
 Prescriptive Requirements					 Performance Compliance Option		
Alterations to Skylights ^A	Skylight to Roof Ratio ≤0.05 §140.3(a)6A		Minimum Skylit Daylit Area §140.3(c) ^F	VT §140.3(a)6D	SHGC §140.3(a)6C	U-factor §140.3(a)6B	Window Film NA7.4.2 ^G	Dynamic Glazing NA7.4.3 ^J
Add skylight > 50ft ²	YES ^{D,E}		no	YES ^E	YES ^E	YES ^E	YES	YES
Add skylight ≤ 50ft ²	YES ^{D,E}		no	no	no	YES ^E	YES	YES
Alter Existing Skylight ^A	no		no	YES ^{E, G}	YES ^{E, G}	YES ^E	YES	YES
Alterations to Vertical Window ^{A, B}	Window Wall Ratio ≤0.40 §140.3(a)5A		Minimum Skylit Daylit Area §140.3(c)	VT §140.3(a)5D	SHGC §141.0(b)2A	U-factor §141.0(b)2A	Window Film NA7.4.2 ^G	Dynamic Glazing NA7.4.3 ^J
Add Vertical Window ≤ 50ft ²	YES		no	no	no	YES ^E	YES	YES
Add Vertical Window > 50ft ²	YES		no	YES ^E	YES ^E	YES ^E	YES	YES
Replace Vertical Window ≤ 150ft ²	no		no	no	no	YES ^H	YES	YES
Replace Vertical Window > 150ft ^{2B}	no		no	YES ^E	YES ^H	YES ^H	YES	YES
Alter Existing Vertical Window ^C	no		no	no	no	no	YES	YES
New Fenestration including Skylights ^B	Window Wall Ratio ≤0.40 §140.3(a)5A	Skylight to Roof Ratio ≤0.05 §140.3(a)6A	Minimum Skylit Daylit Area §140.3(c)	VT §140.3(a)5D §140.3(a)6D	SHGC §140.3(a)5C §140.3(a)6C	U-factor §140.3(a)5B §140.3(a)6B	Window Film NA7.4.2 ^G	Dynamic Glazing NA7.4.3 ^J
New Construction	YES	YES	YES'	YES'	YES	YES	YES	YES

A Fenestration alterations may also trigger Mandatory lighting control requirements from [Section 130.1\(d\)](#).

B In an alteration, where ≤150ft² of the entire building's vertical fenestration is replaced, RSHGC and VT requirements of [Table 141.0-A](#) do not apply.

C Replacement of fenestration, where existing fenestration area in an existing wall or roof is replaced with a new manufactured fenestration product and up to the total fenestration area removed in the existing wall or roof.

D Atria over 55ft high are limited to a maximum 0.10 skylight to roof ratio.

E See [§141.0\(b\)2A](#) for reference to [Table 140.3-B](#), [C](#) or [D](#).

F The minimum skylit daylit area requirement applies to Climate Zones 2-15, for roofs directly over spaces >5,000ft² with a ceiling height of at least 15ft and interior LPD of at least 0.5 W/ft².

G Window Films are applicable for use in altered fenestration in existing buildings and must be modeled under the Performance approach to receive Performance SHGC credit and must meet the criteria of [NA7.4.2](#).

H See [Table 141.0-A](#) for efficiency values.

I Vertical windows must meet either minimum VT requirements of [Table 140.3-B](#) or [140.3-C](#), or have a $VT \geq 0.11/WWR$, where WWR is the minimum of the building window wall ratio and 0.40.

J Dynamic Glazing must use automatic controls and must meet the criteria in [NA7.4.3](#).

For More Information

Primary Documents

- Energy Code Section 140.3 – Prescriptive Requirements for Building Envelopes:
energycodeace.com/site/custom/public/reference-ace-2019/Documents/section1403prescriptiverequirementsforbuildingenvelopes.htm
- Energy Code Section 141.0(b) – Additions, Alterations & Repairs to Existing Nonresidential, High-Rise Residential & Hotel/Motel Buildings, and to Existing Outdoor Lighting, and to Internally and Externally Illuminated Signs – Alterations:
energycodeace.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1410additionsalterationsrepairstoexistingnonresidentialhi.htm#balterations.htm
- Energy Code Nonresidential Reference Appendix NA 7.4 – Installation and Acceptance Requirements for Nonresidential Buildings and Covered Processes - Building Envelope Acceptance Tests:
energycodeace.com/site/custom/public/reference-ace-2019/Documents/na74buildingenvelopeacceptancetests.htm
- Energy Code Nonresidential Compliance Manual Section 3.2 – Opaque Envelope Assembly:
energycodeace.com/site/custom/public/reference-ace-2019/Documents/32opaqueenvelopeassembly.htm

California Energy Commission Information & Services

- Energy Code Hotline: 1-800-772-3300 (Free) or Title24@energy.ca.gov
- Online Resource Center:
www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/online-resource-center/
 - The Energy Commission’s main web portal for the Energy Code, including information, documents and historical information

Additional Resources

- National Fenestration Rating Council (NFRC):
nfr.org/
- Component Modeling Approach (CMA):
nfr.org/CMA/default.aspx
 - To help select windows with the desired energy performance for institutional projects
- Energy Code Ace:
EnergyCodeAce.com
 - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.
 - Of special interest:*
 - Fact Sheets
energycodeace.com/content/resources-fact-sheets/
 - Nonresidential Fenestration 2019
 - Application Guides
energycodeace.com/content/resources-ace/file_type=application-guide
 - Nonresidential Envelope and Solar Ready 2019

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