



2016

BUILDING ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS

FOR THE 2016 BUILDING
ENERGY EFFICIENCY
STANDARDS

TITLE 24, PART 6, AND ASSOCIATED
ADMINISTRATIVE REGULATIONS
IN PART 1.



JUNE 2015
CEC-400-2015-037-CMF

CALIFORNIA ENERGY COMMISSION
Edmund G. Brown Jr., Governor

SECTION 110.6 – MANDATORY REQUIREMENTS FOR FENESTRATION PRODUCTS AND EXTERIOR DOORS

(a) **Certification of Fenestration Products and Exterior Doors other than Field-fabricated.** Any fenestration product and exterior door, other than field-fabricated fenestration products and field-fabricated exterior doors, may be installed only if the manufacturer has certified to the Commission, or if an independent certifying organization approved by the Commission has certified that the product complies with all of the applicable requirements of this subsection.

1. **Air leakage.** 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 door area for residential doors, 0.3 cfm/ft² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft² for nonresidential double doors (swinging), when tested according to NFRC-400 or ASTM E283 at a pressure differential of 75 pascals (or 1.57 pounds/ft²), incorporated herein by reference.

NOTES TO SECTION 110.6(a)1:

1. Pet doors must meet 0.3 cfm/ft² when tested according to ASTM E283 at 75 pascals (or 1.57 pounds/ft²).
 2. AAMA/WDMA/CSA 101/I.S.2/A440-2011 specification is equivalent to ASTM E283 at a pressure differential of 75 pascals (or 1.57 pounds/ft²) satisfies the air leakage certification requirements of this section.
2. **U-factor.** The fenestration product's U-factor shall be rated in accordance with NFRC 100, or use the applicable default U-factor set forth in TABLE 110.6-A.
- EXCEPTION 1 to Section 110.6(a)2:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default U-factor may be calculated as set forth in Reference Nonresidential Appendix NA6.
- EXCEPTION 2 to Section 110.6(a)2:** If the fenestration product is an alteration consisting of any area replacement of glass in a skylight product or in a vertical site-built fenestration product, in a building covered by the nonresidential standards, the default U-factor may be calculated as set forth in Reference Nonresidential Appendix NA6.
3. **Solar Heat Gain Coefficient (SHGC).** The fenestration product's SHGC shall be rated in accordance with NFRC 200, or use the applicable default SHGC set forth in TABLE 110.6-B.
- EXCEPTION 1 to Section 110.6(a)3:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default SHGC may be calculated as set forth in Reference Nonresidential Appendix NA6.
- EXCEPTION 2 to Section 110.6(a)3:** If the fenestration product is an alteration consisting of any area replacement of glass in a skylight product or in a vertical site-built fenestration product, in a building covered by the nonresidential standards, the default SHGC may be calculated as set forth in Reference Nonresidential Appendix NA6.
4. **Visible Transmittance (VT).** The fenestration product's VT shall be rated in accordance with NFRC 200 or ASTM E972, for tubular skylights VT shall be rated using NFRC 203.
- EXCEPTION 1 to Section 110.6(a)4:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default VT may be calculated as set forth in Reference Nonresidential Appendix NA6.

Fenestration Acceptance Certificate

Project Name/Address:	
System Name or Identification/Tag:	System Location or Area Served:

Climate Zone:	Enforcement Agency Use: Checked by/Date
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Note: The Enforcement Agency may optionally verify any Fenestration being installed for authenticity by accessing <http://cmast.nfrc.org/Project/CertificateFind.aspx> for NFRC CMAST Certificate Labels or NFRC Certificate Labels <http://search.nfrc.org/search/searchDefault.aspx>. See Reference Nonresidential Appendix NA7 for additional information.

BUILDING INFORMATION

BUILDING TYPE:	<input type="checkbox"/> Low-rise Nonresidential	<input type="checkbox"/> Low-rise Schools	<input type="checkbox"/> High Rise Residential	<input type="checkbox"/> Hotel/Motel Guest Room		
PHASE OF CONSTRUCTION:	<input type="checkbox"/> New Building Construction		<input type="checkbox"/> Addition	<input type="checkbox"/> Alteration		
TYPE OF LABEL CERTIFICATE:	<input type="checkbox"/> Rated NFRC Component Modeling Approach (CMA) Label Certificate or NFRC Certified Label		<input type="checkbox"/> FC-1 for Nonrated Fenestration Values < 1,000 ft ²	<input type="checkbox"/> FC-1 for Nonrated Fenestration Values ≥ 1,000 ft ²		
TYPE OF INSTALLED FENESTRATION:	<input type="checkbox"/> Vertical Fenestration	<input type="checkbox"/> Tubular Daylighting Device (TDD)	<input type="checkbox"/> Skylight	<input type="checkbox"/> Dynamic Glazing	<input type="checkbox"/> Window Film	<input type="checkbox"/> Block Glass

STATEMENT OF ACCEPTANCE

This Certificate of Acceptance summarizes the results of the Acceptance test as specified in the Reference Nonresidential Appendix, NA7.4. Additional related references are in Sections §10-103(a)4, §10-111, §116(a)5 of the Energy Efficiency Standards.

SUMMARY OF FENESTRATION VERIFICATION AND INSPECTION BY RESPONSIBLE PARTY

Individuals who perform the field testing and verification work, and provide the information required for completion of the Certificate of Acceptance documentation are not required to be licensed professionals. However, the person who signs the Certificate of Acceptance document to certify compliance with the acceptance requirements shall be licensed as specified in Standards Section 10-103(a)4 and NA7.3.1.

The Responsible Person or Party shall verify the thermal performance (U-factor, SHGC and VT) of each specified fenestration product being installed matches the fenestration the NFRC Label Certificate, the CEC energy compliance documentation and building plans. Note: A maximum of 4 NFRC Product Listings for each Certificate of Acceptance.

For NFRC Rated Product (If more than 8 fenestration products use additional sheets)

<i>If Product is rated by NFRC then enter the ID # in each column. This includes any of the types of installed fenestration listed above.</i>	1	2	3	4
	NFRC Label Certificate ID #	NFRC Label Certificate ID #	NFRC Label Certificate ID #	NFRC Label Certificate ID #
	5	6	7	8
	NFRC Label Certificate ID #	NFRC Label Certificate ID #	NFRC Label Certificate ID #	NFRC Label Certificate ID #

For All Fenestration: Verify and Cross Reference:

	1	2	3	4
<i>If receipts or orders are available and it identifies the NFRC ID# then cross reference against the NFRC Label Certificate to match ID#s; or</i>	<input type="checkbox"/> Delivery Receipt(s) <input type="checkbox"/> Purchase Order or <input type="checkbox"/> Detailed Receipt	<input type="checkbox"/> Delivery Receipt(s) <input type="checkbox"/> Purchase Order or <input type="checkbox"/> Detailed Receipt	<input type="checkbox"/> Delivery Receipt(s) <input type="checkbox"/> Purchase Order or <input type="checkbox"/> Detailed Receipt	<input type="checkbox"/> Delivery Receipt(s) <input type="checkbox"/> Purchase Order or <input type="checkbox"/> Detailed Receipt
<i>Cross reference the efficiencies listed on the NFRC Label Certificate of FC-1 matches the building plans window schedule of efficiencies.</i>	<input type="checkbox"/> Cross Reference and Matches Building Plans	<input type="checkbox"/> Cross Reference and Matches Building Plans	<input type="checkbox"/> Cross Reference and Matches Building Plans	<input type="checkbox"/> Cross Reference and Matches Building Plans

Fenestration Acceptance Certificate

Project Name/Address:

System Name or Identification/Tag:

System Location or Area Served:

FIELD TECHNICIAN'S DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am the person who performed the acceptance requirements verification reported on this Certificate of Acceptance (Field Technician).
- I certify that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
- I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building.

Company Name:

Field Technician's Name:

Field Technician's Signature:

Date Signed:

Position With Company (Title):

RESPONSIBLE PERSON'S DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, that I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this form.
- I am a licensed contractor, architect, or engineer, who is eligible under Division 3 of the Business and Professions Code, in the applicable classification, to take responsibility for the scope of work specified on this document and attest to the declarations in this statement (responsible person).
- I certify that the information provided on this form substantiates that the construction/installation identified on this form complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
- I have confirmed that the Installation Certificate(s) for the construction/installation identified on this form has been completed and is posted or made available with the building permit(s) issued for the building.
- I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.

Company Name:

Phone:

Responsible Person's Name:

Responsible Person's Signature:

License:

Date Signed:

Position With Company (Title):

Documentation Author's Declaration Statement

- **I certify that this Certificate of Acceptance documentation is accurate and complete.**

Name:

Signature:

Company:

Date:

Address:

If Applicable
 CEA or
 CEPE (Certification #):

City/State/Zip:

Phone: