

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: 1 Story Example

Calculation Date/Time: 11:47, Wed, May 07, 2014

Calculation Description: 1 Story Example Rev 12

Input File Name: Examp12.ribd

GENERAL INFORMATION					
01	Project Name	1 Story Example			
02	Calculation Description	2100 ft2 CEC Prototype with tile roof			
03	Project Location	1516 Ninth St			
04	A City	Sacramento, CA	05	Standards Version	Compliance 2015
06	Zip code	95814	07	Compliance Manager Version	BEMCmpMgr 2013-2 (590)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 6.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	90
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (FT²)	2100	15	Number of Zones	1
16	Slab Area (FT²)	2100	17	Number of Stories	1
18	Addition Cond. Floor Area	NA	19	Natural Gas Available	Yes
20	Addition Slab Area (FT²)	NA	21	Glazing Percentage (%)	20.0%

COMPLIANCE RESULTS					Detailed help on using the CF-1R Certificate of Compliance is available via the Internet by either scanning the QR code or browsing to http://www.title24energycode.org/t24help/cf1r.aspx
01	Building Complies with Computer Performance				
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.				
03	This building incorporates one or more Special Features shown below				
ENERGY USE SUMMARY					
04	05	06	07	08	
Energy Use (kTDV/ft)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement	
Space Heating	22.70	24.34	-1.64	-7.2%	
Space Cooling	14.11	11.78	2.33	16.5%	
IAQ Ventilation	1.13	1.13	0.00	0.0%	
Water Heating	13.86	13.86	0.00	0.0%	
Photovoltaic Offset	----	0.00	0.00	----	
TOTAL	51.80	51.11	0.69	1.3%	



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REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Window overhangs and/or fins

HERS FEATURE SUMMARY
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Window overhangs and/or fins

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (sft)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
1 Story Example	2100	1	3	1	1	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
Conditioned	Conditioned	HVAC System 1	2100	9	Gas 60 EF	

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OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window Area (ft ²)	Tilt(deg)
Front	Conditioned	R15 R4 Stucco Wall	90	Front	270	100	90
Left	Conditioned	R15 R4 Stucco Wall	180	Left	324	56.04	90
Back	Conditioned	R15 R4 Stucco Wall	270	Back	450	207.32	90
Right	Conditioned	R15 R4 Stucco Wall	0	Right	414	56.04	90
Ceiling (below attic) 1	Conditioned	R38 Ceiling below attic			2100		
GarToHouse Front	Conditioned>>Garage	Gar House R15			180		
GarToHouse Left	Conditioned>>Garage	Gar House R15			90		
Gwall Front	Garage	Garage Ext Wall	90	Front	180	0	90
Gwall Left	Garage	Garage Ext Wall	180	Left	198	0	90
Gwall Right	Garage	Garage Ext Wall	0	Right	108	0	90
Gceil	Garage	R0 ClgBlwAttic Cons			440		

ATTIC						
01	02	03	04	05	06	07
Name	Construction	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic	Tile RB Roof	5	0.2	0.85	Yes	No

WINDOWS											
01	02	03			04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)			Height (ft)	Width(ft)	Multiplier	Area (ft ²)	U-factor	SHG C	Exterior Shading
F1	Window	Front (Front-90)			5.0	10.0	1	50.0	0.32	0.25	
F2	Window	Front (Front-90)			5.0	10.0	1	50.0	0.32	0.25	
L1	Window	Left (Left-180)			4.7	6.0	2	56.0	0.32	0.25	
B1 SGD	Window	Back (Back-270)			7.7	8.0	1	61.4	0.32	0.25	
B2	Window	Back (Back-270)			4.7	6.0	3	84.6	0.32	0.25	
B3 SGD	Window	Back (Back-270)			7.7	8.0	1	61.4	0.32	0.25	
R1	Window	Right (Right-0)			4.7	6.0	2	56.0	0.32	0.25	

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DOORS			
01	02	03	04
Name	Side of Building	Area (ft ²)	U-factor
Front Dr	Front	20.0	0.50
GarToHouse Dr	GarToHouse Front	20.0	0.50
GDoor	Gwall Front	108.0	1.00

OVERHANGS AND FINNS													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Window	Overhang	Left Fin				Right Fin							
	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	DistL	Bot Up	Depth	Top Up	Dist R	Bot Up
F1	1	1.33	3	28	0.4	12	1.33	1	0	0	0	0	0
F2	1	1.33	28	3	0.4	0	0	0	0	0	0	0	0
L1	1	1.33	6	8	0.4	0	0	0	0	0	0	0	0
B1 SGD	6	1.33	4	40	0.4	0	0	0	0	0	0	0	0
B2	6	1.33	23	23	0.4	0	0	0	0	0	0	0	0
B3 SGD	6	1.33	40	4	0.4	0	0	0	0	0	0	0	0
R1	1	1.33	8	8	0.4	0	0	0	0	0	0	0	0

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OPAQUE SURFACE CONSTRUCTIONS					
01	02	03	04	05	06
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Assembly Layers
R0 ClgBlwAttic Cons	Ceilings (below attic)	Wood Framed Ceiling	2x4 Bottom Chord of Truss @ 24 in. O.C.		<ul style="list-style-type: none"> Attic Floor: - no attic floor - Cavity: - no insulation - Sheathing/Insulation: - no sheathing/insul. - Inside Finish: Gypsum Board
Gar House R15	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Sheathing/Insulation: - no sheathing/insul. - Cavity: R 15 Sheathing/Insulation: - no sheathing/insul. - Other Side Finish: Gypsum Board
Tile RB Roof	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.		<ul style="list-style-type: none"> Roofing: 10 PSF (RoofTile) Above Deck Insulation: - no insulation - Roof Deck: Wood Siding/sheathing/decking Cavity: - no insulation - Inside Finish: - select inside finish -
R38 Ceiling below attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 Bottom Chord of Truss @ 24 in. O.C.	R 38	<ul style="list-style-type: none"> Attic Floor: - no attic floor - Cavity: R 38 Sheathing/Insulation: - no sheathing/insul. - Inside Finish: Gypsum Board
R15 R4 Stucco Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Sheathing/Insulation: - no sheathing/insul. - Cavity: R 15 Sheathing/Insulation: - no sheathing/insul. - Exterior Finish: R4 Synthetic Stucco
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	- no insulation (vertical) -	<ul style="list-style-type: none"> Inside Finish: Gypsum Board Sheathing/Insulation: - no sheathing/insul. - Cavity: - no insulation (vertical) - Sheathing/Insulation: - no sheathing/insul. - Exterior Finish: 3 Coat Stucco

OPAQUE SURFACES – Cathedral Ceilings										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Type	Orientation	Area (ft ²)	Roof Risee (x in 12)	Roof Pitch	Roof Tilt(deg)	Roof Reflectance	Roof Emmittance	Framing Factor

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SLAB FLOORS						
01	02	03	04	05	06	07
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value& Depth	Carpeted Fraction	Heated
Slab On Grade 2	Conditioned	2100	162	None	0.8	No
Gslab	Garage	440	44	None	0	No

BUILDING ENVELOPE - HERS VERIFICATION			
01	02	03	04
Quality Insulation Installation(QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	ACH @ 50 Pa
NOT REQUIRED	NOT REQUIRED	NOT REQUIRED	---

WATER HEATING SYSTEMS			
01	02	03	04
Name	Distribution Type	Number of Heaters	Solar Fraction (%)
Gas 60 EF	Standard	1	NaN

WATER HEATERS							
01	02	03	04	05	06	07	08
Name	Heater Element Type	Tank Type	Tank Volume (gal)	Energy Factor or Efficiency	Input Rating	Tank Exterior Insulation R-value	Standby Loss (Fraction)
50 Gal Gas	Natural Gas	Small Storage	50	0.6	40000-Btu/hr	0	0

WATER HEATING - HERS VERIFICATION						
01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Point-of Use	Recirculation with Manual Control	Recirculation with Sensor Control
Gas 60 EF-hers-dhw	n/a	n/a	n/a	n/a		n/a

HVAC SYSTEMS								
01	02	03		04		05	06	07
Name	System Type	Heating System		Cooling System		Distribution System	Fan System	Floor Area Served
		Name	Ducted	Name	Ducted			
HVAC System 1	Other Heating and Cooling System	Min Furn 78	Yes	Cooling Min	Yes	Attic Default	HVAC Fan 1	2100

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HVAC - HEATING SYSTEMS		
01	02	03
Name	Type	Efficiency
Min Furn 78	CntrlFurnace - Fuel-fired central furnace	78 AFUE

HVAC - COOLING SYSTEMS				
01	02	03	04	05
Name	System Type	EER	SEER	HERS Verification
Cooling Min	SplitAirCond - Split air conditioning system	11.3	13	Cooling Min-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 Min-hers-cool	Required	350	Not Required	Not Required	Required

HVAC - DISTRIBUTION SYSTEMS							
01	02	03	04	05	06	07	08
Name	Type	Duct Leakage	Insulation R-value	Supply Duct Location	Return Duct	Bypass Duct	HERS Verification
Attic Default	Ducts located in unconditioned attic	Sealed and tested	6	Attic	Attic	None	Attic Default-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION					
01	02	03	04	05	06
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design Return	Verified Duct Design Supply
Attic Default-hers-dist	Required	6.0	Not Required	Not Required	Not Required

HVAC - FAN SYSTEMS			
01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	Required

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HVAC FAN SYSTEMS - HERS VERIFICATION		
01	02	03
Name	VerifiedFanWatt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS				
01	02	03	04	05
Name	IAQ CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
IAQ Fan	51	Exhaust	0	Required

COOLING VENTILATION				
01	02	03	04	05
Name	Cooling Vent CFM	Cooling Vent Watts/CFM	Number of Fans	HERS Verification
Whole House Fan	4200	0.1	1	

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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:	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA/HERS Certification Identification (If applicable):
City/State/Zip:	Phone:
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"> 1. 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. 2. 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. 3. 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:

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