RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST APPENDIX A4, SECTION A4.602

(APPENDIX A5, SECTION A5.602 energy provisions for high-rise residential, hotels and motels also included) Effective January 1, 2017

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
		Prerequi elect		Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
PLANNING AND DESIGN							
Site Selection							
 A4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected. 							
 A4.103.2 Facilitate community connectivity by one of the following methods: 1. Locate project within a 1/4-mile true walking distance of at least 4 basic services; 							
 Locate project within 1/2-mile true walking distance of at least 7 basic services; or 							
 Other methods increasing access to additional resources. 							
Site Preservation							
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.							
Deconstruction and Reuse of Existing Materials							
 A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: Light fixtures. Plumbing fixtures. Doors and trim. Masonry. Electrical devices. Appliances. Foundations or portions of foundations. 							
Site Development							
4.106.2 A plan is developed and implemented to manage storm water drainage during construction.							
4.106.3 Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.							

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		Prerequi elect	sites and ives ¹	Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
4.106.4 Provide capability for electrical vehicle charging in one- and two-family dwellings and in townhouses with attached private garages; and 3 percent of total parking spaces, as specified, for multifamily dwellings.							
A4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.							
A4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following:							
 Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy. 							
 Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. 							
 Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods. 							
A4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section.							
Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.		⊠ ²	⊠ ²				
Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.			⊠ ²				
A4.106.3 Postconstruction landscape designs accomplish one or more of the following:							
 Areas disrupted during construction are restored to be consistent with native vegetation species and patterns. 							
2. Utilize at least 75 percent native California or drought tolerant plant and tree species appropriate for the climate zone region.							

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
		Prerequisites a electives ¹		Enforcing Agency	Installer or Designer	Third party
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			□ Ali
A4.106.4 Permeable paving is utilized for the parking, walking or patio surfaces in compliance with the following:						
Tier 1. Not less than 20 percent of the total parking, walking or patio surfaces shall be permeable.		⊠ ²				
Tier 2. Not less than 30 percent of the total parking, walking or patio surfaces shall be permeable.			⊠ ²			
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum aged Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(1) and A4.106.5.1(2) for low-rise residential buildings and Tables A4.106.5.1(3) and A4.106.5.1(4) for high-rise residential buildings.						
Low-Rise Residential						
Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(1).		⊠ ²				
Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(2).			⊠ ²			
High-Rise Residential, Hotels and Motels						
Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5.1(3).		⊠ ²				
Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5.1(4).			⊠ ²			
A4.106.6 Install a vegetated roof for at least 50 percent of the roof area. Vegetated roofs shall comply with requirements for roof gardens and landscaped roofs in the <i>California Building Code</i> , Chapters 15 and 16.						
A4.106.7 Reduce nonroof heat islands for 50 percent of sidewalks, patios, driveways or other paved areas by using one or more the methods listed.						
A4.106.8.1 Tier 1 and Tier 2 for one- and two- family dwellings and townhouses with attached private garages. Install a dedicated 208/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit.		\boxtimes^2	\boxtimes^2			
A4.106.8.2 Tier 1 and Tier 2 for multifamily dwellings. Provide capability for future electric vehicle charging in 5 percent of total parking spaces, as specified.		∑ ²	∑ ²			

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		Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
A4.106.9 Provide bicycle parking facilities as noted below or meet a local ordinance, whichever is more stringent. Number of bicycle parking spaces may be reduced, as approved by the enforcing agency, due to building site characteristics, including but not limited to, isolation from other development.							
 Provide short-term bicycle parking, per Section A4.106.9.1. 							
 Provide long-term bicycle parking for multifamily buildings, per Section A4.106.9.2. 							
 Provide long-term bicycle parking for hotel and motel buildings, per Section A4.106.9.3. 							
A4.106.10 [HR] Outdoor lighting systems shall be designed and installed to comply with:							
 The minimum requirements in the California Energy Code for Lighting Zones 1-4; and 				_			
 Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 							
3. Allowable BUG ratings not exceeding those shown in Table A4.106.10; or							
Comply with a lawfully enacted local ordinance, whichever is more stringent.							
Innovative Concepts and Local Environmental Conditions							
A4.108.1 Items in this section are necessary to address innovative concepts or local environmental conditions.							
Item 1							
Item 2							
Item 3							
ENERGY EFFICIENCY ⁴ – LOW RISE RESIDENTIAL							
General							
4.201.1 Building meets or exceeds the requirements of the <i>California Building Energy Efficiency Standards</i> ³ .		⊠ ²	⊠ ²				

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FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			
Performance Approach for Newly Constructed Buildings						
A4.203.1.1.1 An Energy Design Rating for the Proposed Design Building is included in the Certificate of Compliance documentation.		⊠ ²	⊠ ²			
A4.203.1.1.2 QII procedures specified in the Building Energy Efficiency Standards Reference Residential Appendix RA3.5 are completed.		⊠ ²	⊠ ²			
A4.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have either an Energy Budget that is no greater than 85 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 15% or greater reduction in its Energy Budget component compared to the Standard Design Building, as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission.		⊠²				
A4.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have either an Energy Budget that is no greater than 70 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building, or an Energy Design Rating showing a 30% or greater reduction in its Energy Budget component compared to the Standard Design Building, as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission.			⊠²			
A4.203.1.2.3 Zero Net Energy Design (elective)						
 Shall comply with all of the following: 1. Section A4.203.1.1 (Prerequisite) and; 2. Section A4.203.1.2.1 for single family buildings in Climate Zones 6 and 7, and low-rise multifamily buildings in Climate Zones 3, 5, 6, and 7, or Section A4.203.1.2.2 for single family buildings in Climate Zones 1-5 and 8-16, and low-rise multifamily buildings in Climate Zones 1, 2, 4, and 8-16 3. Energy Design Rating of zero (0) or less. 						

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD			
			sites and ives ¹	Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			□ All	
Performance Approach for Additions							
A4.204.1.1 Tier 1. If only one mechanical system is added or modified, the Energy Budget is no greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building. If two or more mechanical systems are added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building.		⊠²					
A4.204.1.2 Tier 2. If only one mechanical system is added or modified, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building. If two or more mechanical systems are added or modified, the Energy Budget is no greater than 85 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building.			⊠ ²				
ENERGY EFFICIENCY ⁴ –HIGH-RISE RESIDENTIAL, HOTELS AND MOTELS			· • •				
See Section A5.602 Nor WATER EFFICIENCY AND CONSERVATION	hresidential	Occupanc	ies Applica	ation Checkli	st		
Indoor Water Use							
4.303.1 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of Sections 4.303.1.1 through 4.303.1.4.4.							
4.303.2 Plumbing fixtures and fittings required in Section 4.303.1 shall be installed in accordance with the <i>California Plumbing Code</i> , and shall meet the applicable referenced standards.							
A4.303.1 Kitchen faucets. The maximum flow-rate of kitchen faucets shall							
not exceed 1.5 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at 60 psi. Note: Where complying faucets are unavailable, aerators or other means may be							

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		Prerequi elect	sites and ives ¹	Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
A4.303.2 Alternate water sources for nonpotable applications. Alternate nonpotable water sources are used for indoor potable water reduction. Alternate nonpotable water sources shall be installed in accordance with the <i>California Plumbing Code</i> .							
A4.303.3 Appliances. Install at least one qualified ENERGY STAR dishwasher or clothes washer.							
A4.303.4 Nonwater supplied urinals or waterless toilets are installed.							
A4.303.5 One- and two-family dwellings shall be equipped with a demand hot water recirculation system.							
Outdoor Water Use							
4.304.1 After December 1, 2015, new residential developments with an aggregate landscape area equal to or greater than 500 square feet shall comply with one of the following options:							
 A local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent, or; 							
 Projects with aggregate landscape areas less than 2500 square feet may comply with the MWELO's Appendix D Prescriptive Compliance Option. 							
A4.304.1 Rainwater catchment systems. A rainwater capture, storage and re-use system is designed and installed.							
A4.304.2 A landscape design is installed, which does not utilize potable water.							
A4.304.3 For new water service connections, landscaped irrigated areas less than 5,000 square feet shall be provided with separate submeters or metering devices for outdoor potable water use.							
WATER REUSE SYSTEMS							
A4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.							
A4.305.2 Recycled water piping is installed.							
A4.305.3 Recycled water is used for landscape irrigation.							

	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			ENFORCIN	ERIFICATIONS G AGENCY TO FICATION METI	SPECIFY
			sites and ives ¹	Enforcing Agency	Installer or Designer	Third party
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			
Innovative Concepts and Local Environmental Conditions						
A4.306.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1						
Item 2						
Item 3						
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY						
Foundation Systems						
A4.403.1 A Frost-Protected Shallow Foundation (FPSF) is designed and constructed.						
A4.403.2 Cement use in foundation mix design is reduced.						
Tier 1. Not less than a 20 percent reduction in cement use.		⊠ ²				
Tier 2. Not less than a 25 percent reduction in cement use.			⊠ ²			
Efficient Framing Techniques						
A4.404.1 Beams and headers and trimmers are the minimum size to adequately support the load.						
A4.404.2 Building dimensions and layouts are designed to minimize waste.						
A4.404.3 Use pre-manufactured building systems to eliminate solid sawn lumber whenever possible.						
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.						
Material Sources						
 A4.405.1 One or more of the following building materials, that do not require additional resources for finishing are used: 1. Exterior trim not requiring paint or stain. 						
2. Windows not requiring paint or stain.						
3. Siding or exterior wall coverings which do not require paint or stain.						
A4.405.2 Floors that do not require additional coverings are used including but not limited to stained, natural, or stamped concrete floors.						

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FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
A4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project.							
Tier 1. Not less than a 10 percent recycled content value.		⊠ ²					
Tier 2. Not less than a 15 percent recycled content value.			⊠ ²				
A4.405.4 Renewable source building products are used.							
Enhanced Durability and Reduced Maintenance							
4.406.1 Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.							
Water Resistance and Moisture Management							
A4.407.1 Install foundation and landscape drains.							
A4.407.2 Install gutter and downspout systems to route water at least 5 feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved onsite location.							
A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.							
A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.							
A4.407.5 In Climate Zone 16 an ice/water barrier is installed at roof valleys, eaves and wall to roof intersections.							
A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.							
A4.407.7 A permanent overhang or awning at least 2 feet in depth is provided.							

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FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2				
Construction Waste Reduction, Disposal and Recycling							
4.408.1 Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with one of the following:							
 Comply with a more stringent local construction and demolition waste management ordinance; or 							
 A construction waste management plan, per Section 4.408.2; or 							
3. A waste management company, per Section 4.408.3; or							
4. The waste stream reduction alternative, per Section 4.408.4.							
A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following:							
1. Tier 1 at least a 65 percent reduction with a third party verification.		⊠ ²					
2. Tier 2 at least a 75 percent reduction with a third party verification.			⊠ ²				
Exception: Equivalent waste reduction methods are developed by working with local agencies.							
Building Maintenance and Operation							
4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.							
4.410.2 Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.							
Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82(a)(2)(A) et seq. will also be exempt from the organic waste portion of this section.							

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			sites and ives ¹	Enforcing Agency	Installer or Designer	Third party
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			
Innovative Concepts and Local Environmental Conditions						
A4.411.1 Items in this section are necessary to address innovative concepts or local environmental conditions.						
Item 1						
Item 2						
Item 3						
ENVIRONMENTAL QUALITY						
Fireplaces						
4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.						
Pollutant Control						
4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.						
4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.						
4.504.2.2 Paints, stains and other coatings shall be compliant with VOC limits.						
4.504.2.3 Aerosol paints and coatings shall be compliant with product weighted MIR limits for ROC and other toxic compounds.						
4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used.						

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FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			□ Ali	
4.504.3 Carpet and carpet systems shall be compliant with VOC limits.							
4.504.4 80 percent of floor area receiving resilient flooring shall comply with specified VOC criteria.							
4.504.5 Particleboard, medium density fiberboard (MDF), and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.							
A4.504.1 Use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.							
A4.504.2 Install VOC compliant resilient flooring systems. Tier 1. At least 90 percent of the resilient		⊠ ²					
flooring installed shall comply. Tier 2. At least 100 percent of the resilient flooring installed shall comply.			⊠ ²				
A4.504.3 Thermal insulation installed in the building shall meet the following requirements:		5-10					
 Tier 1. Install thermal insulation in compliance with VOC limits. Tier 2. Install insulation which contains No-Added Formaldehyde (NAF) and is in compliance with Tier 1. 		⊠²	⊠ ²				
Interior Moisture Control							
4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations.							
4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.							
Indoor Air Quality and Exhaust							
4.506.1 Exhaust fans which terminate outside the building are provided in every bathroom.	\boxtimes						

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FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			□ All	
A4.506.1 Return air filters with a value greater than MERV 6 shall be installed on HVAC systems. Pressure drop across the filter shall not exceed 0.1 inches water column.							
A4.506.2 (HR). Provide filters on return air openings rated at MERV 6 or higher during construction when it is necessary to use HVAC equipment.							
A4.506.3 Direct vent appliances shall be used when equipment is located in conditioned space; or the equipment must be installed in an isolated mechanical room.							
Environmental Comfort							
 4.507.2. Duct systems are sized, designed and equipment is selected using the following methods: Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J - 2011 or equivalent. Size duct systems according to ANSI/ACCA 1 Manual D - 2014 or equivalent. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 or equivalent. 							
Innovative Concepts and Local Environmental Conditions							
A4.509.1 Items in this section are necessary to address innovative concepts or local environmental conditions.							
Item 1							
Item 2							
Item 3							
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS Qualifications							
702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.							

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	Prerequisites and electives ¹		Enforcing Agency	Installer or Designer	Third party	
FEATURE OR MEASURE	Mandatory	Tier 1	Tier 2			□ All
702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.						
Verifications						
703.1 Verification of compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance.						

Green building measures listed in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7.
 Required prerequisite for this Tier.
 These measures are currently required elsewhere in statute or in regulation.
 Contact California Energy Commission for energy-related questions on this checklist.