

Supplemental Plan Check Corrections Sheet for 2016 Building Energy Efficiency Standards

This is intended to provide uniform application of the codes by the plan check staff and to help the public apply the codes correctly.

Plan Check/PCIS Application No.: Date:

Job Address:

Applicant Name:

Address: Phone:

City/State/Zip: E-mail:

Plan Check Engineer:

Telephone: E-mail:

firstname.lastname@lacity.org

For instruction and other information, read the master plan check list attached.

NOTE: Numbers in parenthesis [] refer to Code sections of California Code of Regulations Title 24, Part 6. Tables referenced herein are from:

- 2016 California State Building Energy Efficiency Standards,
- 2016 Referenced Appendices
- 2016 Residential Compliance Manual
- 2016 Non-Residential Compliance Manual

A copy of referenced standards above can be obtained at: <http://www.energy.ca.gov/title24/2016standards/>

A. All Buildings

- | | |
|--|---|
| <p>1. Specify design package used and method of compliance:</p> <p><input type="checkbox"/> Prescriptive Approach</p> <p><input type="checkbox"/> Performance Approach</p> <p>2. The following compliance documents shall be attached to plan :</p> <p><input type="checkbox"/> Certificate of Compliance Documents</p> <p><input type="checkbox"/> Mandatory Features Summary</p> <p><input type="checkbox"/> <input type="text"/></p> <p>3. Compliance documents shall be produced by up-to-date version of Energy Commission Approved computer programs. To obtain a list of Energy Commission approved compliance programs, call 1-800-772-3300 or visit their website at : http://www.energy.ca.gov/title24/2016standards/</p> <p>4. Proposed fenestration U-Factor does not conform with Defaults values from Table 110.6-A. Specify on plan NFRC rated products are required for all fenestration with Non-Default U-Factors.</p> | <p>5. The Solar Heat Gain Coefficient (SHGC) for proposed glazing does not conform with Defaults values from Table 110.6-B. Specify on plan NFRC rated products are required for all fenestration with Non-Default SHGC.</p> <p>6. The conditioned floor area shown on CF-1R form does not match with plans submitted. Revise calculation(s) accordingly.</p> <p>7. The window area (at <input type="text"/> facing wall) shown on CF-1R-<input type="text"/> form does not match with plans submitted. Revise calculation(s) accordingly.</p> <p>8. Incorporate the fenestration SHGC and U-factors required as per CF-1R form with window schedule.</p> <p>9. Provide construction details for all energy insulation assemblies. Show type of insulation on sections.</p> |
|--|---|

B. Non-residential, High-rise residential, and hotel / motel buildings

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request will provide reasonable accommodation to ensure equal access to its programs, services and activities.

1. Prescriptive requirement for building envelope :
 - Cool Roof coating is required. Note on plan all Cool Roof product shall have a clearly visible packaging label that lists the emittance and the initial and 3-year aged solar reflectance, or a CRRC approved accelerated aged solar reflectance tested in accordance with CRRC-1. [10-113, 140.1, 140.2, 140.3(a)1, 141.0(b)2B, 150.1(c)11, 150.2(b)1H, 150.2(b)2]
 - Skylight(s) are required for building over 5,000 ft², ceiling heights over 15-0", and lighting power density over 0.5 W/ft². [140.3(c)]
 - Combined total of at least 75 percent of the floor area shall be in the primary Sidelight Daylight Zone in accordance with Section 130.1(d)1B, or Skylit Daylit Zone in accordance with Section 130.1(d)1A. All Skylit Daylit Zones and Primary Sidelit Daylit Zones shall be shown on building plans [140.3(c)1].

C. Low Rise Residential Buildings

1. Prescriptive requirement for building envelope [TABLE.150.1-A]:
 - Provide R- insulation at Roof/ Ceiling, R- insulation at walls, and R- insulation at floors.
 - Provide radiant barrier. Show details on the plans.
 - The maximum total fenestration area shall not exceed the percent of conditioned floor area, CFA, as indicated in Table 150.1-A. [150.1(c)3B]
 - The maximum west facing fenestration area shall not exceed the percent of CFA as indicated in Table 150.1-A. [150.1(c)3C]
 - Installed fenestration products shall have an area weighted average U-factor and SHGC no greater than the applicable value in Table 150.1-A and shall be determined in accordance with Section 110.6(a)2 and 110.6(a)3.
 - Heating system types shall be installed as required in TABLE 150.1-A.
 - All space heating and space cooling equipment shall comply with minimum Appliance Efficiency Regulations as specified in Sections 110.0 through 110.2 and meet all applicable requirements of Sections 150.0 and 150.1(c)7A.
 - Provide Whole House Fan per section 150.1(c)12.
 - Water-heating systems shall meet the requirements of section 150.1(c)8.
 - Ducting shall have R-6 insulation
2. Replacement fenestration, where all the glazing in an existing fenestration opening is replaced with a new

manufactured fenestration product, shall not exceed the U-factor and SHGC requirements of Package A or as determined by performance approach. [150.1(c)]

3. HERS field verification is required. The person(s) responsible for the Certificate(s) of Compliance shall submit the Certificate(s) for registration and retention to a HERS provider data registry. The submittals to the HERS provider data registry shall be made electronically in accordance with the specifications in Reference Joint Appendix JA7. For additional information visit www.energy.ca.gov/HERS/.

D. General Notes

Attach the following notes to plan :

1. Compliance information The builder shall leave in the building, copies of the completed, signed and submitted compliance documents for the building owner at occupancy. For low-rise residential buildings, such information shall, at a minimum, include copies of all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentation submitted. . [10-103(b)1]
2. Operating information. The builder shall provide the building owner at occupancy, operating information for all applicable features, materials, components, and mechanical devices installed in the building. Operating information shall include instructions on how to operate the features, materials, components, and mechanical devices correctly and efficiently. The instructions shall be consistent with specifications set forth by the Executive Director. For residential buildings, such information shall be contained in a folder or manual which provides all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentations. This operating information shall be in paper or electronic format. [10-103(b)2]
3. Maintenance information. The builder shall provide to the building owner at occupancy, maintenance information for all features, materials, components, and manufactured devices that require routine maintenance for efficient operation. Required routine maintenance actions shall be clearly stated and incorporated on a readily accessible label. The label may be limited to identifying, by title and/or publication number, the operation and maintenance manual for that particular model and type of feature, material, component or manufactured device. [10-103(b)3]
4. Ventilation information. The builder shall provide to the building owner at occupancy, a description of the quantities of outdoor air that the ventilation system(s) are designed to provide to the building's conditioned space, and instructions for proper operation and

maintenance of the ventilation system. [10-103(b)4]

5. All systems, equipment, appliances and building components shall comply with the applicable manufacturing, construction, and installation provisions of Sections 110.0 through 110.11 for newly constructed buildings.
6. Any appliance regulated by the Appliance Efficiency Regulations, Title 20 California Code of Regulations, Section 1601 et seq., may be installed only if the appliance fully complies with Section 1608(a) of those regulations. [110.1(a)]
7. Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 3, Chapter 50 of the ASHRAE Handbook, HVAC Applications Volume. [110.3(a)1]
8. On systems that have a total capacity greater than 167,000 Btu/hr, outlets that require higher than service water temperatures as listed in the ASHRAE Handbook, Applications Volume, shall have separate remote heaters, heat exchangers, or boosters to supply the outlet with the higher temperature. [110.3(c)1]
9. Service hot water systems with circulating pumps or with electrical heat trace systems shall be capable of automatically turning off the system. [110.3(c)2]
10. Controls for service water-heating systems shall limit the outlet temperature at public lavatories to 110°F. [110.3(c)3]
11. Unfired service water-heater storage tanks and backup tanks for solar water-heating systems shall have:
 - a. External insulation with an installed R-value of at least R-12, or
 - b. Internal and external insulation with a combined R-value of at least R-16, or
 - c. The heat loss of the tank surface based on an 80°F water-air temperature difference shall be less than 6.5 Btu/hr per square foot. [110.3 (c)4]
12. For Nonresidential, high-rise residential, and hotel/motel buildings, space conditioning systems shall meet the efficiency standards specified Section 120.2.
13. Continuously burning pilot light shall be prohibited for the following natural gas system or equipment listed below: [110.5]
 - a. Fan-type central furnaces
 - b. Household cooking appliances, except for household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr
- c. Pool heaters
- d. Spa heaters
14. Any pool or spa heating system or equipment shall: [110.4]
 - a. A thermal efficiency that complies with the Appliance Efficiency Regulations
 - b. Have a readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting.
 - c. Not utilize electric resistance heating.
 - d. Have a cover for outdoor pools or spas that have a heat pump or gas heater.
 - e. Have a permanent, easily readable, and weatherproof instruction card that gives instructions for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used.
 - f. Have at least 36 inches of pipe installed between the filter and heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition of solar heating equipment.
 - g. Have directional inlets for the pool or spa that adequately mix the pool water.
 - h. A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.
15. Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft² of window area, 0.3 cfm/ft² of residential door area, 0.3 cfm/ft² of nonresidential single door area, and 1.0 cfm/ft² of nonresidential double door area. [110.6(a)1]
16. Fenestration products shall be rated in accordance with NFRC 100 for U-factor, NFRC 200 for SHGC, and VT or use the applicable default value. Fenestration products shall have a temporary label for manufactured fenestration products or a label certificate when the Component Modeling Approach is used and for site-built fenestration meeting the requirements of Section 10-111(a)1. [110.6(a)2, 110.6(a)3, 110.6(a)4, 110.6(a)5]
17. Field-fabricated fenestration products and exterior doors, other than unframed glass doors and fire doors, shall be caulked between the fenestration products or exterior door and the building, and shall be

weatherstripped. [110.6(b)]

18. Joints, penetrations and other openings in the building envelope that are potential sources of air leakage shall be caulked, gasketed, weather stripped, or otherwise sealed to limit infiltration and exfiltration. [110.7]
19. Insulation shall be certified by Department of Consumer Affairs, Bureau of Home Furnishing and Thermal Insulation that the insulation conductive thermal performance is approved pursuant to the California Code of Regulations, Title 24, Part 12, Chapter 12-13, Article 3, "Standards for Insulating Material." [110.8(a)]
20. Urea formaldehyde foam insulation may only be used in exterior side walls, and requires a four-mil-thick plastic polyethylene vapor barrier between the urea formaldehyde foam insulation and the interior space in all applications. [110.8(b)]
21. Insulating material shall be installed in compliance with the flame spread rating and smoke density requirements of the CBC. [110.8(c)]
22. Insulation installed on an existing space conditioning duct, it shall comply with Section 604.0 of the CMC. [110.8(d)3]
23. External insulation installed on an existing unfired water storage tank or on an existing back-up tank for a solar water-heating system, it shall have an R-value of at least R-12, or the heat loss of the tank surface based on an 80 °F water-air temperature difference shall be less than 6.5 Btu per hour per square foot. [110.8(d)2]

E. Residential Notes:

1. A masonry or factory-built fireplace shall have the following: [150.0(e)1]
 - a. Closeable metal or glass doors covering the entire opening of the firebox;
 - b. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device (*Exception: An outside combustion-air intake is not required if the fireplace will be installed over concrete slab flooring and the fireplace will not be located on an exterior wall.*); and
 - c. A flue damper with a readily accessible control. [150.0 (e)C]
2. Heating or cooling systems shall be equipped with a setback thermostat that meet the requirements of

Section 110.2(c). [150.0(i)]

3. Gas or propane water heaters shall have: [150.0(n)]
 - a. A 120V electrical receptacle that is within 3 feet from the water heater.
 - b. A Category III or IV vent, or a Type B vent with straight pipe.
 - c. Condensate drain that is no more than 2 inches higher than the base.
 - d. A gas supply line with a capacity of at least 200,000 Btu/hr
4. All pumps and pump motors installed shall be listed in the Commission's directory of certified equipment and shall comply with the Appliance Efficiency Regulations. [150.0(p)1.A]
5. The minimum installed weight per square foot of any loose-fill insulation shall conform with the insulation manufacturer's labeled R-value. [150.0 (b)]
6. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less. [150.1(c)(1)(D)]
7. The crawl space shall be covered with a vapor retarder over the entire floor. [150.1(c)1.D]
8. Insulations are required for: [150.0(j)2.A]
 - a. All hot water pipes from the heating source to the kitchen fixtures.
 - b. All piping with a nominal diameter of 3/4 inch or larger.
 - c. The first 5 feet (1.5 meters) of hot and cold water pipes from the storage tank.
 - d. All piping associated with a domestic hot water recirculation system.
 - e. Piping from the heating source to storage tank or between tanks.
 - f. Piping buried below grade.
9. Insulation shall be provided for water heaters as follows:
 - a. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater or have internal insulation of at least R-16 and a label on the exterior of the tank showing the insulation R-value. [150.0 (j)1]
10. Lighting [150.0(k)]
 - a. Installed luminaires shall be classified as high-efficacy in accordance with TABLE 150.0-A.
 - b. Exhaust fans shall be switched separately from lighting systems.

