

**COMcheck Software Version 4.1.1.0**

Envelope Compliance Certificate



Approved by City of Goodyear

07/01/21

21-2119 - VIP PRODUCTS

Project Information

Energy Code: 90.1 (2016) Standard
Project Title: VIP PRODUCTS
Location: Goodyear, Arizona
Climate Zone: 2b
Project Type: New Construction
Vertical Glazing / Wall Area: 3%
Performance Sim. Specs: EnergyPlus 8.1.0.009 (EPW: USA_AZ_Phoenix-Sky.Harbor.Intl.AP.722780_TMY3.epw)

Construction Site:
GOODYEAR, AZ

Owner/Agent:

Designer/Contractor:

Building Area**Floor Area**

1-Warehouse : Nonresidential

94452

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Roof 1: Attic Roof with Steel Joists, [Bldg. Use 1 - Warehouse]	94452	30.6	7.5	0.031	0.027
Skylight 1: Metal Frame:Plastic, With Curb, Perf. Specs.: Product ID N/A, SHGC 0.35, VT 0.70, [Bldg. Use 1 - Warehouse] (c)	1088	---	---	0.500	0.650
Floor 1: Slab-On-Grade:Unheated, [Bldg. Use 1 - Warehouse] (d)	1275	---	---	0.730	0.730
NORTH					
Exterior Wall 1: Solid Concrete:9" Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	14451	13.0	0.0	0.141	0.151
Window 1: Metal Frame:Fixed, Perf. Specs.: Product ID N/A, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	402	---	---	0.290	0.540
Door 1: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Specs.: Product ID N/A, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	48	---	---	0.290	0.830
Door 2: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	42	---	---	0.380	0.370
EAST					
Exterior Wall 3: Solid Concrete:9" Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	7037	13.0	0.0	0.141	0.151
Window 3: Metal Frame:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	220	---	---	0.290	0.540
Door 4: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	21	---	---	0.380	0.370
SOUTH					
Exterior Wall 4: Solid Concrete:9" Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	13278	13.0	0.0	0.141	0.151
Window 4: Metal Frame:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	402	---	---	0.290	0.540
Door 5: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Specs.: Product ID n/a, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	48	---	---	0.290	0.830
Door 6: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	147	---	---	0.380	0.370

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor ^(a)
Door 7: Other Door, Non-Swinging, [Bldg. Use 1 - Warehouse]	1854	---	---	0.120	0.310
WEST					
Exterior Wall 2: Solid Concrete:9" Thickness, Normal Density, Furring: Metal, [Bldg. Use 1 - Warehouse]	8559	13.0	0.0	0.141	0.151
Window 2: Metal Frame:Fixed, Perf. Specs.: Product ID n/a, SHGC 0.30, VT 0.49, [Bldg. Use 1 - Warehouse] (c)	220	---	---	0.290	0.540
Door 3: Insulated Metal, Swinging, [Bldg. Use 1 - Warehouse]	21	---	---	0.380	0.370

- (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.
(c) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(d) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 1% better than code

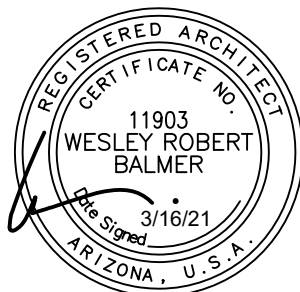
Envelope Compliance Statement

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 90.1 (2016) Standard requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title

Signature

Date



EXP 3/31/23



Inspection Checklist

Energy Code: 90.1 (2016) Standard

Requirements: 0.0% 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
4.2.2, 5.4.3.1.1, 5.7 [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	
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.5.4.2.3 [PR7] ²	In buildings > 2,500 ft ² , any enclosed spaces directly under a roof with ceiling heights > 15 ft. and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation baggage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.5.3.3 [FO1] ²	Below-grade wall insulation R-value.	R-_____	R-_____	<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.
5.5.3.5 [FO3] ²	Slab edge insulation R-value.	R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-_____ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<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.
5.8.1.2 [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	
5.5.3.5 [FO5] ²	Slab edge insulation depth/length.	_____ ft	_____ ft	<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.
5.8.1.7 [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	
5.8.1.7.3 [FO7] ¹	Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.4.1.5 [FO11] ³	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	R-_____	R-_____	<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.

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	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.3.2 [FR1] ³	Factory-built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.5.4.3a [FR8] ¹	Vertical fenestration U-Factor.	U-____	U-____	<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.
5.5.4.3b [FR9] ¹	Skylight fenestration U-Factor.	U-____	U-____	<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.
5.5.4.4.1 [FR10] ¹	Vertical fenestration SHGC value.	SHGC:____	SHGC:____	<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.
5.5.4.4.2 [FR11] ¹	Skylight SHGC value.	SHGC:____	SHGC:____	<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.
5.8.2.1, 5.8.2.3, 5.8.2.4, 5.8.2.5 [FR12] ²	Fenestration products rated (U-factor, SHGC, and VT) in accordance with NFRC or energy code defaults are used.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.2.2 [FR13] ¹	Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.5.3.6 [FR14] ²	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U-____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	U-____ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	<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.
5.4.3.1 [FR15] ¹	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces in climate zones 1-6.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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
8.4.2 [EL10] ²	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
8.4.3 [EL11] ²	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

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Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.5.3.1 [IN2] ¹	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	R-____ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	R-____ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	<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.
5.8.1.2, 5.8.1.3 [IN3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.5.3.2 [IN6] ¹	Above-grade wall insulation R-value.	R-____ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R-____ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<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.
5.8.1.2 [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	
5.5.3.4 [IN8] ²	Floor insulation R-value.	R-____ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R-____ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<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.
5.8.1.1 [IN10] ²	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing 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	
5.8.1.9 [IN18] ²	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.1.4 [IN11] ²	Eaves are baffled to deflect air to above the insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.1.5 [IN12] ²	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.1.6 [IN13] ²	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.1.7.1 [IN15] ²	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

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

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.7.2 [IN16] ²	Foundation vents do not interfere with insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
5.8.1.8 [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	

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
5.4.3.3 [FI1] ¹	Weatherseals installed on all loading dock cargo doors in Climate Zones 4-8.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

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