

Sections 10-101 -10-109. Administrative Code

Scope of Comment	Subsection	Comment	Suggested edit
Imprecise language for “documentation author”	10-102	One definition is confusing and seems to contradict itself. The documentation author for CF-4R is a HERS Rater, and for CF-6R is person who takes responsibility for construction. The deleted sentence is a contradiction of the second sentence. This change will at least solve some of the issues with one definition.	DOCUMENTATION AUTHOR is the person who prepares a Title 24, Part 6 compliance document (Certificate of Compliance, Installation Certificate, Certificate of Acceptance, or Certificate of Field Verification and Diagnostic Testing). A The Certificate of Compliance documentation author is not required to be eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design and/or construction, and is not required to be a certified HERS rater. A documentation author who is not eligible under Division 3 of the Business and Professions Code shall not accept responsibility for compliance with Title 24, Part 6.
Business and Professions Code language for CF-1R signature	10-103(a)1.	First sentence says, the CF-1R shall be signed “and submitted“ ... by the person(s) eligible under Division 3 of Business and Professions Code, but if it must be registered this is misleading because it’s the Energy Consultant (CF-1R Documentation Author) who submits it to the registry. Delete reference to Business and Professions Code here - it is covered in 10-103(a)1.A.vi.	1. Certificate of Compliance. For all buildings, the Certificate(s) of Compliance described in Section 10-103 shall be signed and submitted in accordance with Sections 10-103(a)1 and 10-103(a)2 by the person(s) eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design (responsible person) to certify conformance with Part 6. If more than one person has responsibility for building design, each person shall sign the Certificate of Compliance document(s) applicable to that portion of the design for which the person is responsible. Alternatively, the person with chief responsibility for building design shall prepare and sign the Certificate of Compliance document(s) for the entire building design. Subject to the requirements of Sections 10-103(a)1 and 10-103(a)2, persons who prepare Certificate of Compliance documentation (documentation authors) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete. The signatures provided by responsible persons and documentation authors shall be original signatures on paper documents or electronic signatures on electronic documents.
Recommend deleting	10-103(a)1.C.	This is too much responsibility for the most complex part of the Code and too subject to error. I’ve seen errors (no radiant barrier requirement) on building department documentation for prescriptive additions. When is HERS verification not required for a prescriptive addition of 300 sq.ft.? It is very, very limited (not sure if there is any time when ductwork is installed that testing isn’t required). If left in, at least require 10-106 review.	C. For alterations to existing residential buildings for which HERS field verification is not required, and for additions to existing residential buildings that are less than 300 square feet for which HERS field verification is not required, the enforcement agencies may at their discretion develop simplified Certificate of Compliance documentation for use for demonstrating compliance with the Standards.

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Sections 10-101 -10-109. Administrative Code

Scope of Comment	Subsection	Comment	Suggested edit
Edit	10-103(a)1.E.	Change “should” to “must”	...the licensed engineer should <u>must</u> be a qualified in-house engineer...
Question about intent	10-103(a)2.A.	This looks like a streamlined method for alterations. But it should either mention HERS verification or insert “not” making it clear this only applies when HERS verification is not required.	For alterations to existing residential buildings for which HERS field verification is <u>not</u> required, and when the enforcement agency does not require building design plans to be submitted with the application for a building permit, the applicable Certificate of Compliance documentation specified in 10-103(a)1 is not required to be approved by the enforcement agency prior to issuance of a building permit, but shall be approved by the enforcement agency prior to final inspection of the dwelling unit, and shall be made available to the enforcement agency for all applicable inspections.
Edit	10-103(a)2.C.	Redundant language.	C. The enforcement agency shall have the authority to require submittal of any supportive documentation that was used to generate the Certificate(s) of Compliance, and shall have the authority to require submittal of any supportive documentation that is <u>or is</u> necessary to demonstrate the building design conforms to the requirements of Part 6.
Imprecise language	10-103(a)3.	The CF-6R is only submitted when registration is required, otherwise it is posted. How about changing "shall sign and submit" to "shall complete, sign and distribute”	A. Installation Certificate. For all buildings, the person(s) <u>eligible under Division 3 of the Business and Professions Code to accept responsibility-with overall responsibility for construction or the person(s) responsible</u> for the construction/ installation of features, materials, components, or manufactured devices regulated by Part 6 or the Appliance Efficiency Regulations (responsible person) shall <u>complete, sign and submit</u> submit <u>distribute</u> Installation Certificate documentation (s) as specified in this sectionSection 10-103(a)3 to certify conformance with Part 6. If more than one person has responsibility for the construction/installation, each person shall <u>complete, sign and submit</u> submit <u>distribute</u> the Installation Certificate documentation applicable to the portion of the construction/installation for which they are responsible; alternatively, the person with chief responsibility for the construction/installation shall sign and <u>submit</u> submit <u>distribute</u> the Installation Certificate documentation for the entire construction/installation scope of work for the project. Subject to the requirements of Section 10-103(a)3, persons who prepare Installation Certificate documentation (documentation authors) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete. The signatures provided by responsible persons and documentation authors shall be original signatures on paper documents or electronic signatures on electronic documents.

Sections 10-101 -10-109. Administrative Code

Scope of Comment	Subsection	Comment	Suggested edit
Unnecessary provision	10-103(a)3A.v.	v. is copied from CF-1R language and is not needed here. The responsible person is the same as the documentation author for a CF-6R.	<p>v. Be signed by the documentation author to certify the documentation is accurate and complete. When document registration is required by 10-103(a)3, the signature shall be an electronic signature on an electronic document in accordance with the electronic signature specifications in Reference Joint Appendix JA9.</p> <p>vi. Be signed by the responsible person eligible under Division 3 of the Business and Professions Code to accept responsibility for construction/installation in the applicable classification for the scope of work specified on the Installation Certificate document(s), or shall be signed by their authorized representative. When document registration is required by 10-103(a)3, the signature shall be an electronic signature on an electronic document in accordance with the electronic signature specifications in Reference Joint Appendix JA9.</p>
Question	10-103(a)3C.	Why is this needed for installation certificates? It's too much responsibility and too subject to error.	C. For alterations to existing residential buildings for which HERS field verification is not required, and for additions to existing residential buildings that are less than 300 square feet for which HERS field verification is not required, the enforcement agencies may at their discretion develop simplified Installation Certificate documentation for use for demonstrating compliance with the Standards.
Edit	10-109(a)3.	Approval seems like the more appropriate name than Submittal. Either #2 is missing or numbering is off.	
Edit	10-109(a)6.	Either remove "a" from "a compliance software" or add program.	465. The Commission may modify or withdraw certification of a-compliance software, alternative component package, calculation method, exceptional method, or data registry under Sections 10-109 based on approval of other programs or methods that are more suitable.
Typo	10-109(c)	Misspelling of software	(c) COMPLIANCE SOFTWARE
Question	10-109(f)	There is no JA9 yet to confirm but this language means that a residential data registry will allow residential and nonresidential registration, but not the reverse	The Commission may approve residential data registries that provide for registration of residential and nonresidential documentation for demonstrating compliance with Part 6. The Executive Director may approve nonresidential data registries that provide for registration of nonresidential documentation for demonstrating compliance with Part 6.

Section 150.0 Mandatory Measures

Scope of Comments	Subsection	Comment	Suggested edit
Subject to being overlooked	(g)	New requirement applicable to all zones should go first.	(g) Vapor Barriers Retarder. <u>Unvented crawl spaces the earth floor of the crawl space shall be covered with a Class I or Class II vapor retarder.</u> In Climate Zones 14 and 16 shown in FIGURE 101-A, a Class II vapor barrier-retarder shall be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-impermeable insulation. , and In Climate Zones 1-16 unvented crawl spaces the earth floor of the crawl space shall be covered with a Class I or Class II vapor retarder to protect insulation from condensation.
Legal issue	(h)2.	Does ANSI/ACCA make it clear that energy consultants are not qualified to select equipment (see Business and Professions Code)?	
Error	(J)2.	Table 123-A	<u>Table 120.3-A.</u>
Typographical + edit	(j)4.	When used as adjective, 1 inch has a hyphen. Second edit is to save words.	54. The maximum length of 1-inch (25 mm) piping in a non-recirculating domestic hot water distribution system shall be limited to a total length of 150 feet (4.5 m). EXCEPTION 1 to Section 150.0(j)5: A dedicated 1-inch (25 mm) line feeding a high flow tub fixture (s) (or tub fixtures) can be installed provided all other fixtures meet the requirement of 150.0(j)5.
Suggestion	(j), (k)	Placement of tables – at some point the tables start appearing near the text to which they belong. Either put them all at the end, or put them closer to relevant text (my preference).	
Redundant exception	(k)1.E.	E and F both cover exhaust fans and both have the exact same exception. Not sure if both are needed. Seems like F is sufficient.	EXCEPTION to Section 150.0(k)1E. Lighting installed by the manufacturer in kitchen exhaust hoods.
Inconsistency	(k)7.	Closets were deleted in 6, and have an exception added in 7. Recommend not deleting the word closets, or delete the Exception.	17. Lighting other than in Kitchens, Bathrooms, Garages, Laundry Rooms, Closets, and Utility Rooms. Permanently Lighting installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms shall be high efficacy luminaires, <u>or shall be controlled by either dimmers or vacancy sensors.</u> EXCEPTION 1 to Section 150.0(k)7: Luminaires in closets less than 70 square feet.

Section 150.0 Mandatory Measures

Scope of Comments	Subsection	Comment	Suggested edit
Multiple Issues – (1) Better as an Exception	(m)13.A	This is a big exception – if no cooling. Would be better if shown as an Exception? And see next comment	13. Duct System Sizing and Air Filter Grille Sizing. For space conditioning systems that utilize forced air ducts to supply conditioned air to an occupiable space, all such duct systems shall have return ducts and return air filter grills that conform to the requirements in Section 150.0(m)13A , otherwise the forced air duct systems shall demonstrate compliance with the fan watt draw and airflow verification requirements given in Section 150.0(m)13B . The requirements of sections 150.0(m)13A and 150.0(m)13B do not apply to heating-only systems. <u>EXCEPTION to 150.0(m)13: When cooling is not provided and is not a builder option, duct system sizing and air filter grille sizing is not required.</u>
(2) Table numbering	(m)13.A	Tables 150.0-A and B are already taken by (j) (pipe insulation) and Tables 150.0-C and D are taken by (k) (lighting) And see next comment	A. Return duct sizing and return air filter grille sizing shall conform to the applicable requirements in Tables 150.0- A <u>E</u> and 150.0- B <u>F</u> ; <u>or</u> Table 150.0- A <u>E</u> : Return Duct Sizing for Single Return Duct Systems Table 150.0- B <u>F</u> : Return Duct Sizing for Multiple Return Duct Systems
(3) Wording for Fan watt draw	(m)13.B	B is an alternative to A, but this is not clear. Not sure if adding “or” as shown above is sufficient. Could also copy style from 150.0(a) it could be shown as ALTERNATIVE to 150(m)13A:	
Grammar	(n)1.A.	I think this is incorrect grammar.	A. A 120V electrical receptacle within 3 feet from <u>of</u> the water heater. This

Section 150.1 Performance and Prescriptive

Scope	subsection	Comment	Suggested edit
Edit	(a)3.	Incomplete	...Climate zones are shown in Joint Appendix JA2 .
General	(b)-(e) deleted	Will assume this is being transferred to the ACM – e.g., multiple orientation alternative	
Simplify	150.1(c)3.A.	1. By definition a window is not a skylight. Is it really necessary to say vertical and “except for skylights”? 2. SHGC is addressed in 4, so it should be removed from 3 in two places.	Installed vertical fenestration products shall have an area-weighted average, except for skylights , U-factor and SHGC equal to or lower than those shown in TABLE 151-B, TABLE 151-C, or TABLE 151-D TABLE 150.1-C and shall be determined in accordance with Section 110.6(a)2 or Section 110.6(a)3. Skylights shall have an U-factor and SHGC equal to or lower than those shown in TABLE 150.1-C , or and shall be determined in accordance with Section 110.6(a).
Edit	150.1(c)3.A. EXCEPTION 2	Note sure if this is left over or the exception is to the U-factor of 0.55 requirement. Either delete the exception or change it to be clear what the exception is from.	EXCEPTION to Section 150.1(c)3A: For each building up to 8 square feet of skylight with a maximum U-factor of 0.55 EXCEPTION 2 to Section 150.1(c)3A: For each building up to 8 square feet of skylight can exceed the with a maximum U-factor of 0.55.
Edit	150.1(c)4 EXCEPTION	Skylights are shown in the prescriptive package as having unique SHGCs. Either remove this exception or correct Section number, reference and value.	DELETE or fix EXCEPTION to Section 150.1(4)4A: For each building up to 8 square feet of skylight can exceed the with a maximum U-factor SHGC of 0.55 30 .
Edit	150.1(c)8	G was added below, but not referenced.	8. Domestic Water-heating systems. Water heating-systems shall meet the requirements of either A, B, or C, or D and meet the requirements of D and E, and F, and G or shall meet the requirements of Section 451 150.1(b)1 .
Edit	150.1(c)8.B	Apparently industry thinks tankless is more correct term than instantaneous	B. For systems serving individual dwelling units, a single gas or propane instantaneous tankless water heater with an input of 200,000 Btu per hour or less and no recirculation pumps or storage tank, and that meets the requirements of Sections 110.1 and 110.3 shall be installed.
Edit	150.1(c)8.C.iii.	Use “or” instead of “and”	iii. A solar water-heating system that provides a minimum of 20 percent of the annual energy for water heating in climate zones 1 through 9 and or a minimum of 35 percent of the annual energy for water heating in climate zones 10 through 16.
Edit	150.1(c)10	Renumber 10 since 9 is deleted	
Footnote references	Table 150.1-C	Footnotes 7-10 not referenced	HVAC SYSTEM ^{7,10} Space Heating ⁸ Whole House Fan ⁹
Edit	Table 150.1-C Note 1		150.1(4)1A.

Section 150.1 Performance and Prescriptive

Scope	subsection	Comment	Suggested edit
Inconsistency	Table 150.1-C Note 2	<p>1. Based on Section (c)2, a radiant barrier is not required if R-13 below deck roof insulation is installed. Shouldn't that be mentioned here? [Even if you decide to eliminate Notes 11 and 12, I think this is important enough to restate here.]</p> <p>2. Make sure this is captured in the ACM for performance modeling.</p>	<p>Insulation shall be installed either above (on top) or alternatively directly below (underneath) the roof deck sheathing. Required (REQ) insulation installed above the roof deck shall be a minimum R-4; insulation installed below the roof deck shall be a minimum R-13. <u>When insulation is installed below the roof deck, a radiant barrier is not required.</u></p>
Edit	Table 150.1-C Note 8	If HSPF is defined, then AFUE should be as well.	<p>8 <u>AFUE means "annual fuel utilization efficiency. HSPF means "heating seasonal performance factor."</u></p>
Supplemental heat	Table 150.1-C Note 10	Is there a similar provision in ACM for performance allowing a small system to be ignored in modeling?	
Inconsistency	Table 150.1-C Notes 11, 12	This language is already in (c), not sure why some information is repeated in footnotes and some is not – e.g., radiant barrier exception	

Section 150.2 Additions and Alterations

Scope	subsection	Comment	Suggested edit
Edit	(a)1.C.	Self-explanatory	C. Additions of 100 square feet or less shall not have fenestration more than 50 square feet of fenestration area, and shall meet the U-factor and Solar Heat Gain Coefficient requirements of Package A (Sections 150.1(c)3A, 150.1(c)4 and TABLE 150.1-C).
Application of this exception	EXCEPTION 1 to (a)2.B.	This should apply to any performance approach. By including the B it means the exception is limited to Existing + Addition + Alteration.	EXCEPTION 1 to 150.2(a)-2B: WALL INSULATION: Existing structures with a minimum R-13 insulation ...
Application of this exception	EXCEPTION 2 to (a)2.B.	This should apply to any addition as indicated by the language which mentions prescriptive. By including the 2B it means the exception is limited to performance and only Existing + Addition + Alteration. Second edits are because there are no longer discrete space conditioning and water heating budget subsections.	EXCEPTION 2 to 150.2(a)2B: WATER HEATING: If the addition will increase the total number of water heaters ... For prescriptive compliance with Section 150.2(a)1, the water heating systems requirement in Section 150.1(f)8 shall not apply. For performance compliance for the addition alone, only the space-conditioning budgets of Section 150.1(b)2 shall be used; the water-heating budgets of Section 150.1(b)1 shall not apply.
Application of this exception	EXCEPTION 3 to (a)2.B.	This should apply to performance at a minimum and possibly all additions. If it applies to all additions, remove the 2B. If it applies to performance additions remove the B.	EXCEPTION 3 to 150.2(a)2B: SPACE CONDITIONING: When heating and/or cooling will be extended to an addition from the existing system(s), the existing heating and cooling equipment need not comply with Title 24, Part 6. The heating system capacity must be adequate to meet the minimum requirements of CBC Section 1204.1.
Application of this exception	EXCEPTION 4 to (a)2.B.	This should apply to performance at a minimum and possibly all additions. If it applies to all additions, delete the 2B. If it applies to performance additions remove the B.	EXCEPTION 4 to Section 150.2(a)2B; DUCTS: When ducts will be extended from an existing duct system to serve the addition, the ducts shall meet the requirements of Section 150.2(b)1D.
Edit for clarification	(b)1.A.	Confusing order makes it more difficult to follow. Not sure that it's necessary to restate all of the sections #s and the Table, but changing	A. Fenestration: Alterations that add fenestration area shall meet the total fenestration area and west-facing fenestration area requirements of Package A (Sections 150.1(c), Table 150.1-C) , U-factor requirements of Package D-A (Section 150.1(f)3A and TABLE 151-C TABLE 150.1-C), the total fenestration area and west-facing fenestration area requirements of Package D-A (Sections 150.1(f)3B and C and TABLE 151-C TABLE 150.1-C), and the Solar Heat Gain coefficient requirements of Package D-A (Section 150.1(f)4 and TABLE 151-C TABLE 150.1-C).
Edit	(b)1.D.	Package D reference	Requirements of Package D A Section 150.1(f)10.

Section 150.2 Additions and Alterations

Scope	subsection	Comment	Suggested edit
Edit	(b)1.H.	Given that difference in the requirements for low-slope and steep slope, should probably introduce concept of “largest area” from ACM 3.4.1.	i. Low-rise residential buildings where the largest area of roof is with steep-sloped roofs.
Edit	(b)1.H	If this is limited to low-sloped roofs, then remove the second reference to subsection ii.	ALTERNATIVE TO SECTION 150.2(b)1Hi-and-ii: The following shall be considered equivalent to Subsection i-and ii:
	(b)1.H.ii	Package A shows 0.67, not 0.63. I’m sure this should be the same.	iii. Low-sloped roofs in climate zones 13 and 15 shall have a 3-year aged solar reflectance equal or greater than 0.55-6367 and a thermal emittance equal or greater than 0.7585, or a minimum SRI of 6475.
Edit	Table 150.2	To help clarify, add “Roof Deck” to the column headings “Insulation R-value”	
Edit	(b)2.B.	Edits to this section removed an R-value and now point back to 150.0(a), which is R-30 for all climate zones.	i. Ceiling Insulation. The standard design energy budget shall be based on the requirements of Section 110.8(d) 150.0(a).
Question	(b)2.B.iv.	Are these intentionally different than Package A? Will the ACM specify what the values are for the other climate zones (e.g., 0.66 SHGC=NR; not sure about U-factor)?	iv. Fenestration. The standard design energy budget shall be based on the U-factor of 0.40 and SHGC value of 0.40 in climate zones 2, 4, and 6-16 requirements of TABLE 151-C . The allowed glass area shall be the glass area of the existing building.
Edit	(b)2.B.vii	Update reference	vii. Water Heating Systems. The standard design energy budget shall be based on requirements of Section 150.1(b)1.
Question	(b)2.D.	This means there is a penalty for someone who’s home is more efficient than the current standard design. E.g., If they have R-38 ceiling and will upgrade to R-49, they’re compared to R-38 while the person who did nothing is compared to R-30, receiving more credit.	D. When the altered component's existing conditions exceed the requirements specified in subsection i through viii above, the standard design shall be based on existing conditions.
Scope of exception	EXCEPTION to 150.2(b)	As written only in an alteration, not an addition, is a garden window assumed to comply with the U-factor. If this isn’t correct, then the reference is wrong.	EXCEPTION to Section 150.2(b): Any dual-glazed greenhouse/ garden window installed as part of an alteration complies with the U-factor requirements in Section 150.1(c)3.