

**Insulated Line (US & Intl. Pat. System)**

**bp** - Glass Garage Doors "Fully Insulated Frame Technology" (US & Intl. Patented) is the key factor for eliminating air leakage, when using this type of door to seal the building envelope, or enclose any "climate controlled space". What is the point in having insulated glass panels, if the frame leaks Air or Water? Our Insulated Frame System also enhances acoustical performance: STC = 36±

**bp - Insulated Line** glazing options consists of: **bp** insulated frames with 1/2" Air filled IG units. Each glass panel is sealed during fabrication and are available in: transparent, obscured, with or without low-E glass, and in a variety of colors to suit your design. Every glass type has a unique set of energy ratings: U-Values of ±.22-.99, SHGC of ±.15-.45, and VT 0.02-.46; which is determined by the glass specified on the project; to match adjacent materials.

→ (Keep in mind that IG units (Insulated Glass) are ineffective if the frame leaks air!)

The NFRC Certified Air Resistance Package provides an airtight system for any wall opening (24ft wide max); where building code compliance is required. **bp** doors have been tested and certified as a whole, with "Insulated Frames". Testing reports and CPD #'s (Certified Products Database) for various glass types can be found at: [www.NFRC.org](http://www.NFRC.org)



Note: --> The "bp - Water Resistant Option" Per ASTM E331 & E547 [SOLD SEPARATELY], must be combined with the "bp - Air Infiltration Option" to function as tested; and **CAN NOT BE INSTALLED AFTERWARDS!**

Note: Doors or Windows without Certified "NFRC" labels = FALSE ADVERTISING, are ILLEGAL PER ENERGY CODE, and will Leak Air through the Frame System! Insulated Glass Alone **WILL NOT** make a Door or Window Insulated, Unless a **bp - Insulated Frame System** is also integrated! (US & Intl. Pat)



**24ft width max. x 16ft height max.**

→

Air Leakage Resistance Package*	
Air Leakage Resistance Results (Per NFRC 400 / ASTM E283 / DASMA 105)	
Residential Standard	0.3 CFM
Commercial Standard	0.4 CFM
<b>bp - Glass Garage Doors results</b>	<b>0.06 CFM</b>

\*Note: The lower the CFM = Better Air Leakage Resistance. Thermal ratings for U- factor, SHGC, and VT available upon request, per NFRC 100 / 200.

- Air Infiltration package is available in combination with any type of glazing.





# Glass Garage Doors & Entry Systems, Inc.

FACTORY DIRECT – WORLD WIDE SHIPPING

## **Understanding How A “ Glass Garage Door ” Meets The Energy Code**

Be mindful of the misconception; that installing any door with “Insulated Glass” makes it code compliant... ***In Fact... It Does NOT!*** *If you can't keep “Air” or Water from leaking in or out of a frame, what's the point? Fenestration products must be tested “as a whole system” vs. relying on the data of glass or glazing panels alone... These test results must be certified by an independent third party such as “AAMA”, and adhere to a rigorous quality assurance procedure. Proof is provided by “NFRC” Labels. Anything else, is false advertising!*

**IECC - (INTERNATIONAL ENERGY CONSERVATION CODE)** Where the IECC energy code applies to sealing the building envelope, or HVAC spaces, only the “bp - Glass Garage Door” (US & Intl. Pat.) can comply with IECC.C402.4.3 Maximum Air Infiltration Rate for Fenestration Assemblies of 0.40 CFM/SQ.FT. (at 1.57 PSF [25 MPH]). Currently, no other manufacturer of aluminum and glass sectional doors can comply with the air infiltration requirements of IECC; without infringing on our Patent Rights. bp - Glass Garage Doors are NFRC rated, and can provide required labeling for US & Intl. code compliance. This proves to all building officials, plan checkers, inspectors, and energy analyst; that our product complies with the New Energy Code.

**bp - Glass Garage Doors & Entry Systems, Inc.** is THE ONLY OEM Manufacturer of Glass Garage Doors that is Licensed by the NFRC, with certified results; for air leakage resistance (NFRC-400), and U-factors (NFRC-100). These results comply with the General Notes of the building plan requirements, and meet the adopted code. You can find these results along with certified ratings for U-factor, SHGC, and VT in the “Certified Products Database” (CPD) on the NFRC website - [www.nfrc.org](http://www.nfrc.org). We can also provide certified testing results from our Architectural Testing Lab, if needed. Be prepared to show your Building Inspector / Plan Checker, that a compliant building product is being used to seal the building envelope! [www.GlassGarageDoors.com](http://www.GlassGarageDoors.com)

Energy efficiency and conservation; (from California’s “Title 24”, “ASHRAE” - American Society of Heating, Refrigerating and Air-Conditioning Engineers, to the World Wide “IECC” Energy Code) are major key issues affecting the design and construction industry today. We want to educate, and make sure that the final Building Materials actually meet code. The requirements for enclosing the building envelope are dictated by the IECC & NFRC, which are the governing bodies mandating an energy efficient shell. Openings that require certified Air Infiltration Rated Products to be easily identified by the following Examples:

1. Any door and/or window that is **“enclosing the building’s envelope”** must comply with the applicable building code requirements and energy efficiency standards. **Examples:** If you ever find a glass garage door in an Office, Storefront, Commercial Space, Restaurant or Patio, Work Shop, Bar Top, Living Rm., or Loft Space, they must have certified air leakage resistance ratings. Another would be **any space that has an HVAC system in place, and a Glass Garage Door is sealing the Exterior Building Envelope.**
2. A temporary label (for inspection purposes; with certified results ) demonstrates compliance to the building inspector or enforcement agency. Below is a sample of **bp – Glass Garage Doors & Entry Systems** temporary label, for your reference. A permanent label is also required. **Permanent labels are issued for Certified Products directly from the NFRC Licensing Agreement, and placed on the bottom interior of the building product. So, if there is no label, the product does not comply.**

We would like to make sure that the Stated Building Code requirements; adopted by your City, are being understood by your Building Inspectors. We wish to assist you in complying with inspectors; in that effort. Below is a copy of the Code section which Building Inspectors should be aware of. We hope this helps educate.



# Glass Garage Doors & Entry Systems, Inc.

FACTORY DIRECT – WORLD WIDE SHIPPING

**NOTE: The IECC – Energy Code “PRESCRIPTIVE” or “PERFORMANCE” approach can be used to manipulate the energy load for a Residential or Non-Residential structure; regarding U-Factors, SHGC, & VT, however, there is NO EXEMPTION for “MANDATORY REQUIREMENTS” REGARDING FENESTRATION PRODUCTS AND EXTERIOR DOORS; such as “AIR INFILTRATION”!**

## CA 2016 Building Energy Code Efficiency Standards Sec 110.6 Mandatory Requirements for Fenestration and Exterior Doors

**Section 110.6 -1 (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.


- **Air infiltration / leakage.** Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft<sup>2</sup> of window area, 0.3 cfm/ft<sup>2</sup> of door area for residential doors, 0.3 cfm/ft<sup>2</sup> of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft<sup>2</sup> for nonresidential double doors (swinging), when tested according to NFRC-400 or ASTM E 283 at a pressure differential of 75 pascals (or 1.57 pounds/ft<sup>2</sup>), incorporated herein by reference.
- **Labeling Requirements** Fenestration products shall:
- Have a **temporary label** (or label certificate for site-built fenestration) meeting the requirements of Section 10-111(a) 1, not to be removed before inspection by the enforcement agency, listing the certified U-factor and SHGC, and certifying that the air leakage requirements of Section 116(a)1 are met for each product line; and
- Have a **permanent label** (or label certificate for site-built fenestration) meeting the requirements of Section 10-111(a) 2 if the product is rated using NFRC procedures.

Respectfully,

**bp** - Glass Garage Doors & Entry Systems, Inc.  
TF: 877-442-1716  
Web: www. GlassGarageDoors.com

**Sample: Temporary Label for Inspection: →**

**This label must appear on each unit for Inspector to verify a system meets code! →**

 <p>NFRC National Fenestration Rating Council® CERTIFIED</p>	<p><b>bp - Glass Garage Doors &amp; Entry Systems, Inc.</b> Aluminum Frame Models: BP-350/ BP-450 HD / BP-550 SHD Product Type: Aluminum and Glass Sectional Overhead Door</p>
<b>ENERGY PERFORMANCE RATINGS</b>	
<p><b>U-Factor</b> (Thermal Transmittance)</p>	<p><b>(SHGC) Solar Heat Gain Coefficient</b></p>
<p><b>.56</b> (U.S./I-P)</p>	<p><b>.25</b></p>
<b>ADDITIONAL PERFORMANCE RATINGS</b>	
<p><b>(VT) Visible Transmittance</b></p>	<p><b>Air Leakage</b></p>
<p><b>0.11 - 0.40</b> <b>Varies on Glass</b></p>	<p><b>0.3</b> (U.S./I-P)</p>
<p>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</p>	

# bp - GLASS GARAGE DOORS & ENTRY SYSTEMS

## INSULATED GLASS UNIT PERFORMANCE DATA

NFRC	BP 350 - BPC-A-1-00211-00002	<u>Notes</u>
CPD#	BP 450 HD - BPC-A-1-00213-00001	_____
	BP 550 SHD - BPC-A-1-00215-00001	_____
<u>ID #</u>		_____
Outboard Lite: <b>5281</b>	1/8" PPG Solarban 60 Clear Low-E	a
Krypton Space:	1/4" Spacer, (Krypton Filled)	
Inboard Lite: <b>5009</b>	1/8" Clear (same data as 1/8" Matte Glass)	a
Overall Nominal Thickness: <b>0.508 Inches</b>		f

<u>Performance Properties</u>	<u>COG Results*</u>	<u>Units</u>
Transmittance		
Visible Light	72	%
Solar Energy	35	%
Ultraviolet	21	%
Reflectance		
Visible Light (Exterior)	11	%
Visible Light (Interior)	13	%
Solar Energy (Exterior)	35	%
Thermal		
<i>Winter Nighttime</i>		
U-factor/U-Value	0.22	Btu/hr-ft2 -oF
<i>Summer Daytime</i>		
U-factor/U-Value	0.23	Btu/hr-ft2 -oF
Shading Coefficient	0.46	-
Solar Heat Gain Coefficient	0.40	-
Light to Solar Gain	1.85	-

**\*Vertically Glazed Center Of Glass (COG) Results Calculated Using LBNL Window 5.2 Software.**

- Notes:** a) NFRC certified spectral data file  
 b) Data generated by LBNL Optics 5.1  
 c) Average solar data  
 d) Simulated with LBNL Optics 5.1  
 e) Vendor supplied spectral data file  
 f) Please reference ASTM C1036 and C1172 for allowable glass thickness variations



# NFRC Product Certification Authorization Report

**Manufacturer:** BP - Glass Garage Doors & Entry Systems    **Product Series:** BP-350 / BP-450 / BP-550 Glass Garage Door  
**Street:** 1511 W. 2nd St.    **Product Type:** VAGD  
**City/State/Zip:** POMONA, CA 91766    **Air Leakage:** NFRC Certification: .3cfm (Actual Results: .06cfm)

CPD Number: BPC-A-1

IA: American Architectural Manufacturers Association

CPD #	U-factor	SHGC	VT	Condensation Resistance	Air Leakage
BPC-A-1-00211-00002	.52	.25	.40		.3cfm

Close

Group ID	Manufacturer Product Code	Frame/Sash Type	Glazing Layers	Low-E	Gap Widths	Spacer	Gap Fill	Grid	Divider	Tint
1	BP-350 Glass: SB60 / Krypton / Clear (DS) 1/2"	AL/AL	2	0.035(2)	0.25	A1-D	Fill 1: KRY/AIR(90/10)	N	-	CL

CPD #	U-factor	SHGC	VT	Condensation Resistance	Air Leakage
BPC-A-1-00213-00001	.56	.25	.40		.3cfm

Close

Group ID	Manufacturer Product Code	Frame/Sash Type	Glazing Layers	Low-E	Gap Widths	Spacer	Gap Fill	Grid	Divider	Tint
1	BP-450 Glass: SB60 / Krypton / Clear (DS) 1/2"	AL/AL	2	0.035(2)	0.25	A1-D	Fill 1: KRY/AIR(90/10)	N	-	CL

CPD #	U-factor	SHGC	VT	Condensation Resistance	Air Leakage
BPC-A-1-00215-00001	.58	.25	.40		.3cfm

Close

Group ID	Manufacturer Product Code	Frame/Sash Type	Glazing Layers	Low-E	Gap Widths	Spacer	Gap Fill	Grid	Divider	Tint
1	BP-550 Glass: SB60 / Krypton / Clear (DS) 1/2"	AL/AL	2	0.035(2)	0.25	A1-D	Fill 1: KRY/AIR(90/10)	N	-	CL

**bp - Water Resistant Package**



The Water Resistant Package has been tested in accordance with the following test methods:

- ❖ ASTM E331- Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2009.
- ❖ ASTM E547- Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference; 2009.

Note: The Water Resistant Package **must be combined** with the Air Resistant Package **DURING THE MANUFACTURING PROCESS** to function as tested! The Water Resistant Package **CAN NOT BE INSTALLED AFTERWARDS**, per the ASTM E331 or ASTM E547 testing standard.

Test Method E331 and E547			Title of Test Water Resistance			Results No Leakage	
Classification			DP	Pa	PSF	mph	" H <sub>2</sub> O
Res.	Lite Com.	Com.	30	220	4.59	42	0.88"

**24ft width max. x 16ft height max.**





# 2016

ALL INFORMATION PROVIDED IS BASED ON THE "IECC"  
"INTERNATIONAL ENERGY CONSERVATION CODE" WHICH  
HAS BEEN ADOPTED BY THE ENTIRE UNITED STATES

## 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

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## 10-103 – PERMIT, CERTIFICATE, INFORMATIONAL, AND ENFORCEMENT REQUIREMENTS FOR DESIGNERS, INSTALLERS, BUILDERS, MANUFACTURERS, AND SUPPLIERS

- (a) **Documentation.** The following documentation is required to demonstrate compliance with Part 6. This documentation shall meet the requirements of Section 10-103(a) or alternatives approved by the Executive Director.
1. **Certificate of Compliance.** For all buildings, the **Certificate of Compliance** described in Section 10-103 shall be signed by the person who is eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design (*responsible person*); and submitted in accordance with Sections 10-103(a)1 and 10-103(a)2 to certify conformance with Part 6. If more than one person has responsibility for the 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 the 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** documents (*documentation authors*) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete. In accordance with applicable requirements of 10-103(a)1, the signatures provided by *responsible persons* and *documentation authors* shall be original signatures on paper documents or electronic signatures on electronic documents conforming to the electronic signature specifications in Reference Joint Appendix JA7.

For all Nonresidential buildings, the Design Review Kickoff **Certificate(s) of Compliance** and the Construction Document Design Review Checklist **Certificate(s) of Compliance** shall be reviewed and signed by a licensed professional engineer or licensed architect, or a licensed contractor representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code. For buildings less than 10,000 square feet, this signer may be the engineer or architect of record. For buildings greater than 10,000 square feet but less than 50,000 square feet, this signer shall be a qualified in-house engineer or architect with no other project involvement or a third party engineer, architect, or contractor. For buildings greater than 50,000 square feet and all buildings with complex mechanical systems serving more than 10,000 square feet, this signer shall be a third party engineer, architect, or contractor.

- A. **All Certificate of Compliance documentation shall conform to a format and informational order and content approved by the Energy Commission.**

**These documents shall:**

  - i. Identify the energy features, performance specifications, materials, components, and **manufactured devices required for compliance with Part 6.**
  - ii. Identify the building project name and location. The building project name and location identification on the **Certificate of Compliance** shall be consistent with the building project name and location identification given on the other applicable building design plans and specifications submitted to the enforcement agency for approval with the building permit application.
  - iii. Display the unique registration number assigned by the data registry if Section 10-103(a)1 requires the document to be registered.
  - iv. Include a declaration statement to the effect that the building energy features, performance specifications, materials, components, and **manufactured devices** for the building design identified on the **Certificate of Compliance** indicate the building is in compliance with the requirements of **Title 24, Parts 1 and 6, and the building design features identified on the Certificate of Compliance are consistent with the building design features identified on the other applicable compliance**



documents, worksheets, calculations, plans, and specifications submitted to the enforcement agency for approval with the building permit application.

- v. Be signed by the *documentation author* to certify the documentation is accurate and complete. When document registration is required by Section 10-103(a)1, the signature shall be an electronic signature on an electronic document in accordance with the electronic signature specifications in Reference Joint Appendix JA7.
  - vi. Be signed by the *responsible person* eligible under Division 3 of the Business and Professions Code to accept responsibility for the design to certify conformance with Part 6. When document registration is required by Section 10-103(a)1, the signature shall be an electronic signature on an electronic document in accordance with the electronic signature specifications in Reference Joint Appendix JA7.
- B. For all low-rise residential buildings for which compliance requires HERS field verification, 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.

Contingent upon availability and approval of an electronic document repository by the Executive Director, **Certificate of Compliance documents** that are registered and retained by a HERS provider data registry shall also be automatically transmitted by the data registry, to an electronic document repository for retention in accordance with the specifications in Reference Joint Appendix JA7.

- C. For alterations to existing residential buildings for which HERS field verification is not required, including but not limited to water heater and window replacements, 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 not require any **Certificate of Compliance documentation**, or may develop simplified **Certificate of Compliance documentation** for demonstrating compliance with the Standards.

Exemptions from submitting compliance documentation shall not be deemed to grant authorization for any work to be done in any manner in violation of this code or other provisions of law.

- D. Contingent upon approval of data registry(s) by the Commission, all nonresidential buildings, high-rise residential buildings, and hotels and motels, when designated to allow use of an occupancy group or type regulated by Part 6 the person(s) responsible for the **Certificate(s) of Compliance** shall submit the Certificate(s) for registration and retention to a data registry approved by the Commission. The submittals to the approved data registry shall be made electronically in accordance with the specifications in Reference Joint Appendix JA7.

Contingent upon availability and approval of an electronic document repository by the Executive Director, **Certificate of Compliance documents** that are registered and retained by an approved data registry shall also be automatically transmitted by the data registry to an electronic document repository for retention in accordance with the specifications in Reference Joint Appendix JA7.

2. **Application for a building permit.** Each application for a building permit subject to Part 6 shall contain at least one copy of the documents specified in Sections 10-103(a)2A, 10-103(a)2B, and 10-103(a)2C.
- A. For all newly constructed buildings, additions, alterations, or repairs regulated by Part 6 the applicant shall submit the applicable **Certificate(s) of Compliance to the enforcement agency for approval. The certificate(s)** shall conform to the requirements of Section 10-103(a)1, and shall be approved by the local enforcement agency, in accordance with all applicable requirements of Section 10-103(d), by stamp or authorized signature prior to issuance of a building permit. A copy of the **Certificate(s) of Compliance shall be included with the documentation the builder provides to the building owner at occupancy as specified in Section 10-103(b).**

For alterations to existing residential buildings for which HERS field verification is 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, or made available for viewing on an approved data registry.

When the enforcement agency requires building design plans to be submitted with the application for a building permit, the applicable **Certificate of Compliance** documents shall be incorporated into the building design plans. When Section 10-103(a)1 requires document registration, the certificate(s) that are incorporated into the building design plans shall be copies of the registered **Certificate of Compliance** documents from a HERS provider data registry, or a data registry approved by the Commission.

- B. When the enforcement agency requires building design plans and specifications to be submitted with the application for a building permit, the plans shall conform to the specifications for the features, materials, components, and **manufactured devices identified on the Certificate(s) of Compliance**, and shall conform to all other applicable requirements of Part 6. Plans and specifications shall be submitted to the enforcement agency for any other feature, material, component, or **manufactured device** that Part 6 requires be indicated on the building design plans and specifications. Plans and specifications submitted with each application for a building permit for Nonresidential buildings, High-rise Residential buildings and Hotels and Motels shall provide acceptance requirements for code compliance of each feature, material, component or **manufactured device** when acceptance requirements are required under Part 6. Plans and specifications for Nonresidential buildings, High-rise Residential buildings and Hotels and Motels shall require, and indicate with a prominent note on the plans, that within 90 days after the Enforcement Agency issues a permanent final occupancy permit, record drawings be provided to the building owner.

For all buildings, if the specification for a building design feature, material, component, or **manufactured device** is changed before final construction or installation, such that the building may no longer comply with Part 6 the building must be brought back into compliance, and so indicated on amended plans, specifications, and **Certificate(s) of Compliance** that shall be submitted to the enforcement agency for approval. Such characteristics shall include the efficiency (or other characteristic regulated by Part 6) of each building design feature, material, component, or device.

- 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**, including but not limited to the electronic input file for the compliance software tool that was used to generate performance method **Certificate(s) of Compliance**; or any other supportive documentation that is necessary to demonstrate that the building design conforms to the requirements of Part 6.
3. **Certificate of Installation.** For all buildings, the person in charge of the construction or installation, who is eligible under Division 3 of the Business and Professions Code to accept responsibility for the construction or installation of features, materials, components, or **manufactured devices** regulated by Part 6 or the Appliance Efficiency Regulations (*responsible person*) shall sign and submit **Certificate of Installation documentation** as specified in Section 10-103(a)3 to certify conformance with Part 6. If more than one person has responsibility for the construction or installation, each person shall sign and submit the Certificate of Installation documentation applicable to the portion of the construction or installation for which they are responsible; alternatively, the person with chief responsibility for the construction or installation shall sign and submit the **Certificate of Installation documentation** for the entire construction or installation scope of work for the project. Subject to the requirements of Section 10-103(a)3, persons who prepare **Certificate of Installation 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. In accordance with applicable requirements of 10-103(a)3, the signatures provided by *responsible persons* and *documentation authors* shall be original signatures on paper documents or electronic signatures on electronic documents conforming to the electronic signature specifications in Reference Joint Appendix JA7.

## 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/ft<sup>2</sup> of window area, 0.3 cfm/ft<sup>2</sup> of door area for residential doors, 0.3 cfm/ft<sup>2</sup> of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft<sup>2</sup> 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/ft<sup>2</sup>), incorporated herein by reference.

### NOTES TO SECTION 110.6(a)1:

1. Pet doors must meet 0.3 cfm/ft<sup>2</sup> when tested according to ASTM E283 at 75 pascals (or 1.57 pounds/ft<sup>2</sup>).
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/ft<sup>2</sup>) 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.

- C. All elbows shall be sweep elbows or of an elbow-type that has a pressure drop of less than the pressure drop of straight pipe with a length of 30 pipe diameters.
- 3. **Filters.** Filters shall be at least the size specified in NSF/ANSI 50 for public pool intended applications.
- 4. **Valves.** Minimum diameter of backwash valves shall be 2 inches or the diameter of the return pipe, whichever is greater.
- (q) **Fenestration Products.** Fenestration separating conditioned space from unconditioned space or outdoors shall meet the requirements of either Item 1 or 2 below:
  - 1. **Fenestration,** including skylight products, **must have a maximum U-factor of 0.58.**
  - 2. **The weighted average U-factor of all fenestration,** including skylight products, **shall not exceed 0.58.**

**EXCEPTION 1 to Section 150.0(q)1:** Up to 10 square feet of fenestration area or 0.5 percent of the Conditioned Floor Area, whichever is greater, is exempt from the maximum U-factor requirement.

**EXCEPTION 2 to Section 150.0(q)1:** For dual-glazed greenhouse or garden windows, up to 30 square feet of fenestration area is exempt from the maximum U-factor requirement.
- (r) **Solar Ready Buildings.** Shall meet the requirements of Section 110.10 applicable to the building project.

TABLE 150.0-A CLASSIFICATION OF HIGH EFFICACY LIGHT SOURCES

<b>High Efficacy Light Sources</b>	
Luminaires installed with only the lighting technologies in this table shall be classified as high efficacy	
Light sources in this column other than those installed in ceiling recessed downlight luminaires are classified as high efficacy and are <b>not</b> required to comply with Reference Joint Appendix JA8	Light sources in this column shall be certified to the Commission as High Efficacy Light Sources in accordance with Reference Joint Appendix JA8 and be marked as meeting JA8.
<ul style="list-style-type: none"> <li>1. Pin-based linear or compact fluorescent light sources using electronic ballasts.</li> <li>2. Pulse-start metal halide.</li> <li>3. High pressure sodium.</li> <li>4. GU-24 sockets containing light sources other than LEDs.<sup>a,b</sup></li> <li>5. Luminaires with hardwired high frequency generator and induction lamp.</li> <li>6. Inseparable SSL luminaires that are installed outdoors.</li> <li>7. Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting.</li> </ul>	<ul style="list-style-type: none"> <li>8. All light sources in ceiling recessed downlight luminaires. Note that ceiling recessed downlight luminaires shall not have screw bases regardless of lamp type as described in Section 150.0(k)1C.</li> <li>9. GU-24 sockets containing LED light sources.</li> <li>10. Any light source not otherwise listed in this table and certified to the Commission as complying with Joint Appendix 8.</li> </ul>
<p>Notes:</p> <ul style="list-style-type: none"> <li>a. GU-24 sockets containing light sources such as compact fluorescent lamps and induction lamps.</li> <li>b. California Title 20 Section 1605(k)3 does not allow incandescent sources to have a GU-24 base.</li> </ul>	

**Fenestration Acceptance Certificate**

Project Name/Address:

System Name or Identification/Tag:	System Location or Area Served:
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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 <b>NFRC</b> Component Modeling Approach (CMA) Label Certificate or <b>NFRC</b> Certified Label		<input type="checkbox"/> FC-1 for Nonrated Fenestration Values < 1,000 ft <sup>2</sup>	<input type="checkbox"/> FC-1 for Nonrated Fenestration Values ≥ 1,000 ft <sup>2</sup>		
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)**

If Product is rated by NFRC then enter the ID # in each column. This includes any of the types of installed fenestration listed above.	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**

<ul style="list-style-type: none"> <li>• I certify that this Certificate of Acceptance documentation is accurate and complete.</li> </ul>	
Name:	Signature:
Company:	Date:
Address:	If Applicable <input type="checkbox"/> CEA or <input type="checkbox"/> CEPE (Certification #):
City/State/Zip:	Phone: