

CITY OF MILPITAS

Building & Safety Department
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Milpitas, CA 95035
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RESIDENTIAL ADDITION

Building, mechanical, plumbing and electrical permits are required for all residential additions. Some projects may require a separate demolition permit and a fire protection system permit from the Fire Department. In order to expedite the issuance of your permits, submit complete sets of plans, including all related disciplines. Incomplete submittals will cause delay in the approval of your project. If you have any questions, contact Building & Safety Department staff at City Hall or at the phone number listed above.

The following are guidelines for preparation and submittal of your plans. Specific plan requirements will depend largely upon the extent, nature and complexity of the work to be done. Some items listed below may not be required for your specific project. BE SURE TO INCLUDE ALL OF THE PERTINENT INFORMATION AND DRAWINGS:

Home Owners Association: If the property is regulated by a Home Owners Association, any exterior work must have approval of the Association. It is the property owner's responsibility to obtain the approval.

Before saw cutting or breaking a slab-on-grade, verify if it is a post tension slab. Cutting a tendon in these slabs can be very dangerous and expensive to repair.

Refer to "*Design Guidelines for Residential Addition*" for sample of the plans required for a residential addition project. Refer to the many separate handouts for more detailed information regarding these projects, including kitchens, bathrooms, garage conversions, water piping, lighting, etc.

1. PLAN REQUIREMENTS:

- ❑ **Plan Size:** Prepare plans on paper that is at least 22 inches x 17 inches in size.
- ❑ **Sets of Plans:** Submit five (5) complete sets of plans.
- ❑ **Clarity:** All plans shall be prepared to be sufficiently readable and clear for creating a digitized record. Plans shall be quality blue or black ink line drawings with uniform light (white) background color. Pencil drawings are not acceptable, but copies of pencil drawings can be submitted provided copies are readable with good contrast.
- ❑ **Dimensions:** Plot Plans, Floor Plans and other plan view drawings shall be fully dimensioned and shall have a north arrow.
- ❑ **Scale:** All drawings shall be drawn to an adequate scale with scale indicated. Recommended scales for drawings are:

Plot Plans:	1/8" = 1'-0", 1"=10' or 1"=20'	Floor and Roof Framing:	1/4" = 1'-0" or 1/8" = 1'-0"
Floor Plans:	1/4" = 1'-0"	Building Cross Sections:	1/4" = 1'-0" or 1/2" = 1'-0"
Foundation Plans:	1/4" = 1'-0" or 1/8" = 1'-0"	Exterior Elevations:	1/8" = 1'-0" or 1/4" = 1'-0"
- ❑ **Existing (E) and New (N) Construction:** Throughout the plans, be sure to label all new (N) and existing (E) construction, components and fixtures to distinguish between new work to be done and the existing work.
- ❑ **Completeness:** Please remember, the more complete and accurate the drawings and submittal documents, the sooner your permits can be issued.

- ❑ **Signature:** The person who prepared the plans must sign each sheet. If any of the plan sheets are prepared by a licensed architect or registered engineer, that individual must stamp and sign at least two copies of each of the sheets he or she has prepared in accordance with the California Business and Professions Code prior to plan approval. Plans for elements of the structure designed by others must be reviewed and signed by the Engineer or Architect of record. (California Business and Professional Code 5536.1, 6735)

2. PROJECT INFORMATION - On the first sheet of the plans, provide the following information:

- ❑ **Name of Architect, Engineer or Designer:** The printed name, address and telephone number of the person who prepared the plans.
- ❑ **Address and Owner:** List the street address of the property and the name of the legal owner of the property.
- ❑ **An Index of the Drawings:** List each sheet number and a description in an Index of the Drawings.
- ❑ **Scope of Work:** State the complete scope of work to be performed under this permit.
- ❑ **Building Area:** State the area in square feet of the existing house, the area to be added and/or remodeled, and the total of the existing and new area.
- ❑ **Deferred Submittals:** List all proposed deferred submittals (e.g. roof trusses, prefabricated stairs, etc.). Deferred submittal documents shall be reviewed by the Architect or Engineer of record with a notation indicating that the documents have been reviewed and are in general conformance with the design of the building prior to being submitted to the City for approval.
- ❑ **Building Codes:** All work must comply with the 2016 California Residential Code (CRC) or 2016 California Building Code, 2016 California Electrical Code (CEC), 2016 California Mechanical Code (CMC), 2016 California Plumbing Code (CPC), 2016 California Energy Code (CEnc), 2016 California Green Building Code (CGBC) and 2016 Milpitas Municipal Code (MMC).

3. ARCHITECTURAL PLANS - The following are minimum plan requirements for most projects based on CRC:

- ❑ **Site (Plot) Plan:** Show the location of existing buildings, proposed addition, all other structures on the site property lines, location of easements, and locations of adjacent streets or alleys.
 - Show front, side and rear setback dimensions, dimensions to easements, and dimensions between buildings if there is more than one building on the site.
 - Show finish floor elevations, elevations of finish grade adjacent to buildings, established street grades, drainage patterns, locations, and gradients of cut or fill slopes.
 - Show the direction of true North.
 - Show the existing and any proposed new parking. **NOTE:** Planning requires the following off-street parking:
 - 3 bedrooms or less – 2 parking spaces.
 - 4 or more bedrooms – 3 parking spaces plus 1 space for each additional bedroom exceeding 4.
- ❑ **Floor Plan:** The Floor Plan must show all existing rooms, new rooms and rooms to be modified. Label the use of each room. Provide all information necessary to explain what, where and how the work will be done.
 - The building shall not exceed 3 stories (CRC 1.1.3).
 - Provide 1-hour rated construction for exterior walls less than 5 feet from property line for non-sprinklered building per CRC Table R302.1(1) and for exterior walls less than 3 feet from property line for sprinklered building per CRC Table R302.1(2).

- Openings are not permitted in exterior walls 3 feet or less from the property line for buildings with or without automatic sprinklers. For non-sprinklered buildings, openings cannot exceed 25% of wall area greater than 3 feet to 5 feet from the property line per CRC Table R302.1(1).
- Projections beyond the exterior wall shall not extend closer than 2 feet from the property line per CRC Table R302.1(1) & R302.1(2). Provide 1-hour rated construction on the underside of the projection extending closer than 5 feet from the property line for non-sprinklered buildings and 3 feet for sprinklered buildings.
- Provide a minimum of 7 ft dimension (in any direction) in all habitable rooms other than kitchen per CRC Section R304.3. At least one room shall have a minimum of 120 sq. ft. net floor area and all other habitable rooms a minimum of 70 sq. ft. per CRC Section R304.1 & R304.2.
- Provide door and window schedule including hardware.
- At least one side-hinged exterior door shall be provided for egress purposes with a minimum clear opening of 32" wide and 78" high per CRC Section R311.2.
- Indicate size and elevation of landings at all exterior exit doors as per CRC Section R311.2 & R311.3.
- There shall be a floor or landing on each side of a door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 2% slope as per CRC Section R311.3.
- The floor or landing shall be provided on each side of the exterior door at max. 1.5" below the top of threshold for egress doors and max. 7.75" for non-egress doors per CRC Section R311.3, except:
 - Exterior egress doors may have exterior landing not more than 7.75" below the top of the threshold provided the door does not swing over the landing, except storm and screen doors.
 - A landing is not required where a stairway of two or fewer rises is located on the exterior side of the non-egress door, provided that the door does not swing over the stairway.
- Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort per CRC Section R311.2.
- Each bedroom shall have an emergency egress and rescue window or door with a clear net opening of 5.0 square feet if located on a floor at grade level, and 5.7 square feet on all other floors. The window or door shall have a minimum clear opening height of 24", a minimum clear opening width of 20" and shall be installed so the bottom of the clear opening is not greater than 44" above the finished floor per CRC Section R310.1. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall have window wells and comply with CRC Section R310.2. Bars, grilles, grates or similar devices installed on rescue windows, window wells or exits shall be equipped with approved release mechanisms in compliance with CRC Section R310.4.
- Provide safety glazing in the locations as described in CRC Section R308.4. Refer to the "Window and Door Replacement" handout for additional information.
- Provide detailed information for stairway and landing construction. Indicate clear width (36" minimum per CRC Section R311.7.1), rise (4" minimum and 7.75" maximum per CRC Section R311.5.4.1), run (10" minimum per CRC Section R311.5.4.2), headroom (minimum 80" per CRC Section R311.7.2), landings (36" minimum length in travel direction and width not less than the stairway width per CRC Section R311.7.6).
- Spaces underneath interior stairways shall be protected with a minimum of ½" gypsum board on walls and under-stair surface and any soffits (CRC Section R302.7).
- Stairways shall have a minimum of one handrail of each continuous run of treads or flight of stairs with four or more risers installed in accordance with CRC Section R311.7.8
- Provide guards at open-sided walking surfaces, including stairs, ramps, landings and balconies, which are more than 30" above grade or floor below per CRC Section R312.1. Guards shall be not less than 42" in height, except where the top rail also serves as a handrail where the guard shall have a height of not less than 34" and not more than 38" per CRC Section R312.2.
- Open guards shall have intermediate rails or an ornamental pattern such that a sphere 4" in diameter cannot pass through, except openings in guards on the sides of stair treads where the sphere shall not exceed 4 3/8". The triangular opening formed by the riser, tread and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of 6" in diameter cannot pass through the opening as per CRC Section R312.1.3.

- For all occupied spaces, provide exterior openings for natural light (8% of floor area) per CRC Section R303.1.
 - Artificial lighting may be provided in-lieu of natural lighting to provide average of 6 foot-candles over the area of the room at a height of 30” above floor level per CRC Section R303.1 Exception 2.
 - An artificial light source shall be provided in the immediate vicinity of each landing of interior stairways and at top landing of exterior stairways per CRC Section R303.7.
 - Provide natural ventilation (4% of floor area) or a mechanical system for all habitable rooms per CRC Section R303.1.
 - Indicate the location of crawl space access with a minimum of 18”x24” floor opening or 16”x24” wall opening per CRC Section R408.4.
 - Provide cross ventilation for the space between the bottom of floor joists and the earth underneath the building per CRC Section R408.1. The net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of crawl-space area with min. one opening within 3 ft of each corner of the building. The total area of ventilation openings may be reduced to 1/1500 where the ground surface is treated with an approved vapor retarder material. Openings shall be covered with the materials as listed in CRC Section R408.2.
 - Provide a clear space of 24” in front of the water closet and a minimum 15” from its center to side wall or obstruction and a minimum of 30” center to center to any similar fixture per CPC Section 402.5.
 - Showers and walls above bathtubs with showerheads shall be finished with a non-absorbent surface to a height not less than 6 ft above the floor per CRC Section R307.2.
 - Shower stalls shall have a clear interior finish area of 1,024 square inches and be able to accommodate a minimum 30” circle at the threshold level. These clearances shall be maintained up to a height of 70” above shower drain per CPC Section 408.6.
 - In enclosed private garages attached to residences, provide a minimum of 1 sq. ft of ventilation directly communicable with the exterior at lower 12” of garage wall per Milpitas Municipal Code Section II-3.5-2.03. Openings shall not be installed in fire rated walls.
 - Private garages shall be separated from the dwelling unit and its attic area by a minimum of ½” gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8” Type X gypsum board. Door openings between a private garage and the dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8” inches thick. Doors shall be self-closing and self-latching. Doors between a sleeping room and a garage are not permitted. CRC Section R302.5 & R302.6.
 - Only gas fireplaces, pellet-fueled wood heater or E.P.A. certified wood-burning appliances may be added to or replace wood-burning appliances in existing buildings (MMC II-15.2.02). A “wood burning appliance” is defined as a fireplace, wood heater, or pellet-fired wood heater or a similar device burning solid fuel used for aesthetic or space-heating purposes (MMC II-15.3.08). A list of EPA approved devices can be found at <http://www.epa.gov/burnwise/woodstoves.html>.
 - The conversion of a gas fireplace to burn wood shall constitute the installation of a wood burning appliance and shall be required to comply with the above paragraph (MMC II-15.2.03).
- **Ceiling Plan:** Either on the Floor Plan or on a separate Ceiling Plan show all ceiling heights, finishes, electrical and mechanical work.
- Minimum ceiling height is 7’-0” in habitable spaces, hallways, bathrooms, toilet rooms, laundry rooms (CRC R305.1).
 - Provide attic accesses with a minimum of 22”x30” opening and minimum 30” clear headroom (CRC R807.1).
- **Roof Plan:** If skylights or other work on the roof is proposed, show a plan view of existing roof.
- Indicate roof slope, roof slope direction, existing and proposed roofing materials and its fire-resistive classifications.

- Roofing on houses in “Hillside Areas” must be Class A or B and designed to 95 mph wind speed, exposure C, standards per MMC II-3.5-2.03 & 2.06. All others must be a minimum of Class C or Class B when required by CRC Section R902.1 based upon fire hazard zone.
 - When the value of the work exceeds \$1,000, a spark arrester must be installed on fireplace chimneys if one does not exist per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section R1003.9.2.
 - Show the location and construction details of all skylights. Construction shall comply with CRC R308.6. Include skylights in the Title 24 Energy Compliance Reports. Refer to the “*Residential Skylights*” handout for additional information.
 - Enclosed attic & enclosed rafter spaces shall have cross ventilation not be less than 1/150 of the area of the ventilated space per CRC Section R806.2. A minimum of 1” airspace shall be provided between insulation and the roof sheathing per CRC Section R806.3. Where vapor retarder is used to reduce the ventilating area to 1/300 of ventilated space, indicate on the building section that the location of vapor retarder to be on the warm side of the attic insulation. The ventilating area may also be reduced to 1/300 provided 50%-80% is provided by ventilators installed at least 3 ft. above eave or cornice vents with the balance of the required area provided by eave or cornice vents.
- **Elevations:** Show exterior elevations or views of all sides of the building that will have new doors, windows, siding or other new construction. A minimum of two (2) exterior elevations should be provided along with exterior materials and notations. Show the existing building as well as the proposed new addition.
- Clearly show the maximum building height based on the definition in CRC Section R202.
 - Indicate if the lower level is a basement or story, based on the definitions in CRC Section R202.
 - Provide building with a weather-resistant exterior wall envelope per CRC Section R703.1. The exterior wall envelope shall include flashing as described in CRC Section R703.8. Specify the proposed exterior wall finish, material and thickness.
- **Cross Sections:** At least one (1) detailed cross section is required. Provide additional sections where needed to clarify the intended construction. Provide connection details between foundation, floors, walls, ceilings, roof and other construction, and how the new addition will be connected to the existing building at foundation, walls and roof. Be sure to indicate cross section cut lines on the Floor Plan.
- **Details and Notes:** Include all construction details of the foundation, floor, walls, ceilings and roof, connection details to existing building, details of fireplaces, handrails, guardrails, and stairs (including rise and run). Provide all necessary notes to explain the proposed construction.
- The top of any exterior foundation shall extend above the elevation of the street gutter at point of discharge at the inlet of an approved drainage device a minimum 12 inches plus 2% per CRC Section R403.1.7.3. Provide elevations on the site plan to show compliance.
 - Provide a minimum of 18” clearance between wood joists and 12” between wood girders and exposed earth, otherwise wood shall be naturally durable or preservative-treated wood per CRC Section R317.1.
 - Provide/detail draft stops in floor/ceiling spaces above per CRC Section R302.12.
 - Indicate the exterior finishes including the water-resistive barrier and all flashings. Refer to CRC Chapter 7 for specific requirements.
 - Indicate two layers of Grade D paper between plywood shear panel and exterior lath per CRC Section R703.7.3.
 - Provide details for a corrosion-resistant weep screed on all exterior stud walls at or below the foundation plate line a minimum of 4” above grade, or 2” above paved areas per CRC Section R703.7.2.1.
 - Provide veneer design and installation details: thickness, anchors, backing, lintels and support systems.

4. STRUCTURAL PLANS: The following are minimum structural plan requirements for most projects based on CRC:

- ❑ **Foundation Plan:** Indicate existing and new foundations, type of foundation, and size and depth of footings or piers and grade beams. Include a dimensioned foundation plan with sufficient details to clearly show foundation construction. Include connection details of new floor and foundation to existing floor and foundation. For residential additions, new foundations must match the existing foundation type. For example, if the original foundation is a pier and grade beam type, the new foundation must also be a pier and grade beam type. Otherwise, the foundation must be an engineered system prepared by a registered engineer with a soils report, except additions to R3 occupancies without an available soils report and where the existing foundation system is a standard “T” type or a pier and grade beam type, may be constructed in accordance with MMC Section II-3.5-2.04 at the option of the property owner (refer to the “*Residential Concrete Foundation*” handout for additional information). All foundation designs for new residences and additions in Hillside areas shall be designed and prepared by a civil or structural engineer licensed in the State of California and require a soils report. Provide a letter from Soils Engineer confirming the foundation plan, grading plan and specifications have been reviewed and it has been determined that the recommendations in the soil report are properly incorporated in the plans.
- ❑ **Floor Framing Plan:** Provide size, spacing and direction of floor beams or joists; include sub-floor sheathing and nailing.
- ❑ **Roof Framing Plan:** Show size and location of roof beams, roof rafters and ceiling joists span and sizes, overhangs and details, and indicate any required modifications to the existing roof framing.
- ❑ **Pre-Fabricated Roof Trusses:** If trusses are to be used, provide 2 copies of the truss shop drawings, layout plan and calculations with the engineer’s stamp and wet signature, reviewed and signed approved by the project architect, engineer or designer. If shop drawings are not submitted for review prior to issuance of the building permit, it shall be noted on the first page of the drawings the truss shop drawings will be a deferred submittal. The deferred submittal will require payment for an additional two hours of plan check review time. Submit the truss drawings for review and approval prior to fabrication of the trusses.
- ❑ **Wind and Seismic Bracing.** Indicate on the plans how the construction is to be braced against wind and seismic forces, either by conventional construction means or by engineered shear walls. If bracing is by engineered shear walls, dimension the length of each shear wall and show the structural sheathing material, nailing, bolting and hold downs where needed. Wind and seismic bracing calculations are required for “Hillside Area” houses, design for basic wind speed of 95 mph and exposure C.
- ❑ **Structural Details and Notes:** Provide structural details such as post-to-beam connections, framing details, shear transfer details, material notes and specifications.
 - Sleepers and sill plates on concrete or masonry in direct contact with the earth shall be of naturally durable or preservative-treated wood per CRC Section R317.1.
 - Wood framing members, including wood sheathing, that rest on exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood per CRC Section R317.1.
 - Provide 1/2” anchor bolts embedded a minimum of 7” into the concrete spaced a maximum of 6 feet apart per CRC Section R403.1.6 with 0.229” x 3” x 3” plate washer per CRC Section R602.11.1.
 - Lots shall be graded to drain surface water away from foundation walls with grade falling a min. of 6” within the first 10 feet. Impervious surfaces within 10 feet of the building foundation shall be sloped a min. of 2 percent from the building per CRC Section R401.3.

- ❑ **Structural Calculations:** Structural calculations are required for building components, including vertical load carrying members and the lateral force resisting system, which do not meet “Conventional Construction” provisions as defined in the California Residential Code and the Milpitas Municipal Code. If calculations are required, they must be stamped and signed by a California licensed architect or engineer. Calculations must be numbered by page and indexed for complex projects.

5. MECHANICAL, ELECTRICAL and PLUMBING PLANS:

Plans shall include all information necessary to show how the space is to be heated, cooled and ventilated, how the plumbing fixtures are connected to plumbing systems and how the electrical energy is distributed and connected to the building power system. This can be done on the architectural drawings or on separate plans.

Specific mechanical, plumbing and electrical plan requirements will depend largely upon the extent, nature and complexity of the work to be done. The following are general guidelines for preparation and submittal of these plans.

- ❑ **Mechanical Plans:** Show on the plans the installation of all new mechanical work. NOTE: All new equipment weighing more than 400 pounds requires structural calculations.
 - All habitable rooms must have a heating system capable of maintaining a room temperature of 68° F at a location of 3 feet above the floor and 2 feet from exterior walls. Portable heaters shall not be used for compliance. Indicate on the plans the heating system or method to be used. CRC Section R303.9.
 - Show the location of all new HVAC equipment. Provide a one-line layout of the proposed duct and register system. Include duct length, size, register/boot size, and cold air return location.
 - Whole-Building ventilation for Indoor Air Quality shall be provided for additions over 1,000 square feet per CEnC Section 150(o).
 - If existing equipment will serve the new Conditioned Floor Area (CFA), and the new CFA is more than 20% of the existing CFA, provide Performance Title 24 Calculations to show the existing equipment is adequate.
 - Provide an equipment schedule with all specifications noted.
 - Specify and note how condensate drains are routed and discharged via an indirect waste pipe to an approved location.
 - For attic installed equipment, provide a section through the attic showing the location, size and weight of all equipment, details of equipment anchorage, how equipment is being supported, size and location of access opening, distance from opening to equipment, size and location of platforms and walkways, and required headroom and clearances.
 - The walkway to attic appliance shall not exceed 20 ft unless the attic height exceeds 6 ft and it shall have solid flooring not less than 24” wide. There shall be a 30” x 30” minimum working platform in front of the service side of the appliance per CMC Section 904.10. There shall be a 120 volt receptacle outlet and a light fixture installed near the appliance and the light switch shall be near the attic access entrance.
 - Ducts in a private garage and ducts penetrating the walls or ceilings separating the dwelling unit from the garage shall be constructed of a minimum 0.019 inch (no. 26 gage) sheet steel and shall have no openings into the garage per CRC Section R302.5.2.
 - Provide aggregate glazing area in windows of at least 3 sq ft, ½ of which must be openable in bathrooms, water closet compartment and other similar rooms per CRC Section R303.3, unless exhaust fan directly vented to outside is provided. When exhaust fan is provide, provide fan location, and size fan a minimum of 20 cfm for continuous system operation with a maximum of 1 sone per CEnC. For intermittent bath fan operation, provide minimum ventilation airflow of 50 cfm and maximum of 3.0 sone rating per CEnC.
 - Provide dryer duct layout, size and length. If duct size or length does not comply with minimum code requirements (CMC Section 504.3.1), provide booster fan or engineering justification.

- Factory-built fireplaces shall be installed in accordance with their listing and the manufacturer's installation instructions. Chimneys shall extend a minimum of 3 feet above the highest point where it passes through a roof and at least 2 feet higher than any portion of a building within a horizontal distance of 10 feet per CMC Section 802.5.4. The manufacturer's instructions must be present on the job site for the installer and the inspector.
 - Refer to the "*Air-conditioning & Furnace*" handouts for more information.
- **Electrical Plans:** Show on the plans the installation of all new electrical work. Refer to the "*Lighting, Switches and Receptacles*" handout for more information.
- Show on the plans the size and location of electrical service, any other panels, all switches, lights, receptacles, smoke detectors, and any equipment requiring electrical connections (ranges, furnaces, etc.).
 - Provide panel schedules and load calculations to verify service is adequate for the loads.
 - New electrical panels shall be installed in accordance with CEC Article 230.70, Article 240.24, and MMC Section II-6-2.03. Refer to the "*Electrical Panel*" handout for more information.
 - Grounding electrode systems in all new buildings shall be an electrode encased by at least two inches of concrete located within and near the bottom of a concrete foundation or footing that is in direct contact with earth. The electrode shall consist of at least 20 feet of one or more steel reinforcing bars or rods, of not less than ½ inch diameter. The connection side of this concrete-encased electrode shall be located remotely away from the main electrical service equipment per MMC Section II-6-2.04.
 - Provide drawing showing branch circuit layout.
 - Note when receptacles are Ground-Fault Circuit-Interrupter (GFCI). GFCI protected receptacles shall be installed in bathrooms, garages, outdoors, crawl spaces, kitchen, unfinished basements and receptacles within 6 ft of the outside edge of laundry, utility and wet sinks. (CEC 210.8).
 - Where branch-circuit wiring supplying 120-volt 15 and 20-ampere outlets in family rooms, dining rooms, living rooms, kitchens, laundry rooms, parlors, libraries, dens bedrooms, sunrooms, recreation rooms, closets, hallways or similar rooms is modified, replaced or extended, the branch circuit shall be protected as per CEC 210.12(B) by:
 - 1) A listed combination AFCI located at the origin of the branch circuit, or
 - 2) A listed outlet branch-circuit AFCI located at the first receptacle outlet of the existing branch circuit
 - Receptacles install outdoors shall have a listed weatherproof cover.
 - All 120-volt, 15 and 20 amp receptacles shall be listed tamper-resistant.
 - Every room, kitchen and living space of dwelling units shall be provided with receptacle outlets installed so that no point along the floor line in any wall space is more than 6 ft from a receptacle outlet per CEC Section 210.52. Refer to the "*Kitchen Remodel*" and "*Bathroom*" handouts for additional requirements.
 - Provide a wall switch controlling exterior light at all exterior entrances or exits per CEC 210.70. Exterior lights shall be high efficacy (fluorescent or LED) or controlled by a motion sensor in addition to one of the following: a photocontrol, astronomical time clock or Energy management control system (EMCS). Photocontrol, astronomical clock and EMCS shall not have an override or bypass switch (CEnC sec.150 (k)).
 - Lighting installed in bedrooms, living rooms, home offices, dining rooms & nooks (if switched separately from kitchens), hallways, attic spaces and closets 70 sf and larger shall be high-efficacy or low-efficacy controlled by a vacancy sensor or low-efficacy controlled by a dimmer switch. These options may be used in combination with one another, for example high-efficacy downlights and dimmable low-efficacy track lights.
 - All lighting must have readily accessible manual controls, allowing occupants easy control of lighting in the space. (CEnC 150.0(k)2)
 - High-efficacy lighting must be switched separately from low-efficacy lighting. Additionally, each lighting layer that serves a unique function should operate independently. (CEnC 150.0(k)2)
 - Lighting that is integral to ceiling fans must be separately switched from the exhaust fan (CEnC 150.0(k)2).
 - Lighting installed in garages, bathrooms, laundry rooms and utility rooms are required to be high-efficacy and controlled by a vacancy sensor.
 - Lighting integral to garage door openers do not have to be high-efficacy when there are no more than two screw-base sockets and the lights automatically turn ON and OFF.

- Fixtures recessed into ceilings shall be listed for zero clearance insulation contact (IC), have a label that certifies that the fixture is airtight with air leakage less than 2.0 CFM at 75 Pascal's (AT), be sealed with a gasket or caulk between the luminaire housing and ceiling, and shall have all air leak paths between conditioned and unconditioned spaces sealed with a gasket or caulk (CEnC 150.0(k)1).
- A list of High efficacy lighting certified as meeting the requirements of the Energy Code is available at www.appliances.energy.ca.gov.

□ **Plumbing Plans:** Show on the plans the installation of all new plumbing work.

- Show on the plans the location of all plumbing fixtures, hose bibbs and water heaters.
- Include a complete list of fixtures and their gas/water demands. Refer to the "*Kitchen Remodel*" and "*Bathroom Remodel*" handouts for maximum flow rates for fixtures.
- Provide one line layout drawing for the proposed waste (drain) and vent system, including fixture count, pipe size and length, fixture location, clean-out locations, slope and connection to existing lateral location. Justify size of drainage piping as per CPC 703.
- Provide one line layout drawing for the proposed water system, including total developed length (meter to most remote fixture), service and meter size, branch lengths, total fixture units, branch fixture units, pipe size and length, and indicate method used for sizing (CPC 610.0).
- Provide one line layout drawing of the proposed gas piping system, including total developed length, total demand (BTU & CFH), appliance location with BTU/CFH listed for each appliance, and branch length and pipe size, and indicate method used for sizing (CPC 1216.0). If the new gas piping is not installed back to the meter, include all existing appliances and pipe length and sizes.
- Show the location, materials and installation requirements of all piping located outside the building.
- Note the dimensions where minimums must be met at fixtures (toilets, lavatories, shower stalls, etc.).
- Detail the installation of the water heater including seismic bracing. Refer to the "*Residential Water Heater*" handout for more information.
- Show the requirement for installation of gas seismic and excess flow shut-off devices. Refer to the "*Natural Gas Line*" handout for more information.
- Where a toilet is installed on a floor level that is lower than the next upstream manhole cover of the public sewer, or the building cleanout, an approved type of backwater valve shall be installed.

6. ENERGY REQUIREMENTS:

□ **Insulation:** Indicate on the plans the exterior wall, ceiling and under floor insulation type and thickness. Minimum insulation required as per CEnC Chapter 7 below:

- 2x4 walls in additions 700 sf and smaller requires a U factor of 0.102 or R-13 insulation.
- 2x6 walls in additions 700 sf and smaller requires a U factor of 0.074 or R-19 insulation.
- Walls in additions greater than 700 sf requires a U factor of 0.065 or R-15 +4 or R-13 +5. The + number represents continuous insulation (R-4 or R-5) usually furnished by installing ridged insulation on outside face of walls. The minimum U factor can be met with cavity insulation along, continuous insulation alone or any combination of the two.
- Roofs/ceilings requires a U factor of 0.031 or R-30 insulation.
- Raised wood floors requires a U factor of 0.037 or R-19 insulation.
- Raised concrete floors requires a U factor of 0.269.

□ **Radiant Barrier:** A radiant barrier above the attic space is required for all additions and whenever existing roof sheathing is removed.

□ **Windows:** Indicate the size and type of all new windows and note the U-factor and SHGC ratings. Maximum U-factor is 0.32 and maximum SHGC is 0.25.

- Additions 400 sf or less are allowed a total glazing area up to 75 sf or 30% of the CFA, whichever is greater, and have up to 60 sf west-facing glazing. (CEnC 150.2(a)1B)
 - Additions greater than 400 sf and no more than 700 sf are allowed a total glazing area up to 120 sf or 25% of the CFA, whichever is greater, and have up to 60 sf of west-facing glazing. (CEnC 150.2(a)1B)
 - Additions greater than 700 sf and less than 1,000 sf are allowed a total glazing area up to 175 sf or 20% of the CFA, whichever is greater, and have up to 70 sf or 0.5% of the CFA of west-facing glazing, whichever is greater. (CEnC 150.2(a)1A)
 - Note none of the above options allows credit for glazing when removed to make way for the addition.
 - Note the total allowed fenestration and west-facing glazing include skylights.
- ❑ **Water Piping:** All new hot water piping must be insulated per CEnC Section 150.0(j)2. See “*Water Piping*” handout for specific requirements.
- ❑ **Lighting:** See Electrical Plans above for lighting and switching requirements.
- ❑ **Equipment:** Equipment shall meet California Energy Code requirements. A list of equipment certified as meeting the requirements of the Energy Code is available at www.appliances.energy.ca.gov. Indicate on the mechanical drawings the AFUE or HSPF ratings of heating equipment and SEER or EER rating of cooling equipment. See the *Furnace* handout for additional information.
- ❑ **Thermostat:** Setback thermostats that comply with CEnC 110.2(c) (programmable for 4 periods within 24 hours) shall be installed with all new or modified space heating systems.
- ❑ **Load calculations:** Load calculations per ASHRAE SMACNA or ACCA is required whenever heating/cooling equipment or area of conditioned space served is changed.
- ❑ **Ventilation:** Additions greater than 1,000 sf must meet Package A whole house fan requirements [CEnC 150.2(a)].
- ❑ **Ducts:** Indicate on the mechanical drawings the duct insulation type and thickness, and if HERS testing of the duct sealing is required. Minimum duct insulation is R-6. HERS testing is required any time more than 40 lf of duct is added or replaced. [CEnC 150.0(m)11].
- ❑ **Title 24 Energy Compliance Reports:** Provide all appropriate Compliance Forms. Forms may be obtained at <http://www.energy.ca.gov/2015publications/CEC-400-2015-032/appendices/forms/>.

The following Prescriptive Compliance forms may be required at time of permit application:

- CF1R-NCB-01-E Newly Constructed Buildings, also for additions over 1,000 sq. ft.
- CF1R-ADD-01-E Additions 1,000 sq. ft. or Less.
- CF1R-ADD-02-E Additions 300 sq. ft. or Less.
- CF1R-ALT-01-E Residential Alterations.
- CF1R-ALT-02-E Alterations to Space Conditioning Systems.
- CF1R-ALT-05-E Alterations that do not required HERS field verification.

The following Installation forms may be required to be completed and presented to the Building Inspector at time of final inspection:

- CF2R-ADD-02-E Additions 300 sq. ft. or Less.
- CF2R-ALT-05-E Alterations that do not required HERS field verification.
- CF2R-ENV-01-E Fenestration Installation.
- CF2R-ENV-02-E Envelope Air Sealing.
- CF2R-ENV-03-E Insulation Installation.
- CF2R-ENV-04-E Roofing-Radiant Barrier.
- CF2R-LTG-01-E Lighting-Single Family Dwellings.
- CF2R-MCH-01-E Space Conditioning Systems Ducts and Fans.
- CF2R-PLB-02-E Single Dwelling Unit Hot Water System Distribution.

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

- In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters is required prior to the final inspection as follows: (CRC R314 & R315 and CBC 907.2.11)

Smoke Alarms listed in accordance with UL 217, listed and approved by the California State Fire Marshal and tested & maintained in accordance with the manufacturer's instructions shall be installed in existing or new dwellings as follows: **in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms and on each story of the dwelling.** In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level. Alarms that no longer function shall be replaced. New smoke alarms that are solely battery powered must have a non-replaceable and non-removable battery capable of powering the smoke alarm for at least 10 years. Fire alarm systems shall be permitted in lieu of smoke alarms if they comply with the provisions of NFPA 72. The installation of smoke alarms and smoke detectors shall also comply with the following requirements:

1. Smoke alarms shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.
2. Smoke alarms shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F or exceed 100°F.
3. Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, alarms shall be mounted on an inside wall.
4. Smoke alarms shall be installed a minimum of 20 feet horizontal distance from a permanently installed cooking appliance, except Ionization smoke alarms with an alarm-silencing switch or Photoelectric smoke alarms shall be permitted to be installed 10 feet or greater from a permanently installed cooking appliance and Photoelectric smoke alarms shall be permitted to be installed greater than 6 feet from a permanently installed cooking appliance where the kitchen or cooking area and adjacent spaces have no clear interior partitions and the 10 foot distances would prohibit the placement of a required smoke alarm or smoke detector. Smoke alarms listed for use in close proximity to a permanently installed cooking appliance can be installed in accordance with their listing.
5. Smoke alarms shall be installed not less than a 3 foot horizontal distance from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by the code.
6. Smoke alarms shall not be installed within a 36 inch horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
7. Smoke alarms shall not be installed within a 36 inch horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan.
8. Where stairs lead to other occupied levels, alarm shall be located so that smoke rising in the stairway cannot be prevented from reaching the alarm by an intervening door or obstruction.

9. For stairways leading up from a basement, alarms shall be located on the basement ceiling near the entry to the stairs.
10. For tray-shaped ceilings (coffered ceilings), alarms shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 inch vertically down from the highest point.
11. Smoke alarms installed in rooms with joists or beams shall comply with the requirements of NFPA 72.
12. Heat alarms and detectors installed in rooms with joists or beams shall comply with NFPA 72.

Carbon Monoxide Alarms listed in accordance with UL 2034, or combination carbon and smoke alarm listed in accordance with UL2034 and UL217, listed and approved by the California State Fire Marshal and installed and maintained in accordance with the manufacturer's instructions shall be installed in existing or new dwellings having a fuel-fired appliance, fireplace or an attached garage with an opening communicating with the dwelling as follows: **outside each separate sleeping area in the immediate vicinity of bedroom(s) and on every occupiable level of a dwelling unit.** If there is a fuel-burning appliance located with a bedroom or its attached bathroom, an alarm shall be located within the bedroom.

Power supply: Smoke and carbon monoxide alarms shall receive their primary power from the building wiring and shall be equipped with a battery back-up. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection. Smoke and carbon monoxide alarms are permitted to be solely battery operated (carbon monoxide alarms can also be plug-in with battery back-up) in existing buildings where no construction is taking place; 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; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing or mechanical systems or the installation, alteration or repair of electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure.

Interconnection: Where more than one smoke or carbon monoxide alarm is required to be installed within an individual dwelling or sleeping unit, the 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; 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; where repairs or alterations are limited to the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck; or when work is limited to the installation, alteration or repairs of plumbing, mechanical or electrical systems which do not result in the removal of interior wall or ceiling finishes exposing the structure.

Spark arresters: When a permit has been issued and the value of the work exceeds \$1,000, a spark arrester must be installed on all fireplace chimneys if one does not already exist, per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section 1003.9.2.

8. OTHER DRAWINGS:

- ❑ **Demolition Plans:** A separate permit is required for the demolition of any existing structures. Refer to the "Demolition" handout for additional information.
- ❑ **Swimming pool and/or Spa Plans:** New pools and/or spas require a separate permit. Pool and spa drawings can be included with the construction drawings or submitted separately. Refer to the "Pool and Spa Requirements for Single Family Residence" handout for additional information.

9. OTHER APPROVALS:

- ❑ **Engineering Department:** Prior to completion of any plans, the Engineering Department should be contacted at (408) 586-3329 to find out the requirements due to the location and any easements, and if the property is located in a special flood hazard area.
- ❑ **Planning Department:** Prior to completion of any plans, the Planning Department should be contacted at (408) 586-3279 to find out the requirements for the proposed location and type of the project.
- ❑ **Fire Department:** Fire protection systems for homes in “Hillside Areas” and all homes provided with fire sprinklers or fire alarms shall have separate approval by the Fire Department. Contact the Fire Department for more information at (408) 586-3365.
- ❑ **Santa Clara County Environmental Health Department:** Homes may be subject to Health Department review and approval if connected to a private sewage disposal system (septic) or if an on-site water well must be capped or relocated. If required, drawings approved by the Health Department must be submitted prior to permit issuance.
- ❑ **Home Owners Association:** If the property is regulated by a Home Owners Association, any exterior work must have approval of the Association. It is the property owner’s responsibility to obtain the approval.
- ❑ **School District:** Residential additions of 500 square feet or more require payment of school impact (developer) fees. Refer to the handout “*School Impact Fees*” for additional information.

NOTES:

- ❑ If one or more of the required items mentioned above are omitted from the submittal plans, the application may be considered as incomplete and not ready for checking or approving.
- ❑ **Revisions:** Once the permit has been issued, any changes in the design must be approved by the City. Submittal documents shall be reviewed by the Architect or Engineer of record with a notation indicating that the changes have been reviewed and are in general conformance with the design of the building prior to being submitted to the City for approval. Additional fees will be due for each revision at time of submittal.



EPA Renovation, Repair and Painting Rule

Does the RRP Rule apply to you?

The rule applies to all jobs in pre-1978 housing (i.e. "Target Housing") and child occupied facilities where more than 6 square feet per room or 20 square feet outside will be "disturbed" by worker(s) being compensated for the job. This includes landlords.

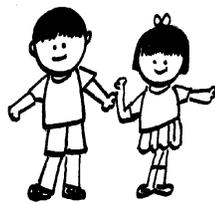
Where does the RRP Rule Apply?

The rule applies in Target Housing and Child-Occupied Facilities*



Target Housing - A house or apartment (including mobile homes) built before January 1, 1978 except for:

- 1) 0-bedroom units (like dorm rooms or studio apartments)
- 2) housing that is officially designated for the elderly or the handicapped
- 3) housing that has been tested by a State Certified Lead Inspector and found to be free of lead based paint.



Child Occupied Facility - A building, or portion of a building, constructed prior to 1978, visited by the same child, 6 years of age or under, on at least 2 different days within any week, provided that each day's visit lasts at least 3 hours, the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Such facilities may include, but are not limited to, day-care centers, preschools and kindergarten classrooms.

What does the RRP Rule Require? *California Law requires lead-safe work practices for all pre-1978 buildings.

1. **Pamphlet Distribution**—Contractors must give clients a pamphlet called "Renovate Right" and get a signed receipt before beginning a job.
2. **Individual Certification**—At least one RRP Certified Renovator is required at each job site. Certification involves taking a 1-day class from an EPA Accredited Training Provider.
3. **Firm Certification**—In addition to individual certification, each firm, agency or non-profit must also become RRP certified.
4. **On-the-Job-Training**—RRP Certified Renovators are required to train all non-certified people at the job site. Note: Contractors who work on buildings receiving Federal assistance, including Section 8, must have everyone trained in the classroom, or have a state-certified lead in construction supervisor present.
5. **Paint Testing**—The rule requires contractors to either test paint they will disturb BEFORE beginning a job, or assume that it is lead-based. In California contractors may not test paint. Instead, current law requires that they must assume that all surfaces in all structures built before 1978 contain lead based paint. The only people who can test for lead-based paint in California are State Certified Lead Inspectors/Risk Assessors.
6. **Use Lead Safe Work Practices**—The RRP Rule requires that "Lead Safe Work Practices" be used when disturbing more than six (6) square feet per room inside or more than twenty (20) square feet of painted surfaces outside.
7. **Cleaning Verification**—At the end of each job, contractors are required to do a "cleaning verification" to make sure they cleaned up properly.

FOR ADDITIONAL INFORMATION, VISIT
The Environmental Protection Agency www.epa.gov/getleadsafe
Get the Lead Out Coalition www.getleadout.org



WATER CONSERVING CERTIFICATE OF COMPLIANCE

Project Address: _____ Permit Number: _____

If the Building Inspector cannot physically inspect all plumbing fixtures in the building or cannot verify compliance due to lack of product markings or data, this Certificate of Compliance may be signed by the property owner(s) and given to the Building Inspector. The Building Inspector must inspect and verify all plumbing fixtures or receive this Certificate prior to final inspection.

California Civil Code Section 1101 requires the following. **Note this law applies only to properties built and available for use or occupancy on or before January 1, 1994.**

On or before January 1, 2017, for any **one and two family** residential building, all non-compliant plumbing fixtures shall be replaced with water-conserving plumbing fixtures (regardless of whether property undergoes alterations or improvement).

As of January 1, 2014, for any **multi-family** (more than two units) residential building and any **commercial** building, all non-compliant plumbing fixtures shall be replaced with water-conserving plumbing fixtures in the following circumstances:

1. Additions, if the sum of concurrent building permits by the same permit applicant would increase the floor area of the building by more than 10%, all non-compliant fixtures must be upgraded throughout the building. This includes all common area plumbing fixtures as well as fixtures in private individual units or tenant unit owned by the same owner.
2. Alterations or improvements, if total construction cost in the building permit exceeds \$150,000, all non-compliant fixtures that service the specific area of the alteration or improvement will be required to be upgraded.
3. Any alteration to a room that contains non-compliant plumbing fixtures will require all fixtures in that room to be upgraded.

On or before January 1, 2019, for any **multi-family** (more than two units) residential building and any **commercial** building, all non-compliant plumbing fixtures shall be replaced with water-conserving plumbing fixtures (regardless of whether property undergoes alterations or improvement).

The requirements of this law shall not apply to any of the following:

1. The requirements of this law shall be postponed one year from the date of issuance of a demolition permit for the building. If the building is not demolished after one year, the provision of this law shall apply even though the demolition permit is still in effect or a new demolition permit has been issued.
2. Registered historical sites.
3. Real property for which a licensed plumber certifies in writing that, due to the age or configuration of the property or its plumbing, installation of water-conserving plumbing fixtures is not technically feasible.
4. A building for which water service is permanently disconnected.
5. The property was built and available for use or occupancy after January 1, 1994.

I/We, the owner(s) of this property, certify under penalty of perjury:

- All existing plumbing fixtures meet the minimum requirements of water-conserving as noted below.
- All non-compliant plumbing fixtures have been replaced with water-conserving plumbing fixtures in accordance with Civil Code Sections 1101.1 through 1101.8, the current California Plumbing Code and California Green Building Standards Code, and manufacturer's installation requirements, and that the water-conserving plumbing fixtures comply with the requirements as noted below.
- I/We are exempt for reason #____ listed above. If for reason #3, attached is a letter from a licensed plumber.

Signature of Property Owner(s)

Print Name(s)

Date: _____

The following non-compliant fixtures shall be replaced with water-conserving fixtures as noted: (CGBC 4.303 & 5.303)

- Existing water closets that exceed 1.6 gallons per flush shall be replaced with one that has an effective flush volume not to exceed **1.28 gallons per flush**. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type toilets. The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.
- Existing urinals that exceed 1.0 gallons per flush shall be replaced with one that uses not more than an average of **0.125 gallons per flush** (0.47 L) for wall mounted and **0.5 gallons** (1.89 L) for other types of urinals.
- Existing single shower heads that exceed 2.5 gallons per minute shall be replaced with one that has a maximum flow rate of not more than **2.0 gallons per minute** at 80 psi. Shower heads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.
- When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed **2.0 gallons per minute** at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. A hand-held shower shall be considered a showerhead.
- Existing residential lavatory faucets that exceed 2.2 gallons per minute shall be replaced with one that has a maximum flow rate not to exceed **1.2 gallons** (4.54 L) per minute at 60 psi. The minimum flow rate shall not be less than 0.8 gallons (3.03 L) per minute at 20 psi.
- Existing lavatory faucets in residential common and public use areas (outside of dwellings or sleeping units) and in commercial areas that exceed 2.2 gallons per minute shall be replaced with one that has a maximum flow rate not to exceed **0.5 gallons per minute** at 60 psi.
 - Metering faucets shall have a maximum flow rate of **0.20 gallons per cycle commercial** or **0.25 residential**.
- Existing kitchen faucets that exceed 2.2 gallons per minute shall be replaced with one that has a maximum flow rate not to exceed **1.8 gallons per minute** at 60 psi. Residential kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.
 - Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.