

CITY OF MILPITAS

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



COMMERCIAL RE-ROOF INCLUDING HIGH-RISE RESIDENTIAL (4+ STORIES) AND HOTEL/MOTEL OCCUPANCIES

1. PERMIT INFORMATION:

- The replacement or repair of more than One Square (100 SQ. FT.) of roofing material requires a building permit.
- Other than on “flat roofs”, all changes in roofing materials (including color of material used) must be reviewed and approved by the Planning Department and the permit will have to be obtained in person at the Permit Center.
- A Permit may be issued only to a State of California Licensed Contractor with the proper license classification or the Homeowner.
- If the work is performed by the Building Owner 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 Building Owner hires workers, State Law requires the Owner to obtain Worker’s Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS:

- All work must comply with the 2013 California Building Code (CBC), 2013 California Plumbing Code (CPC), 2013 California Mechanical Code (CMC), 2013 California Electrical Code (CEC), 2013 California Energy Code and 2014 Milpitas Municipal Code (MMC).
- Roofing materials must be installed per the manufacturer's installation instructions and CBC Chapter 15.
- If the roof covering is not removed to the original deck, access to the attic may be required for an under roof check of the structural system, as well as for the condition of the roof deck.
- At the time of the pre-roofing inspection, all damaged decking and supporting members must be replaced.
- Class “B” or better roof covering is required for all buildings with a Construction Type of I-A, I-B, II-A, III-A, IV and V-A as per CBC Section 1505.1.
- Class “B” or better roof covering is required for all buildings located in the “Hillside” area (east of North Park Victoria Drive, Evans Road and Piedmont Road) and shall be installed to 95 mph minimum wind speed and exposure C standards (Section II-3-2.09, 2011 Milpitas Municipal Code).
- Class “C” or better roof covering is required for all other buildings as per CBC Section 1505.1.3.
- Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.
- Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Existing vent flashing, metal edgings, drain outlets, collars and metal counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.
- Flashings shall be reconstructed in accordance with approved manufacturer’s installation instructions. Metal flashing, to which bituminous materials are to be adhered, shall be primed prior to installation.

- New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck where any of the following conditions occurs:
 - Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
 - Where the existing roof covering is wood shake, slate, clay, cement or asbestos-cement tile.
 - Where the existing roof has two or more applications of any type of roof covering.
 - Exceptions:
 1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that does not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
 2. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with the requirements for a combustible concealed space below.
 3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.
- Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other approved materials securely fastened in place.
- Where the application of a new roof covering creates a combustible concealed space, such as when battens or metal roofing is installed, fire blocking shall be installed in accordance with CRC R302.11.
- FLAT ROOFS:**
 - When old roof membrane is removed to original deck, it is recommended (not required) that deck be re-sloped to 1/4 inch per foot minimum.
 - In order to prevent excessive accumulation of water (ponding), the roof must be sloped to provide positive roof drainage (CBC Section 1510.1).
 - If the roof is not re-sloped to minimum 1/4 inch per foot, the roof membrane installed must be approved for a flat roof installation and roof framing shall be checked for ponding instability as per ASCE7-10, Section 8.4.

3. ENERGY REQUIREMENTS:

- CEnC 141(b) 1B:** Replacing, recovering or recoating of the exterior surface of existing nonresidential roofs shall meet the requirements of CEnC Section 110.8(i) (see below). Note: Requirements do not apply to roofs over unconditioned space. For nonresidential buildings, high-rise residential buildings, and hotel/motels, where 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 the following:
 1. Nonresidential buildings with low-sloped roofs (less than or equal to 2:12) shall have a minimum aged solar reflectance of 0.63 and a minimum thermal emittance of 0.75, or a minimum SRI of 75. Note: This does not apply to high-rise residential buildings and hotels and motels.

Exception to section 141.0 (b)2Bia:


An aged solar reflectance less than 0.63 is allowed provided the maximum roof/ceiling U-factor in Table 141.0-B is not exceeded.

Exceptions to section 141.0 (b) 2Bi and ii:

- 1) 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 and thermal emittance, or SRI.
 - 2) Roof constructions that have thermal mass over the roof membrane with a weight of at least 25 pounds per square foot are not required to meet the minimum requirements for solar reflectance and thermal emittance, or SRI.
2. Nonresidential buildings with steep-sloped roofs (greater than 2:12) shall have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16. Note: This does not apply to high-rise residential buildings and hotels and motels.
3. For nonresidential buildings, high-rise residential buildings and hotels and motels, when low-sloped roofs are exposed to the roof deck or to the recover boards, the exposed area shall be insulated as follows:
- A. Nonresidential: R-8 continuous insulation with U-factor of 0.082.
 - B. High-rise residential and Hotel/Motel buildings: R-14 continuous insulation with U-factor of 0.055.
 - C. Exceptions:
 - 1) Additional insulation is not required if the roof is already insulated to a minimum level of R-7 or it has a U-factor lower than 0.089.
 - 2) 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 from the roof membrane surface to the top of the base flashing.
 - 3) If adding the required insulation will reduce the base flashing height to less than 8 inches at penthouse or parapet walls, the insulation added may be limited to the maximum insulation thickness that will allow a height of 8 inches from the roof membrane surface to the top of the base flashing, provided that the following applies:
 - 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; 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 100 square feet per linear foot; 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.
 - v. Tapered insulation may be used which has a thermal resistance less than that prescribed (R-8 or R-14) 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 prescribed values (R-8 or R-14).

☐ CEnC 118(i):

1. In order to meet the requirements above, a roofing product's thermal emittance and aged solar reflectance shall be certified and labeled in accordance to the requirements of Section 10-113 by the Cool Roof Rating Council (CRRC), and be listed in the CRRC's Rated Product directory (see <http://www.coolroofs.org>). The following is a sample of an approved CRRC product label.

	<table border="0"> <tr> <td></td> <td style="text-align: center;"><u>Initial</u></td> <td style="text-align: center;"><u>Weathered</u></td> </tr> <tr> <td>Solar Reflectance</td> <td style="text-align: center;">0.70 Min</td> <td style="text-align: center;">Pending</td> </tr> <tr> <td>Thermal Emittance</td> <td style="text-align: center;">0.75 Min</td> <td style="text-align: center;">Pending</td> </tr> </table>		<u>Initial</u>	<u>Weathered</u>	Solar Reflectance	0.70 Min	Pending	Thermal Emittance	0.75 Min	Pending
		<u>Initial</u>	<u>Weathered</u>							
Solar Reflectance	0.70 Min	Pending								
Thermal Emittance	0.75 Min	Pending								
Rated Product ID Number	XXXXX									
Licensed Seller ID Number	XXXXX									
Classification	Production Line									

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.

Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.

A. Exception: Roofing products that are not certified according to Section 10-113 shall assume the following default aged reflectance/emittance values:

- 1) For asphalt shingles, 0.08/0.75.
- 2) For all other roofing products, 0.10/0.75

2. Liquid applied roof coatings applied to low-sloped roofs in the field as the top surface of a roof covering shall:

- A. Be applied across the entire roof surface to meet the dry mil thickness or coverage recommended by the coating manufacturer, taking into consideration the substrate on which the coating is applied, and
- B. Meet the minimum performance requirements listed in CEnC Table 118-B or the minimum performance requirements of ASTM C836, D3468, D6083, or D6694, whichever are appropriate to the coating material.

1) Exceptions:

- i. Aluminum-pigmented asphalt roof coatings shall meet the requirements of ASTM D2824 or ASTM D6848 and be installed as specified by ASTM D3805.
- ii. Cement-based roof coatings shall contain a minimum of 20 percent cement and shall meet the requirements of ASTM C1583, ASTM D822, and STM D5870.

☐ ENERGY FORMS:

- Form NRCC-ENV-01-E Certificate of Compliance- Envelope Component Approach must be submitted along with the permit application for **ALL** re-roof permits.
- Form NRRC-ENV-03-E Certificate of Compliance – Cool Roof and SRI worksheet must be submitted along with the permit application if the roofing product is not CRRC certified.
- Form NRCC-ENV-01-E Certificate of Installation must be completed and provided to the inspector upon final inspection.

4. SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:

- ❑ Residential occupancies classified as commercial re-roof projects (townhome, condominium and apartment buildings *4 or more stories in height* and all hotels & motels) require the installation of smoke alarms and carbon monoxide alarms prior to the final inspection as follows:
 - **Single or multiple station Smoke Alarms** listed in accordance with U.L. 217 and listed and approved by the California State Fire Marshal must be installed if they do not already exist as noted below, except that in Group R occupancies with a fire alarm system with smoke detectors located as noted below may be installed in lieu of smoke alarms. Upon actuation of the detector, only those notification appliances in the dwelling unit or guest room where the detector is actuated shall activate. (CBC 907.2.11) (CFC 4603.7)
 - **R-1 occupancies (hotels & motels):** In each sleeping area, in every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit and in each story within the sleeping unit.
 - **R-2 and R-3 occupancies (including apartments, condominiums and townhomes):** In each room used for sleeping purposes, on the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms and in each story within a dwelling unit. Apartment complexes and other multiple-dwelling complexes shall have a smoke detector installed in the common stairwells (H&S Code 1113.7).
 - **Power source:** Smoke alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup (unless they are connected to an emergency electrical system). Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Alarm wiring shall be directly connected to the permanent building wiring without a disconnecting switch other than as required for over current protection. Smoke alarms are permitted to be solely battery operated in existing buildings where no construction is taking place and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic or crawl space available which could provide access for building wiring without the removal of interior finishes.
 - **Interconnection:** Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit, except interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind and where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic or crawl space available which could provide access for interconnection without the removal of interior finishes. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.
 - **Carbon Monoxide Alarms:** An approved single station carbon monoxide alarm listed as complying with UL 2034, approved and listed by the California State Fire Marshal, installed and maintained in accordance with NFPA 720 and the manufacturer's instructions shall be installed if they do not already exist in existing Group R occupancies located in a building with a fossil fuel-burning heater or appliance, fireplace or an attached garage as follows:
 - **R-1 occupancies (hotels & motels):** In hotel & motel occupancies on the ceiling of every sleeping unit or other locations within the sleeping unit in compliance with the manufacturer's installation instructions.
 - **R-2 and R-3 occupancies (including apartments, condominiums and townhomes):** outside each separate dwelling unit sleeping area in the immediate vicinity of bedroom(s) and on every level of dwelling unit.

- Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. An open parking garage, as defined in the CBC, or an enclosed parking garage ventilated in accordance with the CMC shall not be deemed to be an attached garage. Sleeping units or dwelling units that do not themselves contain a fossil fuel-burning heater or appliance, fireplace or an attached garage, but that are located in a building with a fossil fuel-burning appliance or an attached garage, need not be provided with single station carbon monoxide alarms provided that: (CBC 420.4.2)
 1. The sleeping unit or dwelling unit is located more than one story above or below any story that contains a fuel-burning appliance or an attached garage; and
 2. The sleeping unit or dwelling unit is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
 3. The building is equipped with a common area carbon monoxide detection system, carbon monoxide detector or combination detector in the same space as permanently installed fuel-burning appliance(s).
- **Power supply and Interconnection:** Refer to the requirements above for smoke alarms for connection to the building wiring, exceptions allowing battery only alarms and interconnection of the alarms when more than one is installed.

5. INSPECTIONS:

- The City of Milpitas Building inspectors are required to perform the inspections listed below on all re-roof work in the city.
 - **Pre-Roofing Inspection:** After existing roofing is removed but before any new material is installed.
 - **Roof Nail Inspection:** After plywood (or wood) to create solid deck is installed (when applicable).
 - **In-Progress Inspection:** While the roofing material is being installed.
 - **Smoke detector and spark arrestor inspection:** Required to obtain a final.
 - **Form ENV-INST:** Must be completed and provided to the inspector upon final inspection.
 - **Final Inspection:** When all work has been completed, including:
 - Overflow drains cleaned
 - Skylights secured
 - All flues extended and secured
 - Any roof equipment and/or piping secured
 - All exposed nails protected
 - All exposed wood, roof jacks, and metal flashing or edging painted
- For each inspection, the Permit Card, the Approved Job Copy of the Drawings (if any) and the ICC report on the roofing materials 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 designed for its intended use and tied off to the building a minimum 3 rungs above the roof.

6. QUESTIONS:

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