

The installation of smoke detectors may be required (requirements attached)

Comply with City of Livermore Security Ordinance (requirements attached)

Residential Window Installation Information

A building permit is required for the installation of windows. The five (5) main building and energy code items to address for a residential window installation are:

1. Light and ventilation requirements for habitable areas.
2. Sleeping room (bedroom) emergency egress requirements.
3. Windows in locations that are required to be "safety glazing" (tempered or laminate glass).
4. Exterior wall width between windows and doors for lateral load resistance.
5. State of California Title 24 energy compliance requirements for an alteration.

The following information is intended to clarify some of the typical residential window assembly replacement and/or new installation questions (see bullet items below).

- A building permit is required for window assembly replacement (either "retrofit" or nail-on flange style). Replacement of "glass only" does not require a building permit.
- Existing windows that conform to the current light, ventilation, egress, etc. requirements of the 2022 California Residential Code shall not be replaced with windows that do not comply.
- If the existing sill height for emergency egress windows is higher than 44", it will be allowed to remain only if it does not exceed 48". However, if any alterations or repairs are made to the "framed opening" a finished sill height of 44" maximum will be required.
- Safety glazing is required if the window glazing is located within a 24" arc of the vertical edge of a door in the closed position and the glazing bottom edge are less the 60" above the walking surface. Glass areas greater than 9 square feet, less than 18" above the floor, exposed top edge greater than 36" above the floor and within 36" of a walking surface needs to be safety glazing.
- For dwellings of "Conventional Light-Frame Construction", the locations of existing window or door openings are allowed to remain. However, if existing window or door openings are to be widened or if new window or door openings are proposed in the exterior wall(s) the new opening will have to comply with the 2019 California Residential Code, Section R602.10.2.2.1 for braced wall panels.

** When replacing no more than 75 square feet of windows, the newly installed windows shall have a maximum U-factor of 0.40 and a maximum Solar Heat Gain Coefficient (SHGC) of 0.35. If more than 75 square feet of window area is replaced, the newly installed windows shall have a maximum U-factor of 0.30 and a SHGC of 0.23.

Residential Egress Window Installation Requirements

The 2022 California Residential Code requires minimum opening dimensions and areas for bedroom windows (if the bedroom does not have a door to the exterior) for emergency egress.

1. If the bedroom in question does not have a door to the exterior, one window opening in the room shall meet the following minimum building code dimensions and areas when a new window assembly is installed.
 - a. Minimum opening width: 20 inches
 - b. Minimum opening height: 24 inches
 - c. Minimum opening area: 5.7 square feet (Width and/or height must exceed the minimum)
Exception: 5.0 square feet for "grade-floor openings"
(See Section R310 for a complete definition for grade-floor opening)

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If a “new window opening” is created in a wall of the bedroom and this window is to be used for the required egress, in addition to the minimum dimensions and areas indicated above, a maximum height of 44” to clear opening above the floor level will be required.

2. If the existing window opening(s) does not meet the above minimum dimensions and areas, the new window opening(s) shall be modified to meet the requirements.

Note: Existing window conditions not capable of meeting the above requirements will need to be resolved on an individual basis prior to installation of the new window assembly.

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Smoke and Carbon Monoxide Alarms in New and Existing Single and Two Family Dwellings

**2022 California Residential Code, Section R314 –R315 and NFPA 72
Effective January 1, 2023**

Smoke alarms (smoke detectors) and carbon monoxide alarms save lives. They provide the opportunity for escape by early detection of smoke, fire or carbon monoxide gases.

Smoke and carbon monoxide alarms are required in new and existing dwellings **anytime** a permit with a job valuation of more than \$1,000.00 is issued for an addition, repair or alteration. This includes but is not limited to furnaces, water heaters, bath remodels, re-pipes, reroofs, etc.

Smoke and carbon monoxide alarm locations:

1. Outside each sleeping area (hallway) in the immediate vicinity of bedrooms.
2. On every story of the dwelling, including basements and habitable attics. Split levels are considered one story.

Additional smoke alarms are required in each sleeping room and any room with a closet.

Power source: Smoke and carbon monoxide alarms are permitted to be solely battery operated in existing areas of buildings undergoing alterations or repairs that do not result in removal of interior walls and ceilings affecting the work area. In new construction and bedroom additions, smoke and carbon monoxide alarms shall receive their primary power from building wiring, shall be interconnected with other required alarms and equipped with battery backup.

Installation guide lines: Smoke and carbon monoxide alarms shall be installed in accordance with the manufacturer's installation instructions. Smoke alarms and combination smoke/carbon monoxide alarms shall be installed as follows:

- **Flat ceilings:** centrally located in sleeping room.
- **Peaked ceiling:** within 36" horizontally of the peak and not closer than 4" vertically to peak.
- **Sloped ceiling:** within 36" horizontally of the high side of the ceiling and not closer than 4" to the adjoining wall.
- **Coffered ceiling:** highest flat portion or sloped portion within 12" from highest point.
- **Wall mounting:** not farther than 12 inches from adjoining ceiling and no closer than 4".
- Alarms shall not be installed within 36" of a bathroom door containing a tub or shower.
- Alarms shall not be installed within 36" of a supply register of a forced air heating/cooling system.
- Alarms shall not be installed within 36" of a paddle-type ceiling fan blade.

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Security Ordinance *Residential Units*

SECTION 15.18.140 EXTERIOR DOORS

Each exterior door shall be secured as follows, where not prohibited by the building code:

- A. Exterior doors and doors leading from garage areas into dwellings shall be of solid core no less than 1-3/8-inch thickness.
- B. Exterior doors and doors leading from garage areas into dwelling shall have a self-locking lock with a deadlatch, and a dead bolt lock with a 1-inch throw.
- C. The locking device on main entrance doors shall be so constructed that both dead bolt and deadlatch can be retracted by a single action of the inside doorknob. **Exception:** Single family dwellings.
- D. The deadlatch lock and the dead bolt lock shall be keyed alike (*one key will fit both locks*).
- E. Cylinders shall be so designed or protected that they cannot be gripped by pliers or other wrenching devices.
- F. The lock or locks shall be operated from the inside of the door by a device not requiring a key.
- G. Pairs of doors shall have flush bolts with a minimum throw of 5/8 inch at the head and foot (*floor and ceiling*) of the inactive leaf.
- H. The door stop on a wooden jamb for an in-swing door shall be of one-piece construction with the jamb, or joined by a rabbet.
- I. All strike-plate areas shall be of material designed to maintain the effectiveness of the locking bolt strength.
- J. Non-removable pin or interlocking stud-type hinge shall be accessible from the outside when the door is closed.

- K. Sliding doors shall be designed or fitted with devices to prevent removal by lifting or raising while in a closed or partially open position.

SECTION 15.18.150 GARAGE VEHICLE ACCESS DOORS

- A. Sliding doors shall be secured with a cylinder lock, padlock with hardened steel shackle, metal cane bolt or equivalent when not otherwise secured by electric power operation.
- B. Overhead doors shall be secured with metal slide bolts or equivalent on both the left and right sides of the door. Slide bolts mounted on the exterior side of the door must be provided with a padlock. Such padlock shall have a minimum of 1/4-inch diameter hardened steel shackle. Slide bolts mounted on the interior side of the door need not be supplied with padlocks.
- C. The lock shall be designed and installed so as to prevent the locking mechanism from being defeated by prying or shifting the door from side to side.
- D. A cylinder guard shall be installed on each mortise or rim-cylinder lock which projects beyond the face of the door or is otherwise accessible to gripping tools.

SECTION 15.18.160 ENTRY VISION

All main entry doors shall be arranged or equipped with approved devices so that the occupant has a view of the door area immediately outside the door without opening the door. If door viewer is used, it must provide a minimum 180-degree field of view. *(Prior code 6.81)*

SECTION 15.18.170 WINDOWS

- A. Sliding windows shall be designed to prevent removal by raising of the moving panel from the track while in a closed or partially open position.
- B. Louvered windows shall be prohibited within eight feet of the ground level or balcony. *(Prior code 6.82)*

SECTION 15.18.180 LIGHTING

The following standards as to lighting of residential units shall be followed, where not prohibited by the building code:

- A. Each open parking lot (including lots having carports) providing more than ten parking spaces shall be provided with a maintained minimum or one-foot candle of light on the parking surface during the hours of darkness.

- B. Lighting fixtures shall be so arranged as to disseminate light uniformly over the parking surface.
- C. Lights shall be protected from breakage or tampering.

SECTION 15.18.190 PARKING SPACE IDENTIFICATION

Parking space numbering or identification shall not correspond to guest room or apartment numbering or identification. (Prior code 6.85)

SECTION 15.18.200 ADDRESS NUMBERS

- A. All single-family or multiple-family dwellings shall display their main address numerals in such a position that the numerals are easily visible to approaching emergency vehicles.
- B. Such numerals shall be no less than 4 inches in height and shall be of contrasting color to the background to which they are attached. During the hours of darkness, the numerals shall be illuminated with a maintained minimum of one footcandle of light. In lieu of exterior illuminations, the numerals may be backlighted with a fixture which is resistant to tampering and breakage, having an opaque background to which the numerals are mounted.
- C. All numerals shall be mounted on a nonmovable surface closest to the street (Prior code 6.86)