

CITY OF MILPITAS

Building & Safety Department
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.ci.milpitas.ca.gov



RESIDENTIAL SKYLIGHTS

1. PERMIT INFORMATION:

- The installation of new skylights or the replacement of existing requires a Building Permit.
- Homeowners Association:** If the property is regulated by a Home Owners Association, any exterior work must have written approval of the Association and the written approval must be attached to the permit.
- A Building Permit may be issued only to a State of California Licensed Contractor or the Homeowner.
- If the work is performed by the Homeowner personally or by his/her workers, and an inspection indicates the work cannot be completed satisfactorily, then a licensed contractor must perform the work.
- If the Homeowner hires workers, State Law requires the Homeowner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS:

- Building Codes:** All work must comply with the 2010 California Building Code (CBC), 2010 California Residential Code (CRC), 2010 California Energy Code based upon 2008 Building Energy Efficiency Standards (CEnc) and 2011 Milpitas Municipal Code (MMC).
- On-line permits can only be obtained for skylights that do not include any modifications to the existing roof and/or ceiling framing.** If any changes will be made to the existing roof and/or ceiling framing, drawings must be submitted and approved and the permit obtained in person from the Permit Center, Building & Safety Department, 455 E. Calaveras Blvd. The drawings required include:
 - Roof plan showing the size and location of the skylight(s); indicate the slope of the roof and the size and spacing of the rafters.
 - A framing detail (roof and ceiling) of the opening must be provided (see attached sample).
- Conventional framing must comply with the following:
 - Rafters and ceiling joists must comply with allowable spans as per CBC Table 2308.10.3.
 - If existing roof spans were met by purlins being installed, support struts that extend to bearing walls must be installed at the mid span of the trimmer.
 - Trimmers and headers shall be doubled when span of the header exceeds 4 feet.
 - The end of the header rafters more than 6 feet long shall be supported by framing anchors or hangers.
- If trusses are to be cut, an Architect or Engineer shall provide structural calculations and plans justifying truss capacity.

- Materials.** The following materials are allowed in skylights and sloped glazing (CRC Section R308.6.2):
 - Laminated glass with a minimum 0.015 inch polyvinyl butyral interlayer for glass panes 16 square feet or less in area located such that the highest point of the glass is not more than 12 feet above a walking surface or other accessible area; for higher or larger sizes, the minimum interlayer thickness shall be 0.030 inch.
 - Fully tempered glass.
 - Heat-strengthened glass.
 - Wired glass.
 - Approved rigid plastics.
- Screens.** For fully tempered or heat-strengthened glass, a retaining screen meeting the requirements listed under Screen Characteristics shall be installed below the glass, except for fully tempered glass that meets either condition listed under Screens Not Required. (CRC Section R308.6.3)
- Screens With Multiple Glazing.** When the inboard pane is fully tempered, heat-strengthened or wired glass, a retaining screen meeting the requirements listed under Screen Characteristics shall be installed below the glass, except for either condition listed under Screens Not Required. All other panes in the multiple glazing may be of any type listed under Materials. (CRC Section R308.6.4)
- Screens Not Required.** Screens shall not be required when fully tempered glass is used as single glazing or the inboard pane in multiple glazing and either of the following conditions are met: (CRC R308.6.5)
 - Glass area 16 square feet or less. Highest point of glass not more than 12 feet above a walking surface or other accessible area, nominal glass thickness not more than 3/16 inch, and (for multiple glazing only) the other pane or panes fully tempered, laminated or wired glass.
 - Glass area greater than 16 square feet. Glass sloped 30 degrees or less from vertical, and highest point of glass not more than 10 feet above a walking surface or other accessible area.
- Screen Characteristics.** The screen and its fastenings shall be capable of supporting twice the weight of the glazing, be firmly and substantially fastened to the framing members, and have a mesh opening of no more than 1 inch by 1 inch. (CRC R308.6.7)
- Curbs For Skylights.** All unit skylights (a factory assembled, glazed fenestration unit, containing one panel of glazing material) installed in a roof with a pitch flatter than 3:12 shall be mounted on a curb extending at least 4 inches above the plane of the roof unless otherwise specified in the manufacturer's installation instructions. (CRC R308.6.8)
- Testing and Labeling.** Unit skylights shall be tested by an approved independent laboratory, and bear a label identifying manufacturer, performance grade rating and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440. (CRC R308.6.9)

3. PLUMBING/MECHANICAL REQUIREMENTS:

- All plumbing and mechanical vents must be located ten (10) feet away or terminate three (3) feet above an operable skylight (CPC Section 906.2).

4. **ENERGY REQUIREMENTS:**

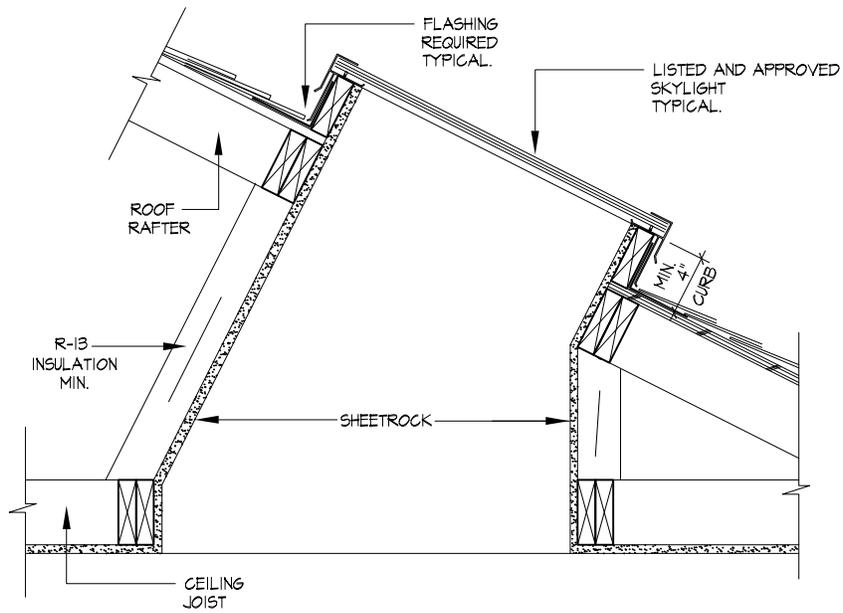
- Skylights must comply with all applicable mandatory measures of the California Energy Code. Refer to the attached form MF-1R for a list of the mandatory requirements.
- All skylights must have a maximum U-factor of 0.40 and a SHGC of 0.40.
- Up to 2 Sq. Ft. of tubular skylight with dual-pane diffusers may have an assumed U-factor equivalent to the Package requirements as per CEnC Sec. 151(f)3 Exception.
- Total fenestration area shall not exceed 20% of the conditioned floor area.
- Total fenestration area facing west shall not exceed 5% of the conditioned floor area.
- Alterations that add fenestration area (including glazing in skylights) of up to 50 square feet shall not be required to meet the total fenestration area (20%) and west-facing fenestration area (5%) requirements of Sections 151(f)3B and C. The existing west-facing fenestration area shall not be increased by more than 50 square feet.
- Title 24 Energy Compliance Reports:** The following forms must be filled out and submitted with the permit application, or for online permits, attached to the permit:
 - Mandatory Measures form MF-1R.
 - Certificate of Compliance form CF-1R ALT.
 - Installation Certificate CF-6R-ENV-01.

5. **INSPECTION PROCEDURES:**

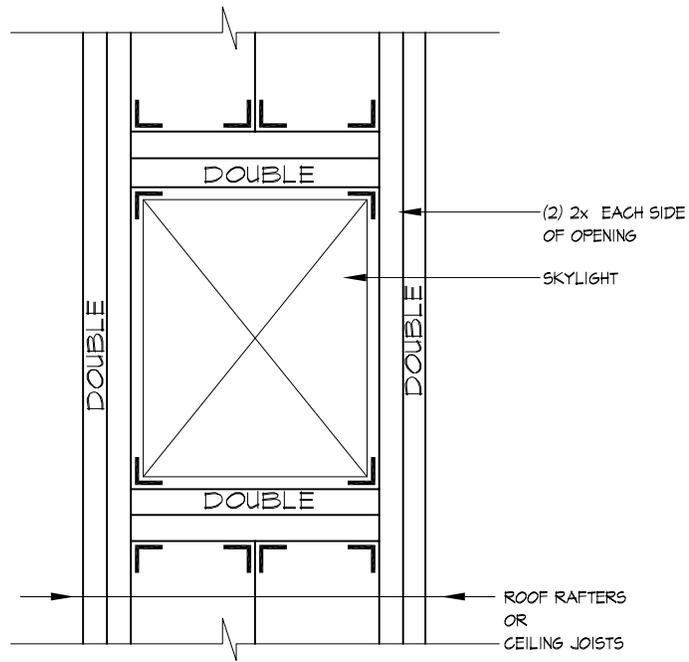
- Typically, at least two inspections are required, a rough when all framing is still exposed and a final. For each inspection, the Permit Card with the Energy Compliance Report forms completely filled and out attached, and the Approved Job Copy of the Drawings (if any) must be presented to the inspector. Permits expire 180 days after issuance or last inspection passed, whichever is the latest.
- The contractor or owner must provide roof access (ladder to roof) for the all required inspections. Ladders must be OSHA approved, minimum Type I with a 250 lb rating, in good condition and designed for its intended use.

6. **QUESTIONS:**

- If you have any questions regarding your project contact the Building & Safety Department at (408) 586-3240.



SKYLIGHT DETAIL



PLAN VIEW

REV.	DATE	BY:	SCALE:
1	01/18/08	HR	N.T.S
			DATE: AUG. 2006
			DRAWN BY: EK.

City of Milpitas
 Building & Safety Division
 SKYLIGHT INSTALLATION

SHEET
4
 OF 4 SHEETS

Mandatory Measures Summary		Windows and Doors Only	MF-1R
Residential			
Site Address:	Enforcement Agency: City of Milpitas	Date:	

Building Envelope Measures:
§116(a)1: Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.
§116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).
§117: Exterior doors and windows are weather-stripped; all joints and penetrations are caulked and sealed.
§118(a): Insulation specified or installed meets Standards for Insulating Material. Indicate type and include on CF-6R Form.
§118(i): The thermal emittance and solar reflectance values of the cool roofing material meets the requirements of §118(i) when the installation of a Cool Roof is specified on the CF-1R Form.
*§150(a): Minimum R-19 insulation in wood-frame ceiling or equivalent U-factor.
§150(b): Loose fill insulation shall conform with manufacturer's installed design labeled R-Value.
*§150(c): Minimum R-13 insulation in wood-frame wall or equivalent U-factor.
*§150(d): Minimum R-13 insulation in raised wood-frame floor or equivalent U-factor.
§150(f): Air retarding wrap is tested, labeled, and installed according to ASTM E1677-95(2000) when specified on the CF-1R Form.
§150(g): Mandatory Vapor barrier installed in Climate Zones 14 or 16.
§150(l): Water absorption rate for slab edge insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

Prescriptive Certificate of Compliance: Residential Windows and Doors Only		CF-1R-ALT
<i>Residential Alterations</i>		(Page 1 of 2)
Project Name:	Climate Zone # 4	# of Stories

General Information		
Site Address:	Enforcement Agency: City of Milpitas	Date:
Building Type <input type="checkbox"/> Single Family <input type="checkbox"/> Multi Family	Circle the Front Orientation: N, E, S, W, or degrees _____	
Conditioned Floor Area (CFA): _____	Project Type: <input type="checkbox"/> Alterations <input type="checkbox"/> Envelope <input type="checkbox"/> Fenestration <input type="checkbox"/> Roof <input type="checkbox"/> HVAC Replacement or Change Out <input type="checkbox"/> Duct Replacement <input type="checkbox"/> Water Heater	
<i>NOTE: This form is not to be used for Newly Constructed Buildings or Additions</i>		

FENESTRATION PROPOSED AREAS					
<input type="checkbox"/> Replacing window alone – Replacement windows shall meet the U-Factor and SHGC Value requirements of Component Package D in Table 151-C. The Total Fenestration and West-facing Area requirements are not applicable.					
<input type="checkbox"/> Adding 50ft² or less of window area – Newly installed windows shall meet the U-Factor and SHGC Value requirements of Component Package D in Table 151-C.					
<input type="checkbox"/> Adding more than 50ft² of window area – Newly installed windows shall meet the U-Factor and SHGC Value and the Fenestration Area requirements of Component Package D in Table 151-C. Complete the Altered Fenestration Allowed Area Table on Page 2 of the CF-1R-ALT					
Fenestration Type and Frame (Window, Glass Door or Skylight)	Orientation (North, East, South, West)	Proposed Area ¹ (ft ²)	Maximum U-factor ^{2,3}	Maximum SHGC ^{2,3,4}	NFRC or Default Value ⁵
<ol style="list-style-type: none"> 1. Fenestration area is the area of total glazed product (i.e. glass plus frame). Exception: When a door is less than 50% glass, the fenestration area may be the glass area plus a "2 inch frame" around the glass. 2. Enter value from Component Package D Requirements in Table 151-C. 3. Actual fenestration products installed and as indicated in CF-6R-ENV Form shall be equivalent to or have a lower U-factor and/or a lower SHGC value than that specified on the CF-1R ALT Form. 4. Submit a completed WS-3R Form if a reduced SHGC is calculated with exterior shading. 5. If applicable at this stage enter "NFRC" for NFRC Certified windows or are CEC "Default" values found in Table 116-A or B. 					

ALTERED FENESTRATION ALLOWED AREAS (Complete if more than 50ft² of fenestration is added)							
	A	B	C	D	E	F	G
	CFA of Entire Dwelling	Allowed % of CFA	Existing Fenestration Area	Fenestration Area Removed	Fenestration Area Added	Total Area Allowed (A x B)	Proposed Area ² (E-D) + C
Total Fenestration Area (ft ²)		.20					≥
West Fenestration Area ¹ (Required In CZ's 2, 4 & 7-15)		.05					≥
<ol style="list-style-type: none"> 1. West Fenestration Area includes west-sloping skylights and any skylights with a pitch less than 1:12. 2. West facing glazing area removed cannot be "counted" twice." In order to distribute the west glazing area removed to the other orientations, input the west glazing area removed in the Total Fenestration Area row, column D. 3. Include the Proposed Area of the West facing fenestration in both Area columns below. 4. To meet compliance, the Proposed Area must be less than or equal to the Total Allowed Area for BOTH the Total and West Fenestration Areas. 							

Prescriptive Certificate of Compliance: Residential Windows and Doors Only		CF-1R-ALT
<i>Residential Alterations</i>		(Page 2 of 2)
Project Name:	Climate Zone # 4	# of Stories

Documentation Author's Declaration Statement	
<ul style="list-style-type: none"> I certify that this Certificate of Compliance documentation is accurate and complete. 	
Name:	Signature:
Company:	Date:
Address:	If Applicable <input type="checkbox"/> CEA or <input type="checkbox"/> CEPE (Certification #):
City/State/Zip:	Phone:
Responsible Building Designer's Declaration Statement	
<ul style="list-style-type: none"> I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance. I certify that the energy features and performance specifications for the building design identified on this Certificate of Compliance conform to the requirements of Title 24, Parts 1 and 6 of the California Code of Regulations. The building design features identified on this Certificate of Compliance are consistent with the information provided to document this building design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 	
Name:	Signature:
Company:	Date:
Address:	License:
City/State/Zip:	Phone:

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.

INSTALLATION CERTIFICATE Windows and Doors Only **CF-6R-ENV-01**

Envelope – Insulation; Roofing; Fenestration

Site Address:	Enforcement Agency: City of Milpitas	Permit Number:
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FENESTRATION/GLAZING									
Item	Manufacturer/Brand Name (GROUP LIKE PRODUCTS)	Product U-factor ¹	Product SHGC ¹	# of Panes	NFRC Certified ^{1,2}	Total Quantity of Like Product (Optional)	Area ft ²	Add. Exterior Shading Dev. or Overhang	Comments/ Location/ Special Features
1									
2									
3									
4									
5									
6									
7									
8									

1. Use values from a fenestration product's NFRC Certified Label. For fenestration products without an NFRC label, use the default values from Section 116, Table 116-A and 116-B of the 2008 Energy Efficiency Standards.
2. NFRC Label Certificates shall not be removed until the building inspector has verified the efficiency. Enter Yes or No.

- §116(a)1: Doors and windows between conditioned and unconditioned spaces designed to limit air leakage.
- §116(a)2 and 3: Actual fenestration products installed are equivalent to or have a lower U-factor and/or a lower SHGC than that specified on the Certificate of Compliance (Form CF-1R).
- §116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a)
- §117: Exterior doors and windows weather-stripped; all joints and penetrations caulked and sealed.

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 eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
- **I will ensure that a completed, signed copy of this Installation Certificate 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 Installation Certificate is required to be included with the documentation the builder provides to the building owner at occupancy.**

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	Responsible Person's Signature:	
CSLB License:	Date Signed:	Position With Company (Title):