See the Envelope Assemblies table for values.
(i)				□Not Observable □Not Applicable	
402.1, 402.3.1, 402.3.3, 402.5 [FR2] ¹	Glazing U-factor (area-weighted average).	U	U	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
②			I I I		
402.1, 402.3.2,	Glazing SHGC value (area- weighted average).	SHGC:	SHGC:	\square Complies \square Does Not	See the Envelope Assemblies table for values.
402.3.3, 402.5 [FR3] ¹				□Not Observable □Not Applicable	~ O`
303.1.3 [FR4] ¹	U-factors of fenestration products are determined in accordance with the NFRC test procedure or			□Complies □Does Not	Requirement will be met.
•	taken from the default table.			□Not Observable □Not Applicable	•
402.4.1.1 [FR23] ¹	Air barrier and thermal barrier installed per manufacturer's instructions.		<	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
402.4.3 [FR20] ¹	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.		C C	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.4.5 [FR16] ²	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm			□Complies □Does Not	Requirement will be met.
	leakage at 75 Pa.			☐Not Observable ☐Not Applicable	
403.3.1 [FR12] ¹	Supply and return ducts in attics insulated >= R-8 where duct is			☐Complies ☐Does Not	Requirement will be met.
•	>= 3 inches in diameter and >= R-6 where < 3 inches.			□Not Observable □Not Applicable	
403.3.4 [FR13] ¹	Ducts, air handlers and filter boxes are sealed with			☐Complies ☐Does Not	Requirement will be met.
•	joints/seams compliant with International Mechanical Code or International Residential Code, as applicable.			□Not Observable □Not Applicable	
403.3.7 [FR15] ³	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not	Requirement will be met.
(2)				□Not Observable □Not Applicable	

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

Project Title: 12327

Data filename:

Report date: 12/29/24

Page 5 of10

# Req.ID 403.3.2 Ducts declared to be within the conditioned space are either 1) completely within the toontinuous air barrier and within the building thermal envelope, 2) buried within ceiling insulation in accordance with Section R403.3.6 and the air handler is located completely within the continuous air barrier and within the building thermal envelope and the duct leakage is <= 1.5 cfm / 100 square feet of conditioned floor area served by the duct system, or 3) the ceiling insulation R-value installed against and above the insulated duct >= to the proposed ceiling insulation R-value jess the R-value of the insulation on the 403.4 [FR17]² ■ HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3. 403.4.1 Protection of insulation on HVAC piping. ■ Protection of insulation on HVAC piping. ■ Exception: Requirem not applicable. ■ Not Observable Not Ob	
Completely within the continuous air barrier and within the building thermal envelope, 2) buried within ceiling insulation in accordance with Section R403.3.6 and the air handler is located completely within the continuous air barrier and within the building thermal envelope and the duct leakage is <= 1.5 cfm / 100 square feet of conditioned floor area served by the duct system, or 3) the ceiling insulation in R-value installed against and above the insulated duct >= to the proposed ceiling insulation R-value, less the R-value of the insulation on the	met.
air barrier and within the building thermal envelope, 2) buried within ceiling insulation in accordance with Section R403.3.6 and the air handler is located completely within the continuous air barrier and within the building thermal envelope and the duct leakage is <= 1.5 cfm / 100 square feet of conditioned floor area served by the duct system, or 3) the ceiling insulation R-value installed against and above the insulated duct >= to the proposed ceiling insulation R-value, less the R-value of the insulation on the 403.4 HVAC piping conveying fluids above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3. 403.4.1 Protection of insulation on HVAC piping. Protection of insulation on HVAC piping. Exception: Requiren not applicable. Complies Exception: Requiren not applicable. Does Not Does Not Does Not Poping. Exception: Requiren not applicable.	
FR17 2 above 105 °F or chilled fluids below 55 °F are insulated to ≥R-3.	•
[FR24]¹ piping. □Does Not not applicable. □Not Observable	nent is
	nent is
402.4.6 [FR29]³ Electrical and communication boxes installed in the thermal boundary of the envelope sealed to limit air leakage between conditioned and unconditioned spaces. □ Complies □ Complies □ Does Not □ Does Not □ Not Observable □ Not Applicable	net.
403.5.2 Hot water pipes are insulated to $[FR18]^2$ $\geq R-3$. Hot water pipes are insulated to $R \square$ \square Complies \square \square Does Not \square not applicable. Not Observable \square Not Applicable	nent is
403.6 [FR19] ² Installed on all outdoor air intakes and exhausts for mechanical ventilation systems. Automatic or gravity dampers are installed on all outdoor air intakes and exhausts for mechanical ventilation systems. Complies Requirement will be represented by the property of the	net.
403.6.1 Ventilation systems in climate zones 7 & 8 shall utilize heat or energy recovery ☐ Not Observable ☐ Not Applicable ☐ Not Applicable	net.

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

Project Title: 12327

Data filename:

Report date: 12/29/24

Page 6 of10

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13] ²	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.1, 402.2.5, 402.2.6 [IN3] ¹	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R Wood Mass Steel	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.2 [IN4] ¹	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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

Project Title: 12327

Data filename:

Report date: 12/29/24

Page 7 of10

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1, 402.2.1, 402.2.2, 402.2.6 [FI1] ¹	Ceiling insulation R-value.	R Wood Steel	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
303.1.1.1, 303.2 [FI2] ¹	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft ² .			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
402.2.3 [FI22] ²	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.2.4 [FI3] ¹	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R	R	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
402.4.1.3 [FI17] ¹	Blower door test @ 50 Pa. <=5.0 ach in Climate Zones 1-2, and <=3.0 ach in Climate Zones 3-8.	ACH 50 =	ACH 50 =	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.3.5 [FI27] ¹	Ducts are pressure tested in accordance with ANEI/RESNET/ICC 380 or ASTME1554 to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	cfm/100	cfm/100 ft ²	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.3.6 [FI4] ¹	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. Duct tightness <= 8 cfm/100 ft2 for ducts within thermal envelope. For rough-in tests, verification may need to occur during Framing Inspection.	cfm/100 ft ²	cfm/100 ft ²	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.3.4.1 [FI24] ¹	Air handler leakage designated by manufacturer at <=2% of design air flow.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.1.1 [FI9] ²	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
403.5.1 [FI11] ²	Circulating service hot water systems have automatic or accessible manual controls.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Low Impact (Ti	er 3)

Project Title: 12327 Report date: 12/29/24

Data filename:

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.2 [FI26] ²	Hot water boilers supplying heat through one- or two-pipe heating systems have automatic outdoor setback control to lower boiler water temperature based on outdoor temperature, indoor temperature or water temperature sensing.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
403.5.1.1 [Fi28] ²	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermossyphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
403.5.1.2 [FI29] ²	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.		Ċ	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
403.5.3 [FI31] ²	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
403.6.2 [FI25] ²	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits per Table R403.6.2.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Exception: Requirement is not applicable.
403.6.3 [FI33] ²	Mechanical ventilation systems tested and verified to meet the minimum flow rates required by Section R403.6.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Kitchen range hoods ducted to the outside with >= 6-inch duct and = 1 90 degree elbow.
403.5.1.1. 1 [FI32] ²	Demand recirculation water systems have automatic controls to start pump when hot water is requested.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
404.1 [FI6] ¹	100% of permanent fixtures have high efficacy lamps.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
404.1.2 [FI23] ³	Fuel gas lighting systems have no continuous pilot light.			□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement is not applicable.
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Low Impact (Ti	er 3)

Project Title: 12327 Report date: 12/29/24 Data filename:

Page 9 of 10

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
404.1.1 [FI35] ³	Exterior lighting for multifamily buildings shall comply with Section C405.4.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Exception: Detached one- and two- family dwellings.
404.2 [FI36] ³	Permanent interior lighting shall be controlled with either a dimmer, occupancy sensor or other control built into the fixture.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
404.3 [FI37] ³	Exterior lighting >= 30 watts shall have the following controls: manual on/off switch with automatic shut-off, automatic shut-off in daylight hours, and controls that override automatic shutoff that returns to automatic control within 24 hours.			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
401.3 [FI7] ²	Compliance certificate posted with building specifications and compliance path and results.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
303.3 [FI18] ³	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
408.2.5 [FI42] ³	Improved Air Sealing: Air leakage <= 3.0 ACH50 combined with an Energy Recovery Ventilator >= Latent Recovery /Moisture Transfer (LRMT) or Heat Recovery Ventilator with >= 75% Sensible Recovery Efficiency (SRE).			□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

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

Project Title: 12327

Data filename:

Report date: 12/29/24

Page 10 of10



Insulation Rating	R-Value	
Above-Grade Wall	19.00	
Below-Grade Wall	0.00	
Floor	0.00	
Ceiling / Roof	28.00	
Ductwork (unconditioned spaces):		

Glass & Door Rating	U-Factor	SHGC
Window	0.30	0.25
Door	0.35	

Heating & Cooling Equipment	Efficiency	
Heating System:		
Cooling System:		
Water Heater:		7

Name: Date:

Comments