

149141.0 NR Additions Alterations Repairs

SUBCHAPTER 6

NONRESIDENTIAL, HIGH-RISE RESIDENTIAL, AND HOTEL/MOTEL OCCUPANCIES—ADDITIONS, ALTERATIONS, AND REPAIRS

SECTION 149141.0 – ADDITIONS, ALTERATIONS, AND REPAIRS TO EXISTING BUILDINGS THAT WILL BE NONRESIDENTIAL, HIGH-RISE RESIDENTIAL, AND HOTEL/MOTEL OCCUPANCIES AND TO EXISTING OUTDOOR LIGHTING FOR THESE OCCUPANCIES AND TO INTERNALLY AND EXTERNALLY ILLUMINATED SIGNS

(a) **Additions.** Additions shall meet either Item 1 or 2 below.

1. **Prescriptive approach.** The envelope and lighting of the addition, any newly installed space-conditioning or water-heating system serving the addition, any addition to an outdoor lighting system, and any new sign installed in conjunction with an indoor or outdoor addition shall meet the applicable requirements of Sections 110.0 through 139130.5 and Sections 140.2 through 140.8.
2. **Performance approach.**
 - A. The envelope and indoor lighting in the conditioned space of the addition, and any newly installed space-conditioning or water-heating system serving the addition, shall meet the applicable requirements of Sections 110.0 through 139130.5; and
 - B. Either:
 - i. The addition alone shall comply with Section 140.1; or
 - ii. The energy use of the combination of the altered existing building plus the proposed addition shall be equal to or less than the energy use of the existing building with all alterations meeting the requirements of Section 149141.0(b)2 plus the standard energy budget of an addition that complies with Section 140.1.

EXCEPTION 1 to Section 149141.0 (a): When heating, cooling, or service water heating to an addition are provided by expanding existing systems, the existing systems and equipment need not comply with Sections 110.0 through 120.9, or Sections 140.4 through 140.5.

EXCEPTION 2 to Section 149141.0 (a): Where an existing system with electric reheat is expanded by adding variable air volume (VAV) boxes to serve an addition, total electric reheat capacity may be expanded so that the total capacity does not exceed 150 percent of the existing installed electric heating capacity in any one permit, and the system need not comply with Section 140.4(g). Additional electric reheat capacity in excess of 150 percent of the existing installed electric heating capacity may be added subject to the requirements of the Section 140.4(g).

EXCEPTION 3 to Section 149141.0 (a): When ducts will be extended from an existing duct system to serve the addition, the ducts shall meet the requirements of Section 149141.0(b)1D.

EXCEPTION 4 to Section 141.0(a): When the existing building does not have a solar zone or when the building's roof area is increased by less than 20 percent, the requirements of Section 110.10 need not be met.

The requirements of Section 110.10 shall not apply unless the building has an existing solar zone or unless the building's roof area is increased by 20 percent or more.

- (b) **Alterations.** Alterations to existing nonresidential, high-rise residential, or hotel/motel buildings, relocatable public school buildings or alterations in conjunction with a change in building occupancy to a nonresidential, high-rise residential, or hotel/motel occupancy not subject to Subsection (a) shall meet either Item 1 or 2 below.

1. **Prescriptive approach.** The altered envelope, space conditioning, lighting and water heating components, and any newly installed equipment serving the alteration, shall meet the applicable requirements of Sections 110.0 through ~~139~~120.6 and Sections 130.0 through 130.5; and

EXCEPTION to Section 141.0(b)1: When the existing building does not have a solar zone, the requirements of Section 110.10 need not be met.

NOTE: Replacement of parts of an existing luminaire, including installing a new ballast or new lamps, without replacing the entire luminaire is not an alteration subject to the requirements of Section 149(b)1.

- A. Fenestration to the building envelope Alterations other than those subject to Section ~~140.9~~141.0(b)1B shall ~~comply with~~meet the applicable ~~requirements~~subsections i through iii below:

- i. For all nonresidential, high-rise residential, and hotel/motel occupancies, when fenestration is not altered or where there are no alterations that increase the fenestration area, all altered components shall meet the requirements of Section 140.3(a) for the altered component.

EXCEPTION 1 to Section ~~149~~141.0(b)1Ai: When either (1) less than 150 square feet of an entire building's fenestration is replaced, or (2) 50 square feet or less of fenestration area is added, ~~compliance may be shown with Section 140.9(b)Ai except that~~ the RSHGC requirement of Section 140.3(a)5, or the solar heat gain coefficient of Section 140.3(a)6 is not required.

~~ii. Nonresidential buildings shall not increase the Overall TDV Energy of the building envelope.~~

~~iii. For high-rise residential and hotel/motel buildings, alterations shall meet the requirements of Sections 140.3(a)1 through 140.3(a)7.~~

EXCEPTION 2 to Section ~~149~~141.0(b)1Aiii: When Up to 150 square feet or less of window area are added, or window area may be excepted from the requirements of Section 140.3(a)5, and up to 50 square feet of less of added skylight are added, area may be excepted from the requirements of Section 140.3(a)6A. (The added windows shall meet the RSHGC requirements of for the 30-40 percent of WWR Section 140.3(a)5 of Error! Reference source not found. TABLE 143-B and the area of added skylights shall meet the SHGC the requirements of Section 140.3(a)6, SHGC for the 2.1 to 5 percent area of Error! Reference source not found. TABLE 143-B.

- B. Replacements, recovering or recoating of the exterior surface of existing roofs of nonresidential, high-rise residential, and hotels/motels roofs shall meet the requirements of Section 110.8(i), and where. For nonresidential buildings, high-rise residential buildings, and hotels/motels, where roofs with more than 50 percent of the roof or more than 2,000 square feet of roof, whichever is less, is being replaced, recovered or recoated, this altered roof area shall meet the applicable requirements of subsections i through ~~iv~~ii below.

- i. Nonresidential buildings:

- a. Low-sloped roofs in climate zones 1 through 16 shall have a minimum aged solar reflectance of 0.63 and a minimum thermal emittance of 0.85, or a minimum SRI of 75.

b. Steep-sloped roofs in climate zones 1 through 16 shall have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.85, or a minimum SRI of 16.

ii. High-rise residential buildings and hotels and motels:

a. Low-sloped roofs in climate zones 2 through 15 shall have a minimum aged solar reflectance of 0.63 and a minimum thermal emittance of 0.85, or a minimum SRI of 75.

b. Steep-sloped roofs climate zones 2 through 15 shall have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.85, or a minimum SRI of 16.

EXCEPTION 1 TO SECTION 141.0(b)1Bi and ii: Roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels are not required to meet the minimum requirements for solar reflectance, thermal emittance, or SRI.

EXCEPTION 2 TO SECTION 141.0(b)1Aia and iia: Roof constructions that have thermal mass over the roof membrane with a weight of at least 25 lb/ft².

Nonresidential buildings with low-sloped roofs in climate zones 2-15 shall have a minimum aged solar reflectance of 0.55 and a minimum thermal emittance of 0.75, or a minimum SRI of 64.

ii. ~~**EXCEPTION 3 TO SECTION 0.141.0(b)1Bia and iia:** The aged solar reflectance can be met by using insulation at the roof deck specified in Table 141.0-A~~

Table 141.0-A Aged Solar Reflectance Insulation Trade-Off Table

<u>Aged Solar Reflectance</u>	<u>Insulation R-value</u>	<u>Aged Solar Reflectance</u>	<u>Insulation R-value</u>
<u>0.62-0.60</u>	<u>2</u>	<u>0.44-0.40</u>	<u>12</u>
<u>0.59-0.55</u>	<u>4</u>	<u>0.39-0.35</u>	<u>16</u>
<u>0.54-0.50</u>	<u>6</u>	<u>0.34-0.30</u>	<u>20</u>
<u>0.49-0.45</u>	<u>8</u>	<u>0.29-0.25</u>	<u>24</u>

Nonresidential buildings with steep-sloped roofs in climate zones 2-16 with roofing product density less than 5 pounds per square foot shall have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16. Buildings with steep-sloped roofs in climate zones 1-16 with roofing product density of 5 pounds per square foot or more shall have a minimum aged solar reflectance of 0.15 and a minimum thermal emittance of 0.75, or a minimum SRI of 10.

iii. ~~High-rise residential buildings and hotels and motels with low-sloped roofs in climate zones 10, 11, 13, 14, and 15 shall have a minimum aged solar reflectance of 0.55 and a minimum thermal emittance of 0.75, or a minimum SRI of 64.~~

iv. ~~iii. For nonresidential buildings, high-rise residential buildings and hotels and motels, when low-sloped roofs are exposed to the roof deck or to the roof recover boards, the exposed area shall be insulated to the levels specified in TABLE 141.0-B TABLE 149-A.~~

EXCEPTION 1 to Section 149141.0(b)1Biviii: The existing roof is insulated with at least R-7 insulation or it has a U-factor lower than 0.089.

EXCEPTION 2 to Section 149141.0(b)1Biviii: If mechanical equipment is located on the roof and it will not be disconnected and lifted as part of the roof replacement,

insulation added may be limited to the maximum insulation thickness that will allow a height of 8 inches (203 mm) from the roof membrane surface to the top of the base flashing.

EXCEPTION 3 to Section 149141.0(b)1Biv-iii: If adding the required insulation will reduce the base flashing height to less than 8 inches (203 mm) at penthouse or parapet walls, the insulation added may be limited to the maximum insulation thickness that will allow a height of 8 inches (203 mm) from the roof membrane surface to the top of the base flashing, provided that the conditions in subsections i through iv apply:

- i. The penthouse or parapet walls are finished with an exterior cladding material other than the roofing covering membrane material; and
- ii. The penthouse or parapet walls have exterior cladding material that must be removed to install the new roof covering membrane to maintain a base flashing height of 8 inches (203 mm); and
- iii. For nonresidential buildings, the ratio of the replaced roof area to the linear dimension of affected penthouse or parapet walls shall be less than 25 square feet per linear foot for climate zones 2 and 10 through 16, and less than 100 square feet per linear foot for climate zones 1 and 3 through 9; and
- iv. For high-rise residential buildings, hotels or motels, the ratio of the replaced roof area to the linear dimension of affected penthouse or parapet walls shall be less than 25 square feet per linear foot for all climate zones.

EXCEPTION 4 to Section 149141.0(b)1Biv-iii: Tapered insulation may be used which has a thermal resistance less than that prescribed in TABLE 149141.0-A at the drains and other low points, provided that the thickness of insulation is increased at the high points of the roof so that the average thermal resistance equals or exceeds the value that is specified in ~~TABLE 149-A~~ TABLE 141.0-B.

~~**EXCEPTION 1 to Section 149(b)1B:** Roof recoverings allowed by the CBC are not required to meet Section 149(b)1B when all of the following occur:~~

- ~~1. The existing roof has a rock or gravel surface; and~~
- ~~2. The new roof has a rock or gravel surface; and~~
- ~~3. There is no removal of existing layers of roof coverings of more than 50 percent of the roof or more than 2,000 square feet of roof, whichever is less; and.~~
- ~~4. There is no recoating with a liquid applied coating; and~~
- ~~5. There is no installation of a recover board, rigid insulation or other rigid, smooth substrate to separate and protect the new roof recovering from the existing roof.~~

~~**EXCEPTION 2 to Section 149141.0(b)1B:** If the roofing product does not meet the requirements of Section 140.9(b)1B, then The Overall Envelope ~~TDV~~ Energy Approach of Section 140.3(b) may be used and the standard building shall be based on the higher roof/ceiling insulation value of the following;~~

- ~~i. For low-sloped roofs, the insulation values specified in ~~TABLE 149-A~~ TABLE 141.0-B; or;~~
- ~~ii. For steep-sloped roofs, the insulation values specified in Section 140.3(a); or~~
- ~~iii. The existing installed insulation.~~

TABLE 149141.0-A-B INSULATION REQUIREMENTS FOR ROOF ALTERATIONS

Climate Zone	Nonresidential		High-rise Residential and Guest Rooms of Hotel/Motel Buildings	
	Continuous Insulation R-value	U-factor	Continuous Insulation R-value	U-factor
1	R-8	0.081	R-14	0.055
2	R-14	0.055	R-14	0.055
3	R-8	0.081	R-14	0.055
4	R-8	0.081	R-14	0.055
5	R-8	0.081	R-14	0.055
6	R-8	0.081	R-14	0.055
7	R-8	0.081	R-14	0.055
8	R-8	0.081	R-14	0.055
9	R-8	0.081	R-14	0.055
10	R-14	0.055	R-14	0.055
11	R-14	0.055	R-14	0.055
12	R-14	0.055	R-14	0.055
13	R-14	0.055	R-14	0.055
14	R-14	0.055	R-14	0.055
15	R-14	0.055	R-14	0.055
16	R-14	0.055	R-14	0.055

- C. New space-conditioning systems or components other than new or replacement space conditioning ducts shall meet the requirements of Section 140.4 applicable to the systems or components being altered; and

~~**EXCEPTION 1 to Section 140.9(b)1C:** For expansions of existing chilled water plants, Section 140.4(i) applies only to expansions of more than 300 tons.~~

EXCEPTION 12 to Section 149141.0(b)1C: For replacements of equivalent or lower capacity electric resistance space heaters for high rise residential apartment units.

EXCEPTION 23 to Section 149141.0(b)1C: For replacement of electric reheat of equivalent or lower capacity electric resistance space heaters, when natural gas is not available.

- D. When new or replacement space-conditioning ducts are installed to serve an existing building, the new ducts shall meet the requirements of Section 120.4, and if they meet the criteria of Sections 140.4(k)1, 2, and 3, the duct system shall be sealed and labeled as confirmed through field verification and diagnostic testing in accordance with procedures for duct sealing of existing duct systems as specified in the Reference Nonresidential Appendix NA2, to meet one of the following requirements:

- i. If the new ducts form an entirely new duct system directly connected to the air handler, the measured duct leakage shall be no more than 6 percent of fan flow; or
- ii. If the new ducts are an extension of an existing duct system, the combined new and existing duct system shall meet one of the following requirements:
 - a. The measured duct leakage shall be less than 15 percent of fan flow; or
 - b. The duct leakage shall be reduced by more than 60 percent relative to the leakage prior to the equipment having been replaced and a visual inspection shall demonstrate that all accessible leaks have been sealed; or

- c. If it is not possible to meet the duct sealing requirements of subsection a or b, all accessible leaks shall be sealed and verified through a visual inspection by a certified HERS rater.

EXCEPTION to Section 149141.0(b)1Dii: Existing duct systems that are extended, which are constructed, insulated or sealed with asbestos.

- E. When a space conditioning system is altered by the installation or replacement of space conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger);

- ~~1i.~~ Existing non-setback thermostats shall be replaced with setback thermostats for all altered units. All newly installed space conditioning systems requiring a thermostat shall be equipped with a setback thermostat. All setback thermostats shall meet the requirements of Section 110.2(c); and
- ~~2ii.~~ Unitary systems with an economizer shall have control systems, including two-stage or electronic thermostats, that cycle compressors off when economizers can provide partial cooling; and
- ~~iii.~~ The duct system that is connected to the new or replaced space conditioning equipment, if the duct system meets the criteria of Sections 140.4(k)1, 2, and 3, shall be sealed, as confirmed through field verification and diagnostic testing in accordance with procedures for duct sealing of existing duct systems as specified in the Reference Nonresidential Appendix NA2, to one of the requirements of Section 149141.0(b)1D.

EXCEPTION 1 to Section 149141.0(b)1E: Buildings altered so that the duct system no longer meets the criteria of Sections 144 (k)1, 2, and 3.

EXCEPTION 2 to Section 149141.0(b)1E: Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.

EXCEPTION 3 to Section 149141.0(b)1E: Existing duct systems constructed, insulated or sealed with asbestos.

- F. Spaces with lighting systems installed for the first time shall meet the requirements of Sections 110.9, 130.0, 130.1, 130.2, 130.4, 140.3(c), 140.6, and 140.7; and
- G. When the requirements of Section 130.1(~~ed~~)~~2B~~ are triggered by the addition of skylights to an existing building and the lighting system is not re-circuited, the daylighting control need not meet the multi-level requirements in Section 130.1(~~ed~~)~~2D~~~~iii~~.
- H. New internally and externally illuminated signs shall meet the requirements of Sections 110.9, 130.3 and 140.8.
- I. Alterations to existing indoor lighting systems shall meet the following requirements, as applicable:
 - ~~1. Alterations that increase the connected lighting load, replace, or remove and re-install a total of 50 percent or more of the luminaires in an enclosed space, shall meet the requirements of Sections 130 and 146; and~~
 - ~~2. The following wiring alterations shall meet the requirements of Sections 119, 131, and 134:~~
 - ~~i. Where new or moved wiring is being installed to serve added or moved luminaires; or~~
 - ~~ii. Where conductor wiring from the panel or from a light switch to the luminaires is being replaced, or~~
 - ~~iii. Where a lighting panel is installed or relocated.~~

- ~~3. For an alteration where an existing enclosed space is subdivided into two or more spaces, the new enclosed spaces shall meet the requirements of Sections 131(a) and (d); and~~
- ~~4. Alterations that have less than 0.5 watts per square foot and increase the existing lighting power density to 0.5 watts per square foot or greater shall meet the requirements of Sections 119, 130, 131, 134, 143(e), and 146. ———~~
- i. Luminaire Alterations shall meet the applicable requirements in Table 141.0-C for each enclosed space.
 - a. Luminaire Alterations include the following:
 - 1 Luminaires are added.
 - 2 Luminaires are replaced.
 - 3 Luminaires are disconnected from the circuit, removed and reinstalled, whether in the same location or installed elsewhere.
 - ii. Luminaire Modifications-in-Place shall meet the applicable requirements in Table 141.0-D for each enclosed space.
 - a. Luminaire Modifications-In-Place are alterations where luminaires are not disconnected from the circuit, removed or re-installed; and include the following:
 - 1 Replacing ballasts and lamps.
 - 2.Changing the number or type of light source; including socket renewal, removal or relocation.
 - 3.Changing the optical system of the luminaire.
 - 4.Installing lighting control systems devices or class 2 wiring for lighting controls only.
 - iii. Lighting Wiring Alterations shall meet the applicable requirements in Sections 110.9, 130.1, and 130.4.
 - a. Lighting Wiring Alterations include the following:
 - 1.Adding circuits feeding luminaires
 - 2.Modifying or relocating wiring to provide power to new or relocated luminaires
 - 3.Replacing wiring between a switch or panelboard and luminaire(s).
 - 4.Replacing or installing a new panelboard feeding lighting systems
 - iv. When an existing enclosed space is subdivided into two or more spaces, the new enclosed spaces shall meet the requirements of Sections 130.1(a) and 130.1(c).
 - v. Any lighting alteration that increases the installed lighting power in an enclosed space shall meet the applicable requirements of Table 141.0-C.
 - vi. Luminaires not regulated by items (i), (ii), (iv), or (v), and for which there are no wiring alterations in accordance with item (iii) shall not be required to meet the applicable requirements of Section 130.1.
 - vii. The following indoor lighting alterations are not required to comply with the lighting requirements in Title 24, Part 6:
 - a. Replacement in kind of parts of an existing luminaire that include only new lamps, lamp holders, or lenses, when replacement of those parts is not a Luminaire-Modification-in-Place in accordance with Section 140.9141.0(b)11(ii).
 - b. Lighting Alterations that would be the direct cause of asbestos being disturbed.

Exception to Section 140.9141.0(b)1I(iii) Lighting alterations made in conjunction with asbestos abatement shall comply with the applicable requirements in Section 140.9141.0(b)II.

- J. Alterations to existing outdoor lighting systems ~~that for any lighting application increase the connected lighting load or replace more than 50 percent of the luminaires shall meet the requirements of Section 147; and shall meet the following requirements, as applicable:~~
- i. Alterations that increase the connected lighting load in a lighting application listed in Tables 140.7-A or 140.7-B shall meet the applicable requirements of Section 140.7; and
 - ii. Alterations that replace 10 percent or more of the luminaires in a lighting application listed in Tables 140.7-A or 140.7-B, the altered luminaires in that application shall meet the applicable requirements of Sections 130.0, 130.2, 130.4; and
 - iii. Alterations that replace more than 50 percent of the luminaires in a lighting application listed in Tables 140.7-A or 140.7-B, the lighting in that application shall meet the applicable requirements of Section 140.7.
- K. Alterations to existing internally and externally illuminated signs that increase the connected lighting load, replace and rewire more than 50 percent of the ballasts, or relocate the sign to a different location on the same site or on a different site shall meet the requirements of Section ~~140.8; and~~
- NOTE: Replacement of parts of an existing sign, including replacing lamps, the sign face or ballasts, that do not require rewiring or that are done at a time other than when the sign is relocated, is not an alteration subject to the requirements of Section ~~140.9141.0(b)1K.~~
- L. New service water-heating systems shall meet the requirements of Section ~~140.5.~~
- M. A building shell for which interior walls or ceilings are installed for the first time shall meet the requirements of Section ~~140.3(c);~~

2. Performance approach.

- A. The altered envelope, spacing conditioning, lighting and water heating components, and any newly installed equipment serving the alteration, shall meet the applicable requirements of ~~Sections 110.0 through 120.6 and Sections 120.8 through 130.5~~~~Sections 110.0 through 139130.5;~~ and

EXCEPTION to Section 141.0(b)2A: When the existing building does not have a solar zone, the requirements of Section 110.10 need not be met.

- B. ~~The standard design energy use (standard design) for the altered component shall be based on the requirements in subsections i through viii below: When the altered components do not meet the requirements specified in the sections that are stated in subsections i through viii, the standard design energy use (standard design) standard energy budget (energy budget) shall be based on the requirements stated in those sections as follows:~~
- i. Roof/Ceiling Insulation. The ~~standard design energy budget~~ shall be based on the requirements of ~~TABLE 140.3-A~~~~TABLE 143-A~~, ~~TABLE 140.3-B~~~~TABLE 143-B~~, and TABLE 140.3-C.
 - ii. Roofing Products. The ~~standard design energy budget~~ shall be based on the requirements of Section ~~149141.0(b)1B.~~
 - iii. Wall Insulation. The ~~standard design energy budget~~ shall be based on the requirements of TABLE~~140.3-A~~, TABLE 140.3-B, and TABLE 140.3-C.
 - iv. Floor/Soffit Insulation. The ~~standard design energy budget~~ shall be based on the requirements of TABLE~~140.3-A~~, TABLE 140.3-B, and TABLE 140.3-C.
 - v. Fenestration. The ~~standard building design energy budget~~ shall be based on the U-factor and SHGC value requirements of ~~Table 140.3-A, Table 140.3-B and Table 140.3-C~~

~~Error! Reference source not found:TABLE143 A, Error! Reference source not found:TABLE 143 B, and Error! Reference source not found:TABLE 143 C.~~ The allowed glass area shall be the smaller of the subsections a and b below:

- a. The proposed glass area
 - b. The larger of:
 1. The existing glass area; or
 2. The area allowed in Section 140.3(a)5A.
 - vi. Space-Conditioning Equipment and Ducts. The ~~standard design energy budget~~ shall be based on the requirements of Sections ~~149141.0(b)1C, 149141.0(b)1Di or Section 149141.0(b)1Dii~~ , and Section ~~149141.0(b)1E~~.
 - vii. Service Water Heating Systems. The ~~standard design energy budget~~ shall be based on requirements of Section 140.5.
 - viii. Lighting. The ~~standard design energy budget~~ shall be based on the requirements of Sections ~~149141.0(b)1F and 149141.0(b)1I~~.
- C. When the altered components meet the requirements specified in the sections that are stated in Section ~~149141.0(b)2B~~, subsections i through viii, the ~~standard design standard energy budget~~ shall be based on existing conditions.

NOTES TO SECTION ~~149141.0(b)2~~:

- A. If an existing component must be replaced with a new component, that component is considered an altered component for the purpose of determining the energy budget and must meet the requirements of Section ~~149141.0(b)2~~.
- B. The proposed design shall be based on the actual values of the altered components.
- C. The standard design shall assume the same geometry and orientation as the proposed design.
- D. The performance approach of Section ~~149141.0(b)2~~ may not be used when Exception 1 or 2 to Section ~~149141.0(b)1Biv~~ are used.

EXCEPTION 1 to Section ~~149141.0 (b)~~: When heating, cooling or service water heating for an alteration are provided by expanding existing systems, the existing systems and equipment need not comply with Sections 110 through 120.9 and Section 140.4 or 140.5.

EXCEPTION 2 to Section ~~149141.0 (b)~~: When existing heating, cooling or service water heating systems or components are moved within a building, the existing systems or components need not comply with Sections 110.0 through 120.9 and Section 140.4 or 140.5.

EXCEPTION 3 to Section ~~149141.0 (b)~~: Where an existing system with electric reheat is expanded when adding variable air volume (VAV) boxes to serve an alteration, total electric reheat capacity may be expanded not to exceed 20 percent of the existing installed electric capacity in any one permit and the system need not comply with Section 140.4(g). Additional electric reheat capacity in excess of 20 percent may be added subject to the requirements of the Section 140.4(g).

Note: Relocation or moving of a relocatable public school building is not considered an alteration for the purposes of complying with Title 24, Part 6. If an alteration is made to envelope, space conditioning, lighting or water heating components of a relocatable public school building, the alteration is subject to Section ~~149141.0 (b)~~.

(c) ~~Repairs. Repairs shall not increase the preexisting energy consumption of the repaired component, system, or equipment.~~

~~(d)~~ Alternate Method of Compliance. Any addition, alteration, or repair may comply with the requirements of Title 24, Part 6 by meeting the applicable requirements for the entire building.

Table 141.0-C Requirements for Luminaire Alterations

<p>Luminaire Alterations, in accordance with Section 141.0(b)11(i), shall meet the requirements of this table, as follows:</p> <p>1. Any single room where greater than 10 percent of the general lighting is part of a Luminaire Alteration shall meet the requirements for general lighting luminaire alterations.</p> <p>2. Any single room where any task, display, or special effects lighting are part of a Luminaire Alteration shall meet the requirements for the altered task, display, or special effects lighting system in that room.</p> <p>3. Any single room where the lighting power for general lighting, task lighting, display lighting, or special effects is increased shall meet the applicable requirements for that altered lighting system.</p>			
<u>Application</u>	<u>Allowed Lighting Power Density per room</u>	<u>Lighting Control Requirements</u>	
		<u>Switching and Automatic Shutoff Requirements</u>	<u>Multi-level lighting control requirements</u>
<u>Building sum total < 40 Luminaire Alterations for General Lighting</u>	<u>85% of applicable general lighting in the Area Category Method</u>	<u>Existing controls permitted</u> Existing Controls OK	<u>Existing controls permitted</u> Existing Controls OK
	<u>100% of applicable general lighting according to Section 140.6</u>	<u>§130.1(a), (c)</u>	<u>Existing controls permitted</u>
<u>Building sum total ≥ 40 Luminaire Alterations for General Lighting</u>	<u>85% of applicable general lighting in the Area Category Method</u>	<u>§130.1(a), (c)</u>	<u>Two level lighting control ¹</u>
	<u>100% of applicable general lighting according to Section 140.6</u>	<u>§130.1(a), (c), (d), (e) 130.4</u>	<u>§130.1(b)</u>
<u>Task, display, special effects lighting ²</u>	<u>100% of applicable task, display, special effects, according to Section 140.6</u>	<u>§130.1(a), (c)</u>	<u>N/A</u>
<p>1. <u>Two level lighting control shall have at least one control step between 30 and 70% of design lighting power in a manner providing reasonably uniform illuminations</u></p> <p>2. <u>Task, display, special effects lighting includes lighting for specialized task work, ornamental, precision, accent, display, decorative, and white boards and chalk boards, in accordance with the Area Category Method; and lighting for wall display, floor display, and ornamental/special effects in accordance with the Tailored Method</u></p>			

Table 141.0-D Requirements for Luminaire Modifications-in-Place

Luminaire Modifications-in-Place, in accordance with Section 141.0(b)11(ii), shall meet the requirements of this table, as follows:

1. Any single room where greater than 10 percent of the general lighting is part of a Luminaire Modification-in-Place shall meet the requirements for general lighting luminaire alterations.
2. Any single room where any task, display, or special effects lighting are part of a Luminaire Modification-in-Place shall meet the applicable requirements for the altered task, display, or special effects lighting in that room.

For compliance with this Table, building space is defined as any of the following:

1. A complete single story building
2. A complete floor of a multi floor building
3. The entire space in a building of a single tenant under a single lease
4. All of the common, not leasable space in single building

<u>Application</u>	<u>Maximum number and percentage of luminaires Per Building Space</u>	<u>Allowed Lighting Power Density Per Altered Room</u>	<u>Lighting Control Requirements</u>	
			<u>Switching and Automatic Shutoff Requirements</u>	<u>Multi-level lighting control requirements</u>
<u>General Lighting</u>	<u>≤ 40 each, or 10%, whichever is greater</u>	<u>85% of applicable general lighting Area Category Method</u>	<u>Existing controls permitted</u>	<u>Existing controls permitted</u>
		<u>100% of applicable general lighting Area Category Method</u>	<u>§130.1(a), (c), (d) 130.4</u>	<u>Two level lighting control ¹</u>
	<u>> 40 each, or > 10% whichever is greater</u>	<u>85% of applicable general lighting Area Category Method</u>	<u>§130.1(a), (c)</u>	<u>Two level lighting control ¹</u>
		<u>100% of applicable general lighting Area Category Method</u>	<u>§130.1(a), (c), (d) 130.4</u>	<u>§130.1(b)</u>
<u>Task, display, special effects lighting ²</u>	<u>Any</u>	<u>100% of applicable task, display, special effects, according to Section 140.6</u>	<u>§130.1(a), (c)</u>	<u>N/A</u>

1. Two level lighting control shall have at least one control step between 30 and 70% of design lighting power in a manner providing reasonably uniform illuminations

2. Task, display, special effects lighting includes lighting for specialized task work, ornamental, precision, accent, display, decorative, and white boards and chalk boards, in accordance with the Area Category Method; and lighting for wall display, floor display, and ornamental/special effects in accordance with the Tailored Method