



# HOME Investment Partnerships (HOME) and National Housing Trust Fund (NHTF) Combined Multifamily Rehabilitation Standards

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## I. Purpose and Scope of Standards

The California Department of Housing and Community Development (HCD) provides these Multifamily Housing Rehabilitation Standards in order to comply with the requirements of the U.S. Department of Housing and Urban Development (HUD) HOME Investment Partnership Program (HOME) and National Housing Trust Fund (HTF) and ensure uniformity of application in its HOME and/or Housing Trust Fund rehabilitation portfolio, with the goal of providing decent, safe, sanitary, efficient, and sustainable affordable housing.

These standards are designed to be used with multifamily properties of five (5) or more units. These standards also apply to multifamily rental housing projects funded through the HOME-American Rescue Plan (HOME-ARP) program, which is administered through HOME. These standards do not apply to HOME-ARP non-congregate shelter projects. Any reference to HOME applies to HOME-ARP, unless otherwise stated. The State, at its convenience, may apply these standards, in whole or part, to other federally funded or State-funded multifamily housing programs.

Furthermore, housing occupied or expected to be occupied by a family receiving tenant-based rental assistance must meet the requirements set forth in 24 CFR Part 982.401 (Housing Quality Standards (HQS) (or successor inspection standards issued by HUD [see Section II. Applicable Laws, Regulations, and Codes below for additional information])).

The contents of these standards include:

- I. Purpose and Scope of Standards
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## II. Applicable Laws, Regulations, and Codes

The Multifamily Housing Rehabilitation Standards are not meant as a substitute for a true understanding of all the laws and regulations that may apply to an individual project. The following list includes statutory and regulatory requirements applicable to projects funded with federal funds, as well as State and federal laws and regulations that may apply to certain projects. These laws, regulations, and requirements are listed here as if fully set forth herein:

- HOME and its implementing regulations at 24 CFR Part 92, HTF and its implementing regulations at 24 CFR Part 93, or other program regulations (depending on the funding source used).
- Notice CPD-21-10: Requirements for the Use of Funds in the HOME-ARP Program and Appendix: Waivers and Alternative Requirements for Implementation of the HOME-ARP Program.
- Broadband infrastructure, as defined in 24 CFR Part 5.100, for substantial rehabilitation of a building with more than 4 rental units, also defined in 24 CFR Part 5.100.
- Accessibility Requirements in 24 CFR Part 8, which implements Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), and Titles II and III of the Americans with Disabilities Act (42 U.S.C. 12131 – 12189) Implemented at 28 CFR Parts 35 and 36, as applicable. Covered multifamily dwellings, as defined at 24 CFR Part 100.201 shall also meet the construction requirements at 24 CFR Part 100.205.
- National Environmental Protection Act (NEPA) Environmental Review standards and requirements and each program's implementing regulations including, but not limited to, 24 CFR Part 58 (e.g., HOME, CDBG) and 24 CFR Part 93.301(f)(2) (HTF).
- California Environmental Quality Act (CEQA) Environmental Review standards and requirements in accordance with Public Resources Code Division 13 [21000–21189] and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3).
- National Environmental Protection Act (NEPA) 24 CFR Part 58.
- The National Historic Preservation Act (NHPA), particularly sections 106 and 110; 36 CFR Part 800; and 36 CFR Part 61.
- Environmental Protection Agency (EPA) regulations including the RRP regulations for Lead-Based Paint (40 CFR Part 745).
- EPA regulations for the Resource Conservation and Recovery Act (RCRA), dealing with hazardous materials.



- Lead Safe Housing Rule (LSHR), 24 CFR Part 35.
- California Department of Public Health (CDPH) - Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards (17 CCR, Section 35001 et seq).
- Occupational Safety and Health Administration (OSHA) - Lead, Construction Industry, 29 CFR Part 1926.62.
- Cal/OSHA - Lead in Construction Standard at 8 CCR Section 1532.1 et seq.
- OSHA – Asbestos in Work, 29 CFR Part 1926.1101.
- Cal/OSHA - Asbestos, 8 CCR Section 1529.
- EPA Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61, Subpart M), Method for the Determination of Asbestos in Bulk Building Materials (US EPA/600/R-93/116), and the Asbestos Worker Protection Rule (40 CFR Part 763, Subpart G).
- Local Codes and Ordinances: Current locally adopted Building, Housing and Zoning Codes and ordinances, including any Disaster Mitigation Standards.
- State Building Standards Code, as applicable, found at Cal. Code Regs, Title 24, and any amendments to the Code made by local ordinance, including, but not limited to:
  - California Green Building Standard Code (CALGreen), California Code of Regulations, Title 24, Part 11 (when additions or alterations will increase the building's conditioned area, interior volume, or size); and
  - Chapter 11A Housing Accessibility and Chapter 11B Accessibility to Public Buildings, Public Accommodations, Commercial Buildings and Public Housing.
- H&SC, Division 13, Part 1.5 - Regulation of Buildings Used for Human Habitation.
- 25 CCR, Division 1, Chapter 1, Subchapter 1 – State Housing Law Regulations and Chapter 7, Subchapter 17 – State Home Investment Partnership Act Program and Subchapter 19 – Uniform Multifamily Regulations.
- Uniform Physical Conditions Standards (UPCS) or successor inspection standards issued by HUD pursuant to 24 CFR Part 5.703 (proposed to be NSPIRE).
- Housing Quality Standards (HQS) or successor inspection standards issued by HUD pursuant to 24 CFR Part 982.401 (proposed to be NSPIRE).
- HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- OMB Common Rule (OMB Circular A-102), as codified by 2 CFR Part 200.

**Note:** At the time of publication and adoption of these Standards, the adopted codes referenced are believed to be those in force. As standards and codes are updated,



changed, and put into effect by governing authorities having jurisdiction, the new standards and codes will apply in lieu of those referenced.

**Notice:** It is important to note that these Standards serve as a starting point for approved eligible Multifamily Rehabilitation activities. Additional project requirements, rules, regulations may apply and may vary depending on local jurisdiction and local codes. This is not meant to be an all-inclusive list of all project requirements that may apply to an actual project. IT IS THE RESPONSIBILITY OF THE PROJECT PROPONENT OR OWNER TO ENSURE COMPLIANCE WITH ANY AND ALL CURRENT PROGRAM REQUIREMENTS, RULES, REGULATIONS THAT MAY BE REQUIRED IN ADDITION TO THE CONDITIONS PROVIDED IN THESE STANDARDS.

Work shall comply with all applicable laws and regulations. Work shall be approved for conformance and/or occupancy by the local Building Department and/or any other Enforcing Agency having jurisdiction at the conclusion of work and prior to occupancy. Documentation of conformance shall be provided to HCD. HCD will determine compliance with each program's specific property standards as set forth at 24 CFR Part 92.251 Property Standards (HOME) and 24 CFR Part 93.301 Property Standards (HTF). HOME-ARP rental units must comply with all property standards applicable to rental projects required in 24 CFR Part 92.251.

In the event that unforeseen conditions occur during the design or construction process that necessitate the need to make changes to the project the project proponent shall notify HCD staff for their review to ensure compliance with applicable programmatic, environmental requirements, or other federal requirements under the purview of HCD staff. The project must continue to comply with all other codes and regulations and receive appropriate approvals as necessary.

### III. Contractor Requirements

In conformance with California State law and the California State License Board requirements, anyone who contracts to perform work on a project that is valued at \$500 or more for labor and materials, and relating to any of the following listed below, must hold a current, valid license in the appropriate trades from the Contractor State License Board (CSLB). Affected categories are:

- Building Construction/Renovation/Repair
- Highway or Highway Construction/Repair



- Parking Facility Construction/Renovation/Repair
- Railroad Construction/Repair
- Excavation Work

For more information on contractor license types and requirements, please visit the [Contractors State License Board \(CSLB\) website](#).

For projects funded with federal funds, in accordance with Executive Order 12549, “Debarment and Suspension” (24 CFR Part 570.609 and 2 CFR Part 200.214, award of project cannot be made to any party/contractor that is debarred or suspended or is otherwise excluded from or ineligible for participation in federal assistance programs.

Contractors must be checked in the federal government’s System for Award Management (SAM) (<https://www.sam.gov/content/home>), as well as a public search to ensure that the Contractor is not debarred, suspended, or otherwise ineligible before making a project award.

In addition, 2 CFR Part 200.319(b) requires that contractors who develop or draft specifications, requirements, statements of work, invitations for bids and/or requests for proposals must be excluded from competing for such bid or procurement process.

There may be additional obligations or licensing requirements depending on the project. Such requirements will vary based on scope of project, total amount of federal funding, covered units (i.e. total number of units receiving HOME or other pertinent financial assistance), or other factors.

#### IV. Definitions (partial listing)

The following words and terms, when used in these Standards, shall have the meaning provided herein, unless by context, it is clearly indicated otherwise. Any terms or phrases not specifically mentioned in this section shall have the meaning as defined by their respective statute, regulation, rule, or authority.

**Accessible Route (DSA-AC & HCD 1-AC)** - A continuous unobstructed path connecting accessible elements and spaces of an accessible site, building or facility that can be negotiated by a person with a disability using a wheelchair, and that is also safe for and usable by persons with other disabilities. Interior accessible routes may include corridors,



hallways, floors, ramps, elevators and lifts. Exterior accessible routes may include parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps and lifts.

**Capital Needs Assessment (CNA)** – A CNA is a systematic assessment to determine a property’s physical capital needs over the next 20 years based on the evaluation of the current physical conditions of a property. It is used to determine that all work that will be performed in the rehabilitation of the housing will meet the long-term physical needs of the project.

**Green Capital Needs Assessment (GCNA)** – A GCNA is a hybrid of a standard 20-year Capital Needs Assessment that adds commercial energy audits and detailed financial analysis of retrofit options to analyze both conventional and green alternatives in order to determine the best approach for costs and benefits of proposed green retrofits over the term of the GCNA.

**Enforcing Agency** - State or local agency specified by the applicable provisions of law, as defined in 103.1 BSC-CG of the 2019 California Green Building Standards Code, Title 24, Part 11.

**Plumbing Fixtures** - All relevant plumbing components, which include toilets, urinals, bidets, faucets, lavatories, sinks, showers, bathtubs, and floor drains. Plumbing appliances include washing machines, dishwashers, domestic water heaters, garbage disposals, and water softeners.

**Plumbing System** - All relevant plumbing components, which include but are not limited to: piping, fittings, devices, faucets, containers and receptacles that are used to supply, distribute, receive or transport potable water and wastewater.

**Project Proponent** - For purposes of this document, the term Project Proponent may include Project Sponsor, applicant, owner, borrower, or developer.

**Rehabilitation** – Renovation of existing residential property to replace worn out components, replaced dilapidated components and to bring the property up to an agreed upon standard based (for the HOME program, that is the minimum standard as outlined in these Rehabilitation Standards) on health and safety needs, useful life, funding, code, and other regulatory requirements. See 24 CFR Part 92.251 (b)(1)(2)(3) and 24 CFR Part 93.301 (b)(1)(2)(3).



**Substandard Conditions** – Substandard Conditions include any condition which threatens, defeats, or will lead to the lack of functional viability of a single feature of a structure. Hazardous conditions are a type of Substandard Conditions. (For a fuller listing of substandard conditions, see Health and Safety Code Section 17920.3.)

**Major Systems** - Major systems are defined herein in accordance with 24 CFR Part 93.301(b)(1)(ii) and 24 CFR Part 92.251(b)(1)(ii) include:

- Structural support (which includes foundation as a structural support element), roofing;
- Cladding and weatherproofing;
- Plumbing (both fixtures and system);
- Electrical; and
- Heating, ventilation, and air conditioning (HVAC)

## V. Rehabilitation Standards Priorities

**Priority 1:** For all multifamily rehabilitation projects, health and safety standards represent the highest priority work to be completed first, with primary focus on life safety issues. Any and all **life-threatening health and safety deficiencies shall be corrected** by the owner in every approved rehabilitation project, regardless of funding source, **within 24 hours, if the units are occupied**. Life-threatening deficiencies include those identified for the property site, the building exterior, building systems, common areas, access, and the units themselves. See [2 CFR Part 857 Administrative process for scoring and ranking the physical condition of multifamily housing properties](#) for a list of definitions, Inspectable Items, Observable Deficiencies, and life-threatening health and safety deficiencies that require correction by the owner within 24 hours. Project proponents or applicants shall not be eligible for any assistance under this program or other HCD program until life-threatening health and safety deficiencies are corrected. For projects assisted through HCD, all life-threatening health and safety deficiencies shall be reported to HCD and will be subject to compliance monitoring.

**Priority 2:** Evaluating the remaining useful life of all major (building) systems through the use of a Capital Needs Assessment (CNA) or Green CNA. Pursuant to State Uniform Multifamily Regulations (UMR) Section 8309(b)(2), the CNA must cover systems through the initial 20 years of operation, with updates occurring every five years during the entire 55-year affordability period. Federal funding rules require that if a multifamily housing development consists of 26 units or more a CNA shall be performed to determine the remaining useful life of major systems. In addition, HCD may require a CNA regardless





of project size for use in determining scope of the proposed rehabilitation project. Major systems must be identified in the CNA and word write up/construction documents.

Major systems found to be at, or near, the end of their useful life before the end of the affordability period shall be repaired or replaced as part of the rehabilitation of the project. In addition, as part of the project, a replacement reserve shall be established and regular payments shall be made to the reserve fund in accordance with an approved payment schedule. The amounts to be placed in replacement reserve shall be adequate to repair or replace systems as needed through the entire period of affordability (24 CFR Part 93.301, 24 CFR Part 92.251).

**Priority 3:** Any violation of state or locally adopted building code, housing, code, conditions of approval or conditional use requirements, zoning ordinance, or disaster mitigation standards requirements. Project Proponents, Owners, and their Contractors/Subcontractors need to be knowledgeable about their local codes and able to communicate with their local code officials about code requirements. Where there are no locally adopted building codes, then the State codes, as enumerated in **Applicable Laws and Regulations** shall govern.

Most building codes allow for building components that were constructed in compliance with existing building code at the time, and which do not pose a threat to health and safety, to remain as is, unless replacement of items (such as windows) triggers a requirement to upgrade to the newer standard (such as energy efficiency), or where the item poses a life safety or health hazard. Project proponents and their development team will need to discuss the project components with their local building officials to determine whether or not a system will meet the threshold to require replacement.

**Priority 4:** In response to California Executive Order B-30-15, HCD strongly encourages recipients to implement projects and Program Activities in a manner that reduces greenhouse gas emissions and adapts to climate change. HCD requires all projects to comply with applicable mandatory residential measures as set forth in CALGreen.

## VI. Mandatory Property Standards

All rehabilitation that is performed through the Multifamily Rehabilitation Program are required to meet the minimum property standards, as set forth in each program's (e.g. HOME, HTF) requirements.



**Health and Safety:** Requirements and definitions provided in detail throughout these Standards.

**Major Systems:** Requirements and definitions provided in detail throughout these Standards.

**Lead-Based Paint:** Housing assisted through the Multifamily Rehabilitation program is subject to the LSHR regulations at 24 CFR Part 35, subparts A, B, J, K, and R regarding lead-based paint poisoning prevention in residential structures. The per unit level of rehabilitation assistance and unit characteristic/family composition determines the required approach to lead-based paint testing and lead hazard control or abatement measures. LSHR does allow for a few limited exceptions. Applicants, developers, contractors, or project proponents of any project requiring the rehabilitation of structures built prior to 1978 must read, fully understand, and comply with the statutory requirements. Rehabilitation work is also subject to EPA, CDPH, OSHA, and Cal/OSHA lead-based paint and lead hazard standards and regulations.

Inspection and testing for lead hazards must be completed by certified professionals prior to determination of the scope of rehabilitation, a copy of the inspection and testing report must be provided as part of the work write-up. It is the responsibility of the inspector to identify the lead hazards and family characteristics which will determine the appropriate level of work needed, if any. The Scope and Cost Review must be provided to the party conducting the lead-based paint report, and the Project Proponent or Development Owner must implement the mitigation recommendations of the testing report. A plan must also be put in place for the scheduling of the work, including any necessary relocation. Lead hazard reduction, control, abatement measures and clearance inspections must be done by certified professionals. Lead abatement work must accomplish the following:

- Provide qualified contractors to perform work;
- Provide adequate monitoring of work; and
- Ensure that all identified lead-based paint hazards are eliminated and that the unit is physically clear of lead dust above allowable amounts.

**Accessibility:** Units assisted under this program must meet the accessibility requirements of 24 CFR Part 8 (implementing Section 504 of the Rehabilitation Act of 1973) and Titles II and III of the Americans with Disabilities Act (implemented at 28 CFR Parts 35 and 36), as applicable upon project completion. “Covered multifamily dwellings”, as defined at 24 CFR Part 100.201, must also meet applicable design and construction



requirements at 24 CFR Part 100.205 (implementing Fair Housing Act), as well as California Building Code Chapter 11A. Additionally, the Scope and Cost Review Report must include an analysis of compliance with the Department's accessibility requirements relating to the Site and Development Requirements and Restrictions and identify the specific items in the scope of work and costs needed to ensure that the Development will meet these requirements upon project completion.

In accordance with 24 CFR Part 8, if substantial alterations (defined at 24 CFR Part 8.23) are undertaken to a project with 15 or more total units and the cost of rehabilitation is 75% or more of the replacement cost then the provisions at 24 CFR Part 8.22-23 apply including:

- The project shall be designed and constructed to be readily accessible to and usable by persons with disabilities;
- At least 5% of the units or one minimum, whichever is greater, must be made fully accessible for persons with mobility impairments based on the Uniform Federal Accessibility Standards (UFAS); and
- At least 2% of the units (1 additional unit minimum) must be made accessible for persons with hearing or vision impairments.

For projects with “less-than-substantial” alterations (anything less than “substantial”), the project shall be made accessible to the greatest extent feasible until 5% of the units are physically accessible. In either case, common spaces shall be made accessible to the greatest extent feasible. “Greatest extent feasible” is not interpreted to be a requirement if it would pose an undue financial or administrative burden.

**Disaster Mitigation:** Where relevant, assisted housing must be improved to mitigate the impact of potential disasters, in accordance with applicable State and local codes, ordinances, hazard mitigation plans, and requirements, in addition to the UPCS (or replacement standards) or other requirements as established by HUD and/or HCD.

Where applicable, all rehabilitation projects located in a Fire Hazard Severity Zone or Wildland-Urban Interface (WUI) Fire Area must comply with the current version of the California Building Code and California Residential Code, regardless of whether the type of rehabilitation subjects it to CALGreen.

Applicants requesting funds must also meet the federal environmental provisions. If no FEMA Flood Insurance Rate Maps are available for the proposed Development Site, flood



zone documentation must be provided from the local government with jurisdiction identifying the 100-year floodplain.

**Broadband Infrastructure:** Substantial rehabilitation must provide for the installation of broadband infrastructure, unless determined infeasible, in accordance with program requirements.

## VII. General Requirements

**Uniform Physical Conditions Standards (UPCS) (or successor inspection standards issued by HUD):** All Developments funded by HCD with HUD funds must be decent, safe, sanitary, in good repair, and suitable for occupancy throughout the entire Affordability Period. At a minimum, assisted housing must comply with HUD's Uniform Physical Condition Standards, as found in 24 CFR Part 5.703, or HUD replacement standards. Developments must also comply with all State and local health, safety, and building codes; ordinances; and zoning requirements. Developments in jurisdictions without applicable State or local building codes must adhere to the State of California's Building Standards Code in addition to UPCS (Please see [Housing Trust Fund \(HTF\) FAQ Appendices: Uniform Physical Condition Standards for Multifamily and Single Family Housing Rehabilitation](#)).

**Housing Quality Standards (HQS) (or successor standards issued by HUD):** In accordance with HOME and HOME-ARP program requirements, housing occupied or expected to be occupied by a family receiving tenant-based rental assistance must meet the requirements set forth in 24 CFR Part 982.401 (Housing Quality Standards).

**Capital Needs Assessment (CNA):** All assisted Rehabilitation Developments must submit a capital needs assessment (CNA) estimating the useful life of each major system. The CNA shall determine the work to be performed and identify the long-term physical needs of the project. If the remaining useful life of one or more major systems is less than the applicable period of affordability, a replacement reserve must be established with adequate monthly payments made to repair or replace the systems as needed. Refer to Appendix A: CNA AND PROJECT SCOPE DOCUMENTS.

- **Capital Needs Assessment Guidelines -**
  - The CNA must have been completed or updated in the past six months at time of application and be completed by an independent, third-party licensed engineer or architect approved by HCD. The performing engineer



or architect must:

- conduct an interview with the appropriate onsite Development personnel (e.g. property management, maintenance personnel) to assess prior, ongoing or chronic repairs, maintenance issues, and deficiencies;
  - complete an onsite visit and physical inspection of both the interior and exterior units and structures on the property;
  - analyze and provide recommendations regarding the presence of environmental hazards and potential efficiency or other mitigation considerations, in accordance with these standards;
  - analyze and provide recommendations as to the reasonability of the proposed budget as it relates to the work to be performed, including but not limited to an analysis of the: (1) Development Site; (2) Structural Systems; (3) Interior Systems; and (4) Mechanical, Plumbing, Electrical, HVAC, and Safety (e.g. fire protection, elevator requirements, safety lighting) Systems and related requirements; and
  - depending on the aforementioned determinations, the assessment must assess and provide recommendations regarding the proposed budget as it relates to the conclusions of the assessment.
- Moreover, any and all components of major systems reaching the end of their useful life or otherwise bearing critical conditions, must be identified. If the remaining useful life of any component of the major systems is less than the term of the affordability period, replacement reserves with adequate payments being made as required to finance future repair(s) or replacement(s) is required.

**Inspections:** Rehabilitation projects must comply with inspection requirements set forth in 24 CFR Part 92, 24 CFR Part 93, and HCD written inspection procedures. HCD will conduct, and/or review, initial, progress, and final inspections during construction to identify any deficiencies that must be addressed and ensure that all work is in accordance with approved standards, as applicable.

**Construction Documents:** Each repair or any proposed rehabilitation work should be detailed through the use of scopes of work, plans, drawings, and/or specifications. At a minimum, each repair or rehabilitation work item should be detailed in a work-write up that specifies the location, required demolition, and methods and materials, with enough detail to determine the desired outcome or finished product and to establish a basis for a



uniform inspection to determine compliance with these standards. Work-write ups can reference plans and specifications as needed. Moreover, work write-ups must comply with Federal, State and local codes, ordinances, requirements, and HCD standards.

**Warranties:** Construction and product warranties are required for all rehabilitation projects. The Contractor shall warrant to the Owner that the materials and equipment furnished will be (a) new and of good quality; (b) free from defects in materials and workmanship, unless otherwise approved in writing in advance by the Owner and approved by HCD, and (c) that the Work will be performed in a good and workmanlike manner and in accordance with plans and all applicable codes, laws and standards. The Contractor shall collect and submit to the Owner, upon Mechanical Completion of the Work, all warranties from Subcontractors supplying materials, equipment or components incorporated into the Project, and the Contractor must assign to the Owner all of the Contractor's rights under such warranties.

**Cost Estimates:** Written Cost Estimates are required for all assisted rehabilitation projects. Cost estimates must be prepared and submitted to HCD for review and approval prior to loan closing. HCD will review the cost estimate to ensure it meets Federal and State requirements (e.g. cost reasonableness).

**Annual Auditing, Recordkeeping, and Certifications:** Housing assisted under this program must comply with the auditing, recordkeeping, and cost certification requirement of HUD programs, Davis-Bacon Labor Compliance requirements (as applicable), 2 CFR Part 200, as well as the State of California regulations on records retention and State of California Prevailing Wage laws (where applicable).

## VIII. Other State and Federal Requirements

**Environmental and Historic Preservation Requirements:** Housing assisted under this program must meet CEQA, NEPA, and federal and State Historic Preservation requirements through the statutory environmental review and approval process, including consultation with the State of California's Office of Historic Preservation (SHPO) and tribal consultation, and conformance with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties, where required. See Section II for a list of environmental and historic preservation regulations that apply or may apply to the project. Note: Local jurisdictions may have additional historic requirements that apply to the project.



**Asbestos:** Asbestos generally poses no threat to health unless asbestos fibers become airborne due to materials aging, deteriorating, or as the result of damage or disturbance. This typically only occurs to a friable (meaning it can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand), regulated asbestos-containing material. Even so, friable materials typically pose no health risk unless disturbed.

If asbestos-containing materials (ACM) will be disturbed by rehabilitation activities then abatement is generally required and state and federal asbestos regulations (see Section II) must be met in assessing, abating, and disposing of the ACM. Assessments/surveys must be taken by certified professionals. Abatement work must be done by a licensed contractor. Furthermore, survey and abatement/demolition work must comply with NESHAP, which requires the owner of the building or the operator to notify the appropriate state agency before any demolition, or before any renovations of buildings that could contain a certain threshold amount of asbestos or ACM. In some cases, NESHAP oversight is delegated to local, county or regional agencies (e.g. SMAQMD (see rule 902)).

**Development and Unit Amenities:** Housing improvements beyond those described in these Standards must include all applicable amenities, energy and water efficiency features in accordance with applicable State and local codes. Materials should be selected that meet the standard of medium grade and emphasize durability and a long service life. These selections will ensure that development owners to not need to make repairs for as long as possible, increasing the stability and sustainability of the project.

Pursuant to State UMR Section 8302. Unit Standards: restricted units shall not differ substantially in size or amenity level from non-Restricted Units with the same number of bedrooms, and Units shall not differ in size or amenity level on the basis of income-level restrictions.

## IX. Rehabilitation Standards

### **General Requirements, Minimum Standard Conditions, Substandard Conditions**

The Minimum Standard Conditions and Substandard Conditions (For a fuller listing of Substandard Conditions, please refer to Health and Safety Code section 17920.3) for each Major System are sufficiently detailed in method and material to provide the MINIMUM threshold for Rehabilitation activities that assisted Multifamily Developments MUST MEET OR EXCEED. It is important to remember any threshold requirements provided herein do not supersede or preempt State and local codes, ordinances, and



requirements for building and maintenance with which assisted housing must comply. Rather, compliance must be accomplished in addition to meeting or surpassing these Standards.

### **Determining the Scope of Work**

This section shall guide the determination as to the minimum scope of work required. In conjunction with the mandatory property assessments required in these Standards. Each repair should be detailed as required through the use of plans, drawings, specifications and work write-ups. At a minimum, each repair should be detailed in a work write up that accurately specifies the location, required demolition (if applicable), and the methods and materials for the project -- with sufficient detail to determine the desired outcome or finished product. Work write ups may reference plans and specifications as needed but must be detailed enough to complete repairs.

## **1. Site Work**

### **a. General Requirements and Minimum Standard Conditions**

The subject lot or defined site shall be free of debris, garbage or other accumulations of site stored items which create possibilities of infestations. The site should be free of hazardous conditions that may limit safe use or cause tripping, falls, injury, or other health, safety, or security issues. The site should be generally level as allowed by natural topography, well drained, and accessible. Landscaping and irrigation systems must be in properly functional condition. Additional drainage features should be added if need is evidenced by existing erosion, standing water or evidence of water damage. In addition to any applicable requirements herein, any and all deficiencies noted in the UPCS inspection.

### **b. Substandard Conditions**

Substandard conditions for Site Work include, but are not limited to, those conditions listed below, for which adequate repair or replacement is required, as applicable and further detailed herein:

- Accumulated debris, waste, or garbage either in enclosed areas such as storage buildings or on the property.
- Deteriorated outbuildings, sheds, wells, privies, or other structures which are no longer in use or are made unusable by their condition.





- Holes, ditches, exposed water meter boxes or other condition which creates a tripping hazard, excluding drainage ditches which are part of a designed drainage system.
- Rodents, insects, or other infestations.
- Standing water or depressions which hold water during wet weather.
- Leaking or improperly functioning irrigation, water supply or leaking sewage system.
- Obsolete sanitary piping systems such as Orangeburg, clay or other non-standard pipe.
- Scaling, calcified or otherwise compromised water supply lines.
- Exposed pipes, railings or other installations that create tripping hazards.
- Damaged, missing or deteriorated walkways, steps and decks which create tripping hazards or are otherwise unsafe.
- Stairways or steps: refer to California Building Code chapter 10, section 1011.1 for handrail requirements and section 1015 for guardrail requirements.
- Except on an Accessible Route, any change in level in a walkway shall not be greater than 3/4”.
- On any Accessible Route any change in level shall conform with requirements in California Building Code Chapter 11A, section 1111A.
- Any walkway or driveway that exceeds 5% damage in the form of cracking, spalling, holes, heaving or other damage.
- Fencing, railing, or gates and any associated entry points that limit safe use or access or are broken, deteriorated, missing pieces, non-functional, or pose hazardous conditions (may include pedestrian or vehicle). In addition, they should not have flaking paint or be graffitied.

### c. Other Requirements/Conditions

(1) Debris and Brush Removal. The premises shall be free from accumulations of rubbish and garbage that present health and safety hazards. The premises shall be free from trees and shrubs that are damaging the dwelling or present a hazard. Tree limbs in danger of falling on roof areas shall be removed. No vegetation should touch existing buildings, utility service lines, fences, or extend over walkways or parking areas.

(2) Drainage. Surface drainage shall be diverted to a storm sewer or other approved point of collection that does not create a hazard. Lots need to be graded to drain surface water away from the foundation in conformance with local requirements. Where lot lines or other



physical barriers prohibit this, drains, swales, and/or rain gardens shall be constructed to ensure drainage away from the structure in accordance with code and to manage runoff on site. Rain gutters shall be installed if none exist. Gutters shall slope 1" for every 20 linear feet with downspouts installed at a minimum every 40'. Downspouts must empty into a splash block or be diverted at least five feet from the building. Special care must be taken to not discharge water onto adjacent properties.

(3) Driveways, Sidewalks, and Patios. Paved surfaces must be in good condition and shall be free from hazards which can cause tripping and falling. Paved surfaces adjacent to the foundation shall not slope towards the structure so that water can collect at the foundation. If tripping hazards and drainage problems exist, the paved surface shall be removed and rebuilt. Paved areas must conform to local code requirements for nonpermeable lot coverage requirements.

(A) Driveways. Following existing driveway demolition, all organic matter shall be removed. Subsoil shall be compacted uniformly and evenly. Forms shall be constructed to meet current required minimum slopes away from the building and at required depth. Install either rebar or welded reinforcing wire as required and allowed by current code. Expansion joints shall be installed at all radius points, sidewalk intersections and building slab tie-ins.

(B) Sidewalks and Patios. Following existing sidewalk demolition, all organic matter shall be removed. Subsoil shall be compacted uniformly and evenly. Forms shall be constructed to provide the correct minimum slope away from any building, at depth required by current codes in place at the time. Accessible Route cross slope shall conform with requirements in California Building Code Chapter 11A, section 11113A. Expansion joints shall be installed at all radius points, sidewalk intersections and slab tie-ins. If sidewalks and patios are installed and are connected to an entry door, an accessible entry will be required.

(4) Ramps. On Accessible Routes, ramps shall meet the requirements of the most current ADA and the applicable Accessibility requirements provided in these Standards.

(5) Vermin and Insects. The premises shall be free from infestations of vermin and wood-boring insects. Inspections shall be performed by state licensed extermination contractors if evidence of infestation exists. Conditions which increase or cause infestation shall be removed (e.g. accumulation of rubbish garbage, unsanitary conditions, presence of consistent moisture, untreated wood in contact with soil, etc.). One or more of the following termite treatments shall be included in the Rehabilitation if infestation is observed; chemical termiticide treatment, termite baiting system installed and maintained



according to the manufacturer's label, use of naturally durable termite-resistant wood, and/or termite shields, or other materials as allowed by Code or regulation.

(6) Landscaping for Additions. When an addition is built, underground utilities run, grade changes made, or the soil is otherwise disturbed, proper compaction and a fine finish grading shall be done and seed, sod or native plants shall be installed matching as closely as possible the existing surrounding yard and in conformance with California Water Efficiency requirements.

(7) All fencing, railing, and gates must be in good and serviceable condition and shall meet applicable current codes and standards. Existing fencing that is to remain shall be free of flaking paint, rust, or any other signs of failure. If existing fencing shows any signs of failure, it shall be repaired, painted, and restored to look new. All pedestrian and vehicle gate hardware and access systems must be functional.

#### d. Site Amenities

Where possible, existing site amenities which enhance the livability of the project (e.g., play structures, playground areas, seating, benches, patio areas, bike racks, grills, and fencing, etc.) should be maintained in good repair or replaced if in poor condition. New site amenities may also be provided, if allowed. Any site amenities must follow applicable accessibility, State and local codes, and HCD program requirements.

## **2. Structural Support, Foundations, and Roofing**

### *2.1. Foundations*

#### a. General Requirements and Minimum Standard Conditions

Foundation work shall be completed in its entirety prior to beginning work on other areas of the housing unit(s). Leveling shall be done in such a manner as to provide an acceptable degree of tolerance. When leveling takes place, doors, windows and other openings shall be reasonably plumb, level and easy to operate. Interior wall coverings shall be repaired and Plumbing Systems shall be inspected to ensure the system functions as intended. Foundation leveling shall include grading of the soil to provide a slope away from the building to meet current code requirements. If the lot does not allow for this grade, a French drain, or other approved management system, shall be installed to drain water away from the building, or swales shall be designed and built to control rain



water runoff. Underpinning shall be required when foundation leveling is a part of Rehabilitation.

#### b. Substandard Conditions

At a minimum, repair or replacement is required if any of the conditions exist:

- Evidence of wood destroyed by insect damage;
- Water and/or fire damage or dry rot to wooden piers, beams, joists, and subfloor;
- Inadequate support of beams, sills, or joists;
- Lack of drainage away from the building;
- Cracked, damaged, buckled skirting;
- Untreated wood in contact with the soil; or
- Any other condition which meets the definition of a hazardous or substandard condition.

#### c. Other Requirements/Conditions

(1) Slab on Grade. All concrete floors shall be without serious deterioration or conditions that present a falling or tripping hazard. With existing concrete floors, cracks longer than six inches in concrete slabs, 3/4 inch along walkways or steps, or any missing or uneven sections shall be repaired. Slab on grade foundations that are failing, as demonstrated by an inspection by a structural engineer, shall not be rehabilitated.

(2) Pier and Beam Pier and beam rehabilitation must be done in accordance with California Building Code Chapter 16. For venting and crawlspace, refer to California Building Code, Chapter 12, section 1202.

### *2.2 Roofing Systems*

#### a. Description

All relevant roofing components, which include but are not limited to, trusses, rafters, ridge beams, collar ties, ceiling joists, top plates of walls, and sheathing. Moreover, Truss Designs for Replacement Roofs complying with wood roof framing, includes: slope, span, and spacing; location of all joints, required bearing widths; design loads; joint connector type and description; lumber size, species, and grade; connection requirements; bracing



locations; and roof tie-downs and uplift resistance details for high wind areas, or as otherwise provided by code.

b. General Requirements and Minimum Standard Conditions

The Roof System and the roof covering shall safely support the loads imposed. Framing and decking shall be structurally sound, properly fastened, and form a sound base for attaching the roof covering. The Roof System shall be configured to provide a positive drainage plane.

c. Substandard Conditions

At a minimum, any Roof System that is incapable of safely supporting the load or fails to safely provide adequate drainage must be repaired or replaced. Deteriorated, missing or loose framing or sheathing must also be corrected. Generally, repair or replacement is required for any applicable condition listed below:

- Multiple layers of roof covering materials (no more than two);
- Water damage caused by leaks through the roofing system;
- Missing, worn, or upturned shingles;
- Damaged, missing, or improperly installed roof jacks, flashings, drip edges on both rakes and eaves;
- Exposed nails or other fasteners;
- Structural damage to trusses;
- Extensive patchwork and repairs;
- Missing, damaged, loose, leaking, blocked, improperly sloped gutters and downspouts;
- Wear and tear leading to a failed system within five years from the initial inspection;
- or
- Any other Hazardous or Substandard condition.

## 2.3 Structures

a. General Requirements and Minimum Standard Conditions

Roof structures incapable of safely supporting the load or providing adequate slope for drainage shall be repaired or replaced. Sagging roofs shall be replaced or stabilized.



Stabilization of sagging roofs that will not be replaced shall be designed by a structural engineer.

b. Other Requirements/Conditions

(1) Truss Design for Replacement Roofs. Truss designs for replacement roofs shall comply with wood roof framing requirements which includes slope, span, and spacing; location of all joints, required bearing widths; design loads; joint connector type and description; lumber size, species, and grade; connection requirements; bracing locations; and roof tie-downs and uplift resistance details for high wind areas.

(2) Roof Framing for Replacement Roofs. See California Building Code Chapter 15, section 1511 and California Energy Code Section 180.2 (multifamily buildings) for reroofing requirements.

(3) Sheathing Replacement. 5/8" CDX plywood shall be installed with clips spaced O.C. between rafters for rafter spacing of 24", or as otherwise required by California Building or local codes.

(4) Ventilation. Unconditioned attics shall be cross ventilated. A one-to-one ratio shall be installed. Soffit vents shall have baffles installed providing at least one inch of airspace to prevent wind washing and/or attic insulation blocking soffit vents. All vents shall have corrosion-resistant wire cloth screening or similar material in a size designed to provide a spark barrier to building openings, per code sizing requirements.

(5) Radiant Barriers, powered ventilation. Barriers, venting, powered venting, where allowed, shall conform to California Building Code Chapter 12, section 1202. See also California Energy Code Section 180.2.

*2.4 Roof Covering*

a. General Requirements and Standard Materials

Asphalt shingles shall be fastened to solidly sheathed decks in conformance with requirements of California Building Code Chapter 15, section 1507.2. Otherwise, roof weatherproofing, reinforcement, and surfacing shall be completed in accordance with applicable provisions of the applicable Code.



(1) Flashings. Flashings shall be installed in a manner that prevents moisture from entering walls or the roof through penetrations, at eaves and rakes, at wall/roof intersections, wherever there is a change in roof slope or direction and around roof openings in conformance with requirements in California Building Code Chapter 15 section 1507.2.8.

(2) Valley Flashings. Closed valleys (covered with asphalt shingles) shall conform with requirements of the California Building Codes in Chapter 15 section 1507.8.2.

### **3. Minimum Standards for Walls, Ceilings, & Flooring**

#### *3.1 Walls and Ceilings*

##### a. General Requirements and Minimum Standard Conditions

On exterior walls, all defects or deterioration that would allow the elements to enter wall cavities shall be corrected through Rehabilitation. Replacement of sections of walls and ceilings shall match adjoining materials as closely as possible (e.g. thickness of the existing material). When replacement of entire wall or ceiling coverings or sections of them is replaced, priming and painting of the entire wall or ceiling shall be completed.

##### b. Substandard Conditions

Repair or replacement is required if any condition listed below exists:

- Water damage or dry rot of siding, trim, or interior wall coverings;
- Exposed nails or popped seams;
- Peeling or chipped paint, holes, cracks, or gaps in interior wall coverings or exterior cladding;
- Broken, fire damaged or missing exterior cladding;
- Sagging or missing ceiling sections;
- Wood destroying insect damage in exterior cladding; or
- Any other condition characterized as Hazardous or Substandard.

##### c. Other Requirements/Conditions

(1) Walls.



(A) Exterior Walls. If removing the exterior cladding, deteriorated exterior wall sheathing, studs, and bottom and top plates shall be replaced. Deteriorated or missing insulation shall be replaced and wall cavities shall be insulated to minimum code standards. Masonry repair or replacement shall match existing masonry as closely as possible, installed plumb, true, and in line with existing courses. If weep holes are filled or nonexistent, they shall be provided at least every 3' at the slab and at least 1 above each window or as otherwise required by State or local code. Siding repair or replacement shall match existing siding as closely as possible and

provide for a positive drainage plain. All joints and seams shall fall on-center of wall framing. Overlap and water sealing shall be completed in accordance with the manufacturer's installation instructions.

(B) Interior Walls. A structural engineer shall inspect interior bearing walls that are proposed to be moved. Non-bearing walls do not require a structural engineer. Moved or newly installed walls shall be constructed with 2x4 studs with the bottom plate securely fastened to the floor and the top plate securely fastened to ceiling joists. All new gypsum board shall be installed according to the manufacturer's installation instructions and shall be installed a minimum of 1/2" above the finished floor, taped, floated, and feathered prior to painting. New wall coverings shall not show noticeable blemishes or dents and tape shall not show after painting. All interior walls shall be painted with low Volatile Organic Compound (VOC) paint in accordance with CALGreen section 4.504.22.

(C) Bathroom Walls. Bathroom walls that are to be replaced shall be replaced with appropriate backer board. If tile will be installed in the shower/tub area, concrete board, or equivalent, shall be installed. Bathroom wall coverings shall be installed a minimum of 1/2" above the finished floor, taped, floated, and feathered prior to painting. New wall coverings shall not show noticeable blemishes or dents and tape shall not show after painting.

(2) Ceilings. For ceiling structure, see the Roofing Chapter. Replacement of ceiling coverings shall be with 5/8" Type X gypsum board. Fastening shall be in accordance with the manufacturer's installation instructions. All new gypsum board shall be taped, floated, feathered, primed, and painted. When ceilings are replaced, all ceiling fixtures removed and reinstalled for replacement shall be air sealed.

(3) Painting and Finishes. All areas not to be painted shall either be removed and reinstalled or completely covered to prevent overspray or splatter. Receptacle and switch plates shall be removed and reinstalled.





(A) Interior Walls: All walls that were repaired or replaced shall be painted. Bathroom walls shall have a semi- or high-gloss sheen.

(B) Exterior Walls: Replaced or repaired exterior cladding, with the exception of brick veneer, shall be painted with at least two coats of exterior grade paint. Existing exterior walls not replaced or repaired but still painted must comply with all applicable requirements:

(i) For stucco repair or installation, installers shall comply with the correct ASTM standard specification for the product and installation type;

(ii) The ground shall be protected with a drop cloth. For pre-1978 housing determined or assumed to have lead-based paint, all scraped paint shall be disposed of in accordance with applicable HUD and Cal-EPA guidelines.

(C) Trim and Baseboards. All installed trim around doors, windows, and floors shall be painted on both sides (except for baseboard trim).

### 3.2 Flooring

#### a. General Requirements and Minimum Standard Conditions

All flooring, including transitions between rooms, must be effective, relatively level, free of tripping hazards, and adhere to or exceed all applicable Accessibility standards. Floor covering and subflooring(s) must function as intended, as demonstrated through sufficient inspection. Related deficiencies must be corrected during Rehabilitation, as provided in these Standards.

#### b. Substandard Conditions

Deteriorated, inadequate, and weakened floor framing and subfloors can be the result of poor initial construction, foundation settling or failure, careless remodeling, water, or wood boring insects. A thorough inspection shall be conducted to identify all subfloor and flooring deficiencies. The following conditions require that corrective measures (repair or replacement) be taken:

- Damaged, rotten, loose, weak or otherwise deteriorated subfloor;
- Torn, missing, broken, or otherwise damaged floor covering that creates a tripping hazard;
- Missing baseboards, shoe molding, or transition strips; or



- Any other condition that meets the definition of Hazardous or Substandard. In doing so, repairs to severely sloped or uneven floors must satisfy all corrective measures or replacement will be required. New floor coverings shall be installed because the existing floor covering is ineffective, there are obvious trip hazards, because the subfloor was replaced, or because other work requires it, such as increasing the square footage of a room. Replacement flooring may be required if necessary for Accessibility purposes; other concurrent work; or significant subflooring repairs/replacement occur. If required, any and all applicable Foundation work must be completed first. Thereafter, flooring replacement shall be conducted in accordance with the manufacturer's installation requirements.

### c. Other Requirements/Conditions

#### (1) Subfloor.

(A) Concrete Slab. If the concrete slab foundation is functioning as intended and is relatively level, no additional subfloor preparation is required. If it is functioning as intended, but not relatively level or has settlement cracks, self-leveling flooring compound shall be installed prior to installation of the floor covering.

(B) Other Habitable Rooms. Other habitable rooms requiring subfloor replacement shall have 3/4" CDX plywood installed as the subfloor with floor joists not more than 24" on center. All subfloor shall be installed with screws and include subfloor caulking adhesive.

(2) Floor Coverings. Installation of materials shall be done according to manufacturer's specifications. 2022 CALGreen includes requirements for carpet, carpet cushion, resilient flooring, and composite wood products in Section 4.504.

(A) Kitchens and Bathrooms. Replacement floor coverings in kitchens, bathrooms, laundry rooms, and utility rooms shall be water resistant. Transitions between rooms shall match the new floor covering or match as closely as possible existing floor covering that is left in place. Replacement floor coverings shall be selected for durability, safety, and ease of maintenance.

(B) Other Habitable Rooms and Transitions between rooms shall match the new floor covering or match as closely as possible existing floor covering that is left in place. Replacement floor coverings shall be selected for durability, safety, and ease of maintenance.

### **4. Other Cladding and Weatherproofing (e.g. Windows, Doors, Siding, Gutters)**



## 4.1 Doors and Windows

### a. General Requirements and Minimum Standard Conditions

Applicable Foundation work must be completed prior to repairing or replacing doors and windows. Each habitable room that contains a window shall have at least one window that is in operable condition and capable of being held in the open condition without assistance or device. Habitable bedrooms must have a minimum of one window that meets egress requirements. Bathrooms, bedrooms and utility rooms shall have a door that is easily operable and fitted with functioning hardware that tightly latches the door.

All windows repaired or replaced as part of the scope of work must operate safely, effectively, and conveniently regardless of the user's age or ability. Each window must have an operable screen. Repaired or replaced windows must meet or exceed the requirements of an Energy-Star Rating. Additionally, blinds or window coverings must be provided for all windows.

### b. Substandard Conditions

At a minimum, any of the following conditions must be repaired or replaced:

- Broken, missing or cracked window panes;
- Rotten or deteriorated sills, frames or trim;  
Missing seal or sealant or dried, cracked or missing putty or caulking around window panes;
- Windows painted shut, inoperable or difficult to open and close;
- Security bars that do not open from the inside without any special knowledge or tools;
- Windows and exterior doors that do not lock;
- Broken, damaged, or deteriorated doors;
- Doors that do not shut and latch or lock smoothly with the strike plate;
- Exterior doors that are not listed as exterior doors;
- Rotted, deteriorated or damaged thresholds, jambs, frames, or trim; and
- Any other condition that can reasonably be characterized as Hazardous or Substandard.

## 4.2 Doors



#### a. General Requirements and Minimum Standard Conditions

All doors shall be in good operating order, easy to open, close and latch. All replacement doors must be installed true and plumb with trim installed on both sides. Hardware style (e.g. knob, lever handle, passage), finish (e.g. chrome, brushed nickel, satin), and any glazing shall be identified in the scope of work. All doors that come into contact with interior walls when opened shall have baseboard mounted, rubber tipped door stops installed.

(1) Interior Doors. Interior door replacements must be installed true and plumb, with trim installed on both sides. Bathroom doors shall be able to be locked.

(2) Exterior Doors. Exterior doors include, but are not limited to, doors connecting the conditioned space with an attached garage. Replacement exterior doors must be at least Energy Star qualified, or its equivalent, double bore exterior doors. Doors connecting the conditioned space to an attached garage shall also be fire rated. All exterior doors shall be keyed alike with a sufficient number of key copies provided to the residents.

#### b. Other Requirements/Conditions

(1) Accessibility and Universal Design. Accessible doors may be required depending on the Unit or Household Type(s). Universal design principles state that housing should be built to accommodate any person regardless of age or physical ability. See California Building Code Chapters 11A and 11B for required accessibility standards for publicly funded multifamily housing.

### 4.3 *Windows*

#### a. General Requirements and Minimum Standard Conditions

All windows shall be in good operating order, easy to open, close, latch, and lock. Windows that cannot be repaired must be adequately replaced. Flashing materials shall provide a positive drainage plane. Note: 2022 California Energy Code, or replacement standard contains specific window replacement requirements. Replacement windows shall meet or exceed requirements of the California Energy Code section 1802. The Performance Chart included in the Code provides the minimum performance ratings required for all replaced and, if practical, repaired windows.



#### 4.4 Gutters and Downspouts

##### a. General Requirements and Minimum Standard Conditions

All gutters and downspouts must be installed or replaced (repair alone is insufficient). Downspouts shall be installed at a minimum every 40' and shall discharge water at least five feet from the foundation. Drainage five feet away from the foundation may be accomplished through the installation of a French drain, swales, or other means of directing water away from the foundation. Water shall not be discharged onto an adjoining property.

### 5. Plumbing, Potable Water, and Sanitary Sewer Systems

#### 5.1 Plumbing Systems

##### a. General Requirements and Minimum Standard Conditions

The Plumbing System must effectively provide both a safe and adequate supply of potable water, and a safe and sanitary method of distributing wastewater. Effective Plumbing Systems adhere to the following mandatory plumbing principles:

- Sewer gasses shall not be allowed to enter any housing Unit.
- Sewer leaks must be identified, repaired or replaced, and improper disposal methods discontinued.
- Water leaks must also be identified and repaired or replaced.
- Water must be free from hazardous contaminants and safe for drinking, bathing and other uses.
- An adequate supply of water must be available for all water needs, which includes having adequate pressure at each fixture.
- Supply, drain, waste, and vent pipes shall not interfere with structural integrity. Notching and drilling of structural members shall comply with code requirements.
- Plumbing work shall be performed by state licensed individuals, and plumbing inspections performed by experienced and qualified individuals knowledgeable in the field of plumbing.
- Water heaters must meet seismic anchoring (strapping) requirements in the California Plumbing Code (CPC) 507.2 and Health and Safety Code 19211(a).

##### b. Substandard Conditions



Existence of any condition listed below shall require, at a minimum, adequate repair or replacement.

- Lack of the following:
  - Continuous sanitary water supply;
  - Continuously functioning sanitary wastewater disposal system;
  - Functioning shut-off valves at toilets, sinks and lavatories;
  - Access to waste lines such as clean-outs;
  - A minimum of one functioning toilet, bathroom sink, or tub/shower; or
  - Functioning kitchen sink;
- Septic system or Plumbing Fixtures not performing as intended;
- Leaks in any supply or waste lines;
- Deteriorated, corroded, or leaky supply or drain pipes;
- Supply or drain piping consisting of a mixture of different types of piping or fittings, or is run in an inefficient manner;
- Natural gas DWH combustion air taken from conditioned space;
- Inadequate natural gas DWH vent (e.g. not double walled or skirted at roof penetrations);
- Rusted or corroded DWH pipes or storage tanks;
- If any of the following are missing, blocked, or improperly installed:
  - Vent pipes;
  - Gas shut off valve on natural gas Domestic Water Heater (DWH);
  - Temperature and pressure-relief valve (TPRV) on DWH;
  - Shut off valves at the water meter, each toilet, each sink, DWH, or tub/shower locations; or
  - Natural gas domestic water heaters (DWH) located in bathrooms, bedrooms, closets or utility rooms where a clothes dryer is present; or
- Any other condition reasonably characterized as Hazardous or Substandard.

If replaced, newly installed Plumbing Systems, piping, and fittings must be properly installed, connected, free flowing; and must be free of leakage and corrosion of water or sewer gasses. In addition, plumbing fixtures and fittings must meet or exceed lead content requirements as outlined in the Health and Safety Code Sections 116875 and 116876.

## *5.2 Potable Water*

### a. General Requirements and Minimum Standard Conditions



Water service lines shall be properly connected to a public or approved private system functioning as intended. All newly installed supply lines must be flushed and fittings tested for leaks. Privately owned wells and systems must also be tested for water quality. Testing must occur prior to commencing Rehabilitation; and must be conducted by a local health department or other qualified, unaffiliated source. Appropriate corrective measures are required for privately supplied water determined not suitable for use.

b. Other Requirements/Conditions

- (1) Water Supply. All dwellings shall have adequate, safe, and potable water supplied through a safe Plumbing System to all fixtures.
- (2) Hot Water. Hot water is defined in the California Plumbing Code as water at a temperature exceeding or equal to 120 degrees F (49 degrees C). Section 601.2 requires hot water for bathing, washing, laundry, cooking, dishwashing, and maintenance.
- (3) Water Quality. Supply systems shall provide for the delivery of potable water through a safe system of piping, free from leaks and other defects and not subject to the hazards of backflow.
- (4) Exterior Pipe Protection. All newly installed exterior water lines shall be buried at a minimum depth as defined by code for the climatic region.
- (5) Water Pressure. Must meet requirements as set forth in the California Plumbing Code. See section 608.1 for inadequate water pressure and 608.2 for excessive water pressure.
- (6) Pipes. California Plumbing Code, section 604.1 requires pipe, tube, fittings shall comply with National Sanitation Foundation (NSF) 61 requirements. The California Energy Code outlines hot water piping insulation requirements in section 180.2.
- (7) Valves. The main water line shall have an accessible service shut-off valve, as defined in Section 203 of the 2022 California Plumbing Code for each building or Unit, as applicable. All hot and cold-water supply lines feeding all Plumbing Fixtures shall be equipped with functional and accessible shut-off valves. Access panels for tub/shower enclosures must be provided for access to valves and maintenance, if possible with



wall and plumbing configuration prior to rehabilitation. Movement of plumbing fixtures or similar changes are not required to create access. All valves shall be tested and must not leak.

### 5.3 Sanitary Drainage

#### a. General Requirements and Minimum Standard Conditions

The sanitary drainage system consists of the pipes designed to provide adequate circulation of air, exhaust of sewer gasses, prevent loss of water seals in traps and provide for wastewater flowing out of the home and into an approved sewage disposal system. All fixtures shall be connected to an approved sewage disposal system and free of leaks. New sewage disposal systems shall comply with Cal-EPA and State of California and local jurisdiction requirements.

#### b. Substandard Conditions

(1) Unapproved Private Systems. Unapproved systems include pit privies, cesspools, ponds, lakes, streams and rivers. If any of these systems are in use, they must be abandoned and the building must be connected to an approved sewer disposal system.

(2) On-Site Sewage Facilities (OSSF). Prior to conducting Rehabilitation, all OSSF systems shall be inspected by a licensed OSSF inspector. If not performing as intended, an existing OSSF system must be repaired, replaced, or abandoned as provided below:

(A) Repair or Replacement. If repair is suitable, the tank shall be drained and all components tested and repaired or replaced. Special attention must be given to the drainage field; tree cutting and site clearing of the field may be required and replacement made. The drainage field must be designed for the existing soil conditions and the water table at the site and installed by a licensed installer.

(B) Abandonment. If, in accordance with requirements in the California Plumbing Code section 713.4, a public system is available to connect to, and the existing OSSF system has reached the end of its Useful Life, abandonment is required. The existing tank shall be pumped, collapsed, and filled. A licensed plumber shall connect the housing to a public system and include a clean out close to the home. (See also California Plumbing Code Appendix H, section 1101.0 for requirements for plugging and capping building sewers or portions thereof.)

#### c. Other Requirements/Conditions





(1) Traps. Bell traps, “S” traps, and drum traps are prohibited. If any of these exist, they shall be replaced with a “P” trap. All fixtures shall be trapped and conform to the requirements in (A)-(F):

- (A) All waste lines shall be trapped by a water seal trap as near to the fixture as possible but in no case more than 24” from the fixture;
- (B) All traps shall be set level with respect to their water seals and sink traps shall be protected from contact and damage if sinks are made accessible for individuals using wheelchairs or other mobility device(s);
- (C) Trap size. Refer to California Plumbing Code Table 702.1 for minimum trap sizes.
- (D) No trap shall be larger than the drainage pipe coming from a fixture;
- (E) Access panels shall be provided to enclosed traps and concealed connections, if possible with wall and plumbing configuration prior to rehabilitation. Movement of plumbing fixtures or similar changes are not required to create access; and
- (F) Wall and ceiling openings for plumbing shall be air sealed with caulk (gap less than 1/4”) or expanding foam (gaps more than 1/4”).

(2) Vents. Plumbing Systems shall be designed to prevent sewer gasses from entering the living unit(s), allow waste to adequately drain into an approved sewer system, and shall be vented to the exterior so that water released from fixtures may draw in air to allow for smooth and even drainage. All vents must also meet or exceed the following requirements:

- (A) All Plumbing Systems shall have vent stacks and number of fixtures in accordance with California Plumbing Code Table 703.2;
- (B) Plumbing vent systems shall only be used for the purpose of venting the system;
- (C) New and Existing vents shall conform with California Plumbing Code section 906.1; and
- (D) All vent stacks terminating in an attic shall be extended or replaced. No vent stacks shall terminate near any window or door or under soffits.

#### *5.4 Minimum Standards for Plumbing Fixtures*

##### a. General Requirements for Minimum Standard Conditions



All Plumbing Fixtures shall be free of leaks or defects which interfere with their ability to perform as intended. Existing fixtures in good and safe working order are generally not required to be repaired or replaced.

b. Other Requirements/Conditions

Any and all replacement plumbing fixtures and appliances must be installed per the manufacturer's installation instructions, including water sealing, and must be completed in accordance with all applicable requirements provided below:

- All replacement fixtures shall meet or exceed the requirements of WaterSense qualified or equivalent products.
- All replacement plumbing appliances must meet or exceed the requirements of Energy Star, or equivalent, qualified products.
- All replacement shower fixtures shall use anti-scald control devices. Access panels shall be provided to these valves, if possible, with wall and plumbing configuration prior to rehabilitation. Movement of plumbing fixtures or similar changes are not required to create access.
- All fixtures shall be supported and securely attached in a manner consistent with normal installation methods and installed level.
- All faucets shall have the hot water line on the left side of the faucet. Existing supply lines that are reversed shall be changed.
- If existing garbage disposals are not performing as intended or are not hardwired to the electrical system, they shall be removed, repaired, or replaced. New garbage disposals shall be hard wired and switched in an accessible location as close as possible to the kitchen sink.
- All repaired or replacement fixtures and appliances shall be tested for leaks and proper operation.

*5.5 Minimum Standards for Domestic Water Heaters (DWH)*

a. General Requirements and Minimum Standard Conditions

All DWHs, with the exception of tankless water heaters, shall, at a minimum, meet local jurisdictions' gallon storage capacity that can supply a continuous flow of hot water that is at least 102 degrees F, with gas or electric shut-off valves as well as cold water supply shut-off valves, all installed and functioning as intended. Larger capacity DWHs may be



installed if necessary to serve larger households. Replacement DWHs shall meet or exceed the requirements of Energy Star qualified, or equivalent, products.

(1) Temperature and Pressure Release Valve (TPRV). Each unit shall be equipped with a TPRV and must be capable of releasing pressure at 150 psi or 210 degrees Fahrenheit. Water release shall extend to the exterior of the housing, if possible, with wall and plumbing configuration prior to rehabilitation. Movement of plumbing fixtures or similar changes are not required to create access.

(2) DWH Enclosure. Each DWH shall be enclosed in a sealed closet designed for this purpose, with gas DWHs having combustion air drawn from outside the conditioned space. Gas DWHs inside conditioned spaces must be in separate closets that are not in the same room as a clothes dryer or any type of exhaust vent. All DWHs installed in a garage must be installed at a minimum 18" AFF with primary drainage draining to the exterior. DWHs in other locations shall be supported by a minimum three-foot concrete base, if possible with wall and plumbing configuration prior to rehabilitation. Movement of plumbing fixtures or similar changes are not required to install a concrete base.

## **6. Electrical Systems**

### *6.1 General Electrical Service*

#### a. General Requirements and Minimum Standard Conditions

Electrical systems must provide a safe and adequate supply of electrical current that meets the needs of the residents. Accordingly, Electrical Systems must meet or exceed the safety and efficiency requirements provided below, which require that the system is:

- Properly grounded and free of hazards with all components properly secured and covered to prevent contact or electric shock.
- In good condition, with all electrical components up to date, lacking deterioration, and free of shorts.
- Sufficiently providing adequate, consistent, and appropriate current and voltage levels at each outlet, fixture, and piece of equipment, as per its intended use.
- Equipped with conductors, fixtures, boxes, and equipment that are properly sized and rated for their intended use.
- Adequate for its current use considering resident behavior and lifestyle.



- Equipped with an adequate quantity of appropriately located lighting, receptacles, and switches.
- Maintained, repaired, or otherwise replaced primarily in accordance with Principles of Safety, Capacity, and Convenience.

#### b. Substandard Conditions

At a minimum, repair or replacement is required if any of the following conditions exist:

- Inadequate capacity (e.g. excessive use of power strips and/or multiple outlet adaptors).
- Two-wire systems (lacking grounding).
- Wiring or components missing, broken, disconnected, loose, burnt or melted, unsupported, corroded, cracked, or split.
- Panel boxes that show evidence of water intrusion or infestation.  
Frayed or burnt wiring or wire insulation.
- Circuits, switches, receptacles, or wiring is not compatible with the amperage or other characteristics of the electricity in use.
- Flexible cords used as permanent wiring (unless Non-Metallic (NM) cable(s) otherwise installed in accordance with local building codes).
- Exposed wiring on interior walls or the exterior that are not protected in conduit or raceways (unless Non-Metallic (NM) cable(s) otherwise installed in accordance with local building codes).
- Receptacles in bathrooms and kitchens within 6' of a water source and exterior receptacles that are not ground fault circuit interrupter (GFCI) protected.
- Reverse polarity.
- Unlabeled circuits.
- Missing cover plates.
- Components not securely attached to the structure.
- Inadequate lighting in rooms and outside of entry doors.
- Any other condition reasonably characterized as meeting the definition of a Hazardous or Substandard Condition.

#### c. Other Requirements/Conditions

Additions, alterations, renovations, and repairs to electrical systems and equipment must be conducted in accordance with the applicable requirements of new electrical systems and equipment by appropriately licensed electricians. Any and all additions, alterations,



and repairs MUST NOT cause existing electrical systems or equipment to become unsafe, hazardous, or overloaded.

## 6.2 Existing Wiring and Fixtures

### a. General Requirements and Minimum Standard Conditions

Existing electrical service and components must be safe, efficient, and in good working condition for its intended use. Moreover, the capacity of the system must meet the demand of the residents. Replacement is not mandatory for existing service and components that meet or exceed these Standard Conditions, unless otherwise required by code or local ordinance. Voluntary replacement may be permitted to meet the needs of the community more efficiently and cost-effectively and the current or intended demands of the residents.

### b. Substandard Conditions

Overloaded circuits are not permitted and must be addressed by separating the load and adding an adequate number of circuits necessary to carry the load safely and efficiently.

### c. Other Requirements/Conditions.

(1) Secure Fastening of Fixtures and Equipment. All components shall be securely fastened to framing members by mechanical means. No fixture or socket shall hang by unsupported wiring. All existing receptacles, switches, and junction boxes shall contain a proper cover plate. In no case shall the structural integrity of the building be compromised.

(2) New Wiring. New wiring shall be installed in a neat and workmanlike manner with all wiring runs inside of walls. If wall or ceiling cavities are not accessible, wiring shall be run in properly sized and rated raceway or wire mold, secured along the walls with proper fasteners, flush to the surface and straight.

(3) Aluminum Wiring: All aluminum wiring in housing to be rehabilitated shall be replaced with a 3-wire system and in accordance with current code requirements.

(4) Knob and Tube Wiring. Knob and tube wiring shall be replaced with a 3-wire system and in accordance with these Standards.



### *6.3 Sizing of Service and All Electrical Homes*

#### a. General Requirements and Minimum Standard Conditions

The service entrance cable shall have the same rating (amperage) as the meter base and service equipment. Replacement of a service entrance shall require calculation of the usage or load within the building to assist in determining the appropriate size. The service entrance must be properly sized for its intended post-Rehabilitation capacity. Room-by-room specifications noting electrical outlets and fixtures shall be included in the scope of work. Nameplate ratings of all appliances must be reviewed for actual VA ratings.

#### b. Other Requirements/Conditions

**Main Service Panel.** Panels shall be in proper working condition with no evidence of overheating, arcing, corrosion, or failure. The panel shall bear the UL label and shall be marked as suitable for service equipment. Any panels (or installed breakers) identified as substandard by the U.S. Consumer Product Safety Commission shall be replaced. Panels with evidence of malfunction or deterioration shall be replaced.

### *6.4 Material and Equipment Installation*

#### a. General Requirements and Minimum Standard Conditions

All materials, components, and equipment shall be listed or labeled by a qualified electrical products testing laboratory (e.g. "UL" or "CSA"). Listed materials, components, and equipment must be installed per the intended use, with location determined in accordance with the manufacturer's installation instructions.

### *6.5 Minimum Standards for Grounding*

#### a. General Requirements and Minimum Standard Conditions

All electrical systems shall consist of a single phase 3-wire grounded neutral service entrance and shall provide system grounding and equipment grounding protection. The service panel shall be connected to the grounding electrode system and an eight foot (8') galvanized or copper clad steel ground rod. All electrical panels shall meet or exceed the bonding requirements of the National Electrical Code (NEC). If present, metal water pipes shall be bonded to the grounding electrode systems as a means to ground the Plumbing



System and prevent pipes and fixtures from becoming energized and hazardous. All wiring and equipment shall be grounded in accordance with the grounding requirements of the NEC.

### *6.6 Overcurrent Protection*

#### a. General Requirements and Minimum Standard Conditions

The number of circuits installed shall not exceed the rating on the panel. The selection of a panel shall provide room for future expansion. All circuits shall be clearly, accurately, and permanently labeled with tags provided. All unused openings shall be properly plugged, capped or sealed with listed materials.

#### b. Substandard Conditions

Tandem breakers shall only be used in panels designed for them. Any service equipment containing fuse overcurrent protection shall be replaced with properly rated circuit breaker type overcurrent protection devices.

#### c. Other Requirements/Conditions

Panel board overcurrent devices shall be properly sized and located at the exterior in a subpanel if the main service panel is in the interior. All existing circuits shall be load tested for tripping.

### *6.7 Service Panel and Sub-Panel Connections*

#### a. General Requirements and Minimum Standard Conditions

All existing or new service panels shall be securely fastened to the building. All panel boxes shall be listed and used in accordance with that listing. Conductors entering the service shall have proper connectors and shall be securely and neatly attached at terminals. All circuits shall be marked and identified inside the panel box and any sub-panels.

#### b. Substandard Conditions



Wires shall not have any obvious nicks in the insulation and shall be properly bonded. When replacement is necessary, the design and location of the service panel shall be considered in conjunction with the relevant needs and desires of the residents.

c. Other Requirements/Conditions

(1) Panel Boxes. If replacement is required, new panel boxes and subpanels must be installed in conformance with applicable State and local codes.

(2) Weather head(s). Weather heads shall be at least 12' above the finished grade.

(3) Sub-panels. Sub-panels, add-on boxes, or disconnects to existing services for additional circuits shall be allowed only if the existing service equipment is listed and designed for such extension and the installation is in compliance with the NEC. Sub-panels are allowed if the existing service panel has adequate capacity but no available expansion slots.

(4) Service Disconnect. The main disconnect shall be accessible and clearly marked as a service disconnect.

*6.8 Branch Circuits*

a. General Requirements and Minimum Standard Conditions

Protection against physical damage of exposed electrical equipment shall be provided throughout Rehabilitation.

b. Other Requirements/Conditions

(1) Dedicated Circuits. Circuits shall be provided in accordance with the California Electrical Code (CEC) 210.52.(B) and section 210.52(D). The number of small appliances used by the occupants shall be taken into consideration when planning the circuit loads and placement of receptacles to avoid overloading a circuit and to eliminate the use of extension cords or multiplex outlets. Additional circuits may be necessary and are allowed. If applicable, and as sized in accordance with manufacturer's instructions, dedicated circuits are required for at least the following appliances listed below:

- Refrigerators
- Separate freezers





- Electric range or cooktop
- Electric oven
- Clothes dryer
- Electric water heater
- Electric furnace/air handler
- Microwave oven
- Air conditioner
- Sump pumps and water wells
- Septic system aerators
- Electrical vehicle chargers (see also 2022 CALGreen electrical vehicle charging infrastructure requirements for alterations or addition to parking facilities in section 4.106.4.3 if applicable); and
- Any other major electric appliance.

(2) Circuit Load Distribution. All circuit wiring shall be properly sized to serve the load.

(3) Two-wire Systems. All 2-wire, ungrounded wiring shall be replaced with 3-wire, grounded wiring.

(4) Unused Switches, Receptacles, Fixtures, Conductors and Openings. Unused switches, receptacles, fixtures, and conductors that are obtainable or otherwise within reach shall be removed. All unused openings in outlets, devices, junction boxes, conduit bodies and fittings, raceways, cabinets, and equipment cases or housings shall be effectively closed with knockout seals to prevent vermin, insects, and building materials from coming into contact with wiring.

(5) Wire Splices. All splices shall be placed in accessible and listed junction boxes that are properly covered.

(6) AFCI Protected Circuits. All newly installed branch circuits that supply 15- and 20-amp receptacles installed in family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreational rooms, closets, hallways and similar rooms or areas shall be protected by an approved circuit interrupter installed to provide protection of the branch circuit.

## 6.9 Receptacles



a. General Requirements and Minimum Standard Conditions

All replacement receptacles must be tamper-resistant and shall be listed/labeled and installed per manufacturer's instructions. Boxes must be specifically designed for its intended purpose, properly sized (rated for the size of the circuit), and mechanically fastened with attached cover plates installed. Receptacles located in damp or wet areas must be weatherproof and the wiring shall be run in boxes, conduit(s) and fittings that are listed for wet locations.

(1) Receptacle Locations

(A) All Rooms. All habitable spaces must have receptacles. In each family room, dining room, living room, parlor, library, den, sunroom, bedroom, recreation room, or similar room or area, receptacles shall be installed so that at a minimum each wall has at least one receptacle. Receptacles shall be spaced so that at no point along the perimeter of the floor is more than 6' from a receptacle. Other rooms that are not regularly used by residents/occupants are permitted to have only a minimum of one receptacle per room. Receptacles should not be located lower than 15" above the finished floor, or to code where the standard has been updated.

(B) Bathrooms. All bathrooms must have at least one dedicated 20 amp receptacle outlet that is GFCI protected and located within 3' from the outside edge of the sink. The receptacle shall be located not lower than 30" and not higher than 48" above the finished floor. Receptacles shall not be located within or directly over a bathtub or shower stall, and shall be at least 12" from the outer edge of the bathtub or shower opening.

(C) Kitchens. The kitchen shall have GFCI protected duplex receptacles in accordance with California Electrical Code section 210.52(B) and 210.52(C)(1).

(D) Other Exterior(s). Exterior receptacles shall be GFCI protected and enclosed in a listed or labeled weatherproof box in accordance with California Electrical Code 210.8(A) and 210.52.

(2) GFCI Protection. GFCI receptacles in locations other than bathrooms and kitchens (for example, but not limited to, garage, laundry rooms, within 6' of a sink) shall meet the requirements of the California Electrical Code 210.8.

*6.10 Lighting*

a. General Requirements and Minimum Standard Conditions



Every habitable room and all living spaces (e.g., bathroom, toilet room, laundry room, furnace or utility room, and hallways) shall be provided adequate natural or artificial lighting, as applicable.

(1) Natural lighting. Natural lighting must be provided by exterior glazed openings that generally open directly onto a public way, yard, or court. The net glazed area must meet applicable code standards for sizing and emergency egress requirements in the California Building Code Section 1031.2 or as otherwise required for rehabilitation of older properties.

(2) Artificial lighting. In accordance with California Building Code Section 1204.4 artificial lighting must provide an average illumination of 10 footcandles (107 lux) over an area of the room at a height of 30 inches above the floor level.

(3) Safety lighting. All stairways (e.g. interior within dwelling unit and exterior serving dwelling unit(s)) must be illuminated by at least one artificial light fixture controlled by a remote wall switch located at the top and bottom of the stairway.

### *6.11 Fixtures and Switches*

#### a. General Requirements and Minimum Standard Conditions

All replacement fixtures shall be listed or labeled, Energy Star qualified or equivalent, and must be installed in accordance with the manufacturer's installation instructions. If existing fixtures are in a good and safe condition, securely fastened to framing members, replacement is not required. (NOTE: Please see the California Energy Commission's Appliance Efficiency Program for the types of appliances required to be certified for Appliance Efficiency.)

#### b. Substandard Conditions

No fixture or receptacle shall hang from a base by unsupported wiring.

#### c. Other Requirements/Conditions

(1) Fixture and Switch Locations. At a minimum, a permanently installed lighting fixture



controlled by a wall switch is required in each room of the structure. Switches shall not be located in tub/shower areas or behind the swing of a door. All new wall switches must be located in a convenient and accessible location.

(2) Closet Fixtures. All light fixtures installed in closets shall be surface mounted or recessed can lights. Recessed can lights shall be Insulation Contact Air Tight (ICAT) rated or its equivalent. Closet fixtures shall be a minimum 6" away from any storage, clothing, or other items, and have a protective cover over the bulb.

(3) Lamps (Light Bulbs). All replacement lamps must meet or surpass the industry standards for Energy Star qualified or equivalent Light Emitting Diodes (LEDs) or Compact Fluorescent Lamps (CFLs).

## *6.12 Smoke and Carbon Monoxide Detection*

### a. General Requirements and Minimum Standard Conditions

Each dwelling shall have listed or labeled smoke detectors installed in each bedroom and in the hallway immediately adjacent to bedrooms and on every floor regardless of whether or not there is a bedroom on that floor. Smoke detectors shall draw their primary power from the electrical system, with battery backup, and without interruption except for over current protection or current NFPA standard as required by California Health and Safety Code Sections 13114 and 13263 and delineated in the Office of the State Fire Marshal's Building Materials Listing Law and Regulations.

### b. Other Requirements/Conditions

In dwellings with attached garages and/or fuel-fired appliances, carbon monoxide detectors shall be installed. CO detectors shall be listed as complying with UL 2075 and installed within 10 feet of each room lawfully used for sleeping purposes.

All smoke and carbon monoxide detection products need to be listed by the Office of the State Fire Marshal. California Building Code Section 915 recognizes both UL 2034 and 2075 for single and multiple station carbon monoxide alarms and combination smoke/carbon monoxide alarms.

## **7. Heating, Ventilation, and Air Conditioning (HVAC)**



## 7.1 HVAC Systems

### a. General Requirements and Minimum Standard Conditions

In conjunction with other systems, the HVAC system of a housing unit must effectively maintain a comfortable living environment for the residents/occupants. At a minimum, all HVAC systems must:

- Provide a reliable source of heated or cooled air, as applicable, and at a comfortable temperature for all habitable rooms in conformance with California Building Code section 1203.1 and the 1997 Uniform Housing Code;
- Control ventilation and indoor air quality; and
- Be free of contaminants that negatively affect indoor air quality.

### b. Substandard Conditions

Repair or replacement is required if any hazardous condition exists, which includes, but is not limited to, the following:

- Lack of a steady and dependable source of heating to all living areas.
- Lack of dependable source of cooling where the Department of Housing and Urban Development has listed the area as AC eligible.
- Gas-fired air handler inside the conditioned space which draws; combustion air from the interior.
- Combustion gasses not venting to the exterior.
- Leaking, damaged, rusted or cracked heat exchanger.
- Leaking, corroded or damaged gas supply pipe.
- Missing gas shut-off at each appliance.
- Lack of a functioning pilot or electric start.
- Inadequate duct system that does not supply necessary conditioned air to all living areas.
- Leaking ducts or returns.
- Mismatched or poorly repaired equipment.
- Deficiencies are too numerous to justify repair expenses.
- Unvented gas-fired wall heaters in enclosed rooms. If existing, the wall unit shall be removed and the gas line capped Gas-fired kitchen stoves and/or ovens without ventilation to the exterior.
- Lack of a functioning carbon-monoxide detector in homes with gas-fired appliances or equipment.



### c. Other Requirements/Conditions

(1) Sizing and Selecting a New System. Replacement heating equipment shall meet the California Building Efficiency Standards. Cooling equipment shall be sized in accordance with the current version of the Air Conditioning Contractors of America (ACCA) 16 Manual J or other approved methodology. Equipment selection shall comply with the current version of ACCA Manual S or other approved methodology. Data for heating and cooling loads shall be calculated in accordance with required post-rehabilitation conditions. Residential Duct Systems will comply with ACCA 1 Manual D.

(2) Installation. Installation of new systems shall comply with the manufacturer's installation instructions, as appropriate for the fuel source. All replacement equipment shall have a permanent electrical receptacle, switch, light fixture near the equipment, and installed in an accessible manner so that future inspecting, maintaining, and repairing the system can be completed.

(3) Programmable Thermostat. A programmable thermostat shall be installed when a new heating and cooling system is installed. Upon installation, the temperature settings shall be done by the contractor, the occupants shall be educated on using the thermostat and the instructions and warranty shall be provided to the occupants. The location of the thermostat shall be in a central location and not within 3' of doors, windows, appliances, or televisions and installed not higher than 48" AFF, measured from the center of the thermostat.

(4) Specific Requirements for Cooling Equipment.

(A) Climate Zones. Cooling equipment shall meet SEER/12 Energy Efficiency Ratio (EER) Energy Star Qualified, or its equivalent for the applicable climate zone, or, alternatively, shall be a heat pump.

(B) Indoor Air Handler. If the indoor air handler is being replaced, the outdoor coil shall also be replaced and it shall be matched to the indoor air handler, unless the outdoor coil is in good working condition and is compatible and properly sized to the new indoor air handler.

(5) Specific Requirements for Heating Equipment.

(A) Climate Zones. Heating equipment shall meet AFUE % for gas furnace or equivalent for the appropriate California Energy Code climate zone; greater than or equal to the SEER/EER for air source heat pump, Energy Star qualified with



electric backup (or equivalent), or, alternatively, shall be a ground-source heat pump, Energy Star qualified (or its equivalent) for the appropriate climate zone.

## 7.2 Distribution Systems

### a. General Requirements and Minimum Standard Conditions

The distribution system (e.g. ductwork) must provide an adequate supply of conditioned air to each habitable room, as well as an adequate amount of return air from each habitable room. Existing distribution systems must be inspected to determine whether the system is operating efficiently, properly balanced, and adequately supplying conditioned air for all habitable rooms. For more on ventilation requirements, see California Mechanical Code, Chapter 4.

### b. Other Requirements/Conditions

(1) Duct Cleaning. If the distribution system is dirty, but is otherwise operating effectively, duct cleaning is required. This requires complete duct sealing by mechanical means and with duct mastic (so as to adequately eliminate the source of dirt and debris entering the system).

(2) Replacement and Relocation. Replacement shall ensure all newly installed distribution systems are sized per the current version of the ACCA Manual D (or other HCD-approved methodology). Every effort should be made to relocate the replacement distribution system to the conditioned space through the installation of dropped soffits. If this is not possible, locating the distribution system in the attic shall require mechanical fastening, sealed with duct mastic, and insulation to the appropriate R-standard. Distribution systems shall not be located at the exterior of the home exposing the system to the elements.

(3) Installation. Connections and routing of new ductwork shall be completed without kinks or sharp bends and without excessive coiled or looped flexible ductwork. All connections shall be mechanically fastened, sealed with mastic, and properly supported. Runs shall be insulated to the appropriate R-standard when installed in unconditioned space.

(4) Room Pressurization. Room pressure balancing systems are recommended. Unbalanced distribution systems require transfer grills or jumper ducts to be installed to



provide balance with rooms when doors are closed (with respect to the rest of the housing unit). Undercutting doors is prohibited.

### *7.3 Ventilation and Indoor Air Quality*

#### a. General Requirements and Minimum Standard Conditions

At a minimum, sufficient ventilation must be provided so as to ensure adequate, continuous, non-contaminated air circulation throughout the Development.

#### b. Additional Requirements/Conditions

(1) Exhaust fans. Exhaust fans shall comply with or exceed the applicable requirements and must be at least Energy Star qualified (or its equivalent). All bathroom, toilet rooms, and kitchen fans shall exhaust to the exterior (either through the roof or a gable wall), be mechanically fastened, sealed with duct mastic, insulated to the appropriate R-standard, and have a mechanical damper. Flashing shall be installed to provide a positive drainage plain. Flex duct terminating at a gable vent is prohibited.

(A) Bathroom and Toilet Room Exhaust Fans. All bathrooms and toilet rooms must be ventilated by exhaust fans (vented to the outside) in accordance with CALGreen standards at section 4.506.1. Bathroom exhaust fans shall be installed on a dedicated GFCI protected circuit. Combustion appliances venting to the exterior shall not be located in bathrooms.

(B) Kitchen Exhaust Fans. Kitchens require mechanical exhaust fan(s) (e.g. kitchen range hoods) be installed unless adequately ventilated by an existing and operational exhaust fan (vented to the outside) in accordance with California Mechanical Code section 405.4.

(2) Supply Air. The following conditions apply if supply air is installed and connected to the return plenum:

- Supply air inlets must be located as required by the California Mechanical Code section 311.3;
- Spark prevention, rodent and insect screens must be installed in accordance with California Mechanical Code section 402.4;
- Ventilation must come directly from the outdoors and not from adjacent dwelling units, garages, crawlspaces, or attics and must conform to California Mechanical Code section 311.4; and





- The duct must be mechanically fastened, sealed with duct mastic as outlined in California Mechanical Code 603.10. See also California Mechanical Code sections 605 and 606 for requirements for requirements on dampers, smoke dampers, ventilating ceilings. For types of ducting and support, see CMC 603.