

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Addition

Calculation Date/Time: 09:30, Sat, Feb 17, 2018

Calculation Description: Title 24 Analysis

Input File Name: tmp530D.tmp.xml

GENERAL INFORMATION					
01	Project Name	Addition			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Silk Oak Ct.			
04	City	Rancho Cucamonga	05	Standards Version	Compliance 2017
06	Zip Code	91730	07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ10	09	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	180
12	Project Scope	Addition and/or Alteration		13	Number of Dwelling Units
14	Total Cond. Floor Area (ft ²)	1865	15	Number of Zones	2
16	Slab Area (ft ²)	1208	17	Number of Stories	1
18	Addition Cond. Floor Area (ft ²)	300	19	Natural Gas Available	Yes
20	Addition Slab Area (ft ²)	300	21	Glazing Percentage (%)	8.9%

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building DOES NOT require HERS Verification
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY				
04	05	06	07	08
Energy Use (kTDV/ft ² -yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	8.13	10.18	-2.05	-25.2%
Space Cooling	68.22	62.26	5.96	8.7%
IAQ Ventilation	0.00	0.00	0.00	0.0%
Water Heating	15.37	15.37	0.00	0.0%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	91.72	87.81	3.91	4.3%

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• New ductwork added is less than 40 ft. in length

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HERS FEATURE SUMMARY						
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.						
Building-level Verifications:						
• --None--						
Cooling System Verifications:						
• -- None --						
HVAC Distribution System Verifications:						
• -- None --						
Domestic Hot Water System Verifications:						
• -- None --						

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft ²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Sandhu Addition	1865	1	3	2	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft ²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
Existing Home	Conditioned	Existing Heating and Air1	1565	9	DHW Sys 1	n/a
First Floor Addition	Conditioned	Existing Heating and Air1	300	9	DHW Sys 1	n/a

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OPAQUE SURFACES									
01	02	03	04	05	06	07	08	09	10
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window & Door Area (ft ²)	Tilt (deg)	Status	Verified Existing Condition
Rear Wall: To Remain	Existing Home	R-13 Wall	0	Back	102.75	40	90	Existing	No
Right Wall: To Remain	Existing Home	R-13 Wall	90	Right	235.26	0	90	Existing	No
Left Wall: To Remain	Existing Home	R-13 Wall	270	Left	198	12	90	Existing	No
Front Wall: To Remain	Existing Home	R-13 Wall	180	Front	179.46	70	90	Existing	No
Rear Wall: To Remain 2	Existing Home	R-13 Wall	0	Back	225	14.66	90	Existing	No
Right Wall: To Remain 2	Existing Home	R-13 Wall	90	Right	225	22	90	Existing	No
Left Wall: To Remain 2	Existing Home	R-13 Wall	270	Left	225	25.98	90	Existing	No
Front Wall: To Remain 2	Existing Home	R-13 Wall	180	Front	225	31.32	90	Existing	No
Interior Surface to Addit	Existing Home>>First Floor Addition	R-13 Wall1			257.22	0		Existing	No
Roof	Existing Home	R-30 Roof Attic			251			Existing	No
Roof 2	Existing Home	R-30 Roof Attic			657			Existing	No
Left Wall	First Floor Addition	R-13 Wall	270	Left	94.5	0	90	New	n/a
Rear Wall	First Floor Addition	R-13 Wall	0	Back	257.22	58	90	New	n/a
Right Wall	First Floor Addition	R-13 Wall	90	Right	94.5	12	90	New	n/a
Roof 3	First Floor Addition	R-30 Roof Attic			300			New	n/a

ATTIC									
01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic Existing Home	Attic RoofExisting Home	Ventilated	4	0.1	0.85	No	No	Existing	No
Attic First Floor Addition	Attic RoofFirst Floor Addition	Ventilated	4	0.1	0.85	No	No	New	No

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FENESTRATION / GLAZING										
01	02	03	04	05	06	07	08	09	10	11
Name	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft ²)	U-factor	SHGC	Exterior Shading	Status	Verified Existing Condition
Window	Left Wall: To Remain (Left-270)	----	----	1	12.0	0.55	0.67	Insect Screen (default)	Existing	No
Window 2	Front Wall: To Remain (Front-180)	----	----	1	30.0	0.55	0.67	Insect Screen (default)	Existing	No
Window 3	Rear Wall: To Remain 2 (Back-0)	----	----	1	14.7	0.55	0.67	Insect Screen (default)	Existing	No
Window 4	Right Wall: To Remain 2 (Right-90)	----	----	1	22.0	0.55	0.67	Insect Screen (default)	Existing	No
Window 5	Left Wall: To Remain 2 (Left-270)	----	----	1	26.0	0.55	0.67	Insect Screen (default)	Existing	No
Window 6	Front Wall: To Remain 2 (Front-180)	----	----	1	31.3	0.55	0.67	Insect Screen (default)	Existing	No
Window 7	Rear Wall (Back-0)	----	----	1	18.0	0.32	0.25	Insect Screen (default)	New	n/a
Window 8	Right Wall (Right-90)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a

OPAQUE DOORS					
01	02	03	04	05	06
Name	Side of Building	Area (ft ²)	U-factor	Status	Verified Existing Condition
Door	Rear Wall: To Remain	40.0	0.60	Existing	No
Door 2	Front Wall: To Remain	40.0	0.60	Existing	No
Door 3	Rear Wall	40.0	0.60	New	No

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OPAQUE SURFACE CONSTRUCTIONS						
01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
Attic RoofExisting Home	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	<ul style="list-style-type: none"> Cavity / Frame: no insul. / 2x4 Top Chrd Roof Deck: Wood Siding/sheathing/decking Roofing: Light Roof (Asphalt Shingle)
R-13 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.101	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: 3 Coat Stucco
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 30	0.032	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Cavity / Frame: R-9.1 / 2x4 Over Ceiling Joists: R-20.9 insul.
R-13 Wall1	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.092	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board
Attic RoofFirst Floor Addition	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	<ul style="list-style-type: none"> Cavity / Frame: no insul. / 2x4 Top Chrd Roof Deck: Wood Siding/sheathing/decking Roofing: Light Roof (Asphalt Shingle)

SLAB FLOORS								
01	02	03	04	05	06	07	08	09
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value	Carpeted Fraction	Heated	Status	Verified Existing Condition
Slab-on-Grade	Existing Home	908	0.1	None	0.8	No	Existing	No
Slab-on-Grade 2	First Floor Addition	300	0.1	None	0.8	No	New	No

BUILDING ENVELOPE - HERS VERIFICATION			
01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS							
01	02	03	04	05	06	07	08
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)	Status	Verified Existing Condition
DHW Sys 1	DHW	Standard	DHW Heater 1	1	0	Existing	No

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WATER HEATERS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Storage	1	50	0.55 EF	50,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS							
01	02	03	04	05	06	07	08
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Status	Verified Existing Condition
Existing Heating and Air1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1	Existing	No

HVAC - HEATING UNIT TYPES			
01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace	1	80 AFUE

HVAC - COOLING UNIT TYPES							
01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency		Zonally Controlled	Compressor Type	HERS Verification
			EER	SEER			
Cooling Component 1	SplitAirCond	1	8.9	10	Not Zonal	Single Speed	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION					
01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Not Required	n/a	Not Required	Not Required	Not Required

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HVAC - DISTRIBUTION SYSTEMS									
01	02	03	04	05	06	07	08	09	10
Name	Type	Duct Leakage	Insulation R-value	Supply Duct Location	Return Duct Location	Bypass Duct	Status	Verified Existing Condition	HERS Verification
Air Distribution System 1	Ducts located in attic (Ventilated and Unventilated)	Existing (not specified)	6.0	Attic	Attic	None	Existing + New	No	n/a

IAQ (Indoor Air Quality) FANS				
01	02	03	04	05
Name	IAQ CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFam IAQVentRpt	0	Default	0	Not Required

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Saurabh Patel	Documentation Author Signature: <i>Saurabh Patel</i>
Company: SoCal Title 24	Signature Date: 2/17/2018
Address: 8659 Red Oak St #1	CEA/HERS Certification Identification (If applicable):
City/State/Zip: Rancho Cucamonga, Ca 91730	Phone: 909-257-7547
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 	
Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone: