

**18.20.070 Section R901 (General) of the California Residential Code Amended.**

Section R901.1 is amended to read as follows:

**R901.1 Scope.**

The provisions of this chapter shall govern the design, materials, construction and quality of roof assemblies and rooftop structures.

1. Roofing assemblies, roof coverings, and roof structures shall be as specified in this code and as otherwise required by local ordinance or applicable law.
2. Roofing assemblies and roof coverings other than wood shakes and shingles shall be Class A fire rated.
3. Wood shakes and shingles of any classification are prohibited as a roof covering on all structures and on all replacement roofs.
4. Roof coverings shall be secured or fastened to the supporting roof construction and shall provide weather protection for the building at the roof.
5. Skylights shall be constructed as required in Section R308.6 and Chapter 9. Use of plastics in roofs shall comply with R316 and Chapter 9. Solar photo-voltaic energy collectors located above or upon a roof shall be class A fire rated.

SECTION XII: Carlsbad Municipal Code Chapter 18.21 is amended by repealing and replacing it to read as follows:

**Chapter 18.21**

**CALIFORNIA GREEN BUILDING STANDARDS CODE**

**Sections:**

- 18.21.010 Adoption and scope.**
- 18.21.020 Section 202 (Definitions) of the California Green Building Standards Code Amended.**
- 18.21.030 Section 4.106 (Site Development) of the California Green Building Standards Code Amended.**
- 18.21.040 Section 5.106 (Planning and Design) of the California Green Building Standards Code Amended.**
- 18.21.050 Appendix A5 (Nonresidential Voluntary Measures) of the California Green Building Standards Code Amended.**

**18.21.010 Adoption and scope.**

The 2022 California Green Building Standards Code, California Code of Regulations, Title 24, a portion of the California Building Standards Code, is adopted and incorporated by this reference as the green building standards code except for changes, additions, deletions and amendments in this chapter.

The following sections or chapters of Appendix A5 of the green building standards code are included in the adoption: Sections A5.201, A5.202, A5.203.1.1 through A5.203.1.2.1 Tier 1, and A5.211 through A5.213, except for changes, additions, and deletions as specified in this chapter. The following appendices are deleted: A4 and A6.1.

**18.21.020 Section 202 (Definitions) of the California Green Building Standards Code Amended.**

Section 202 of the California Green Building Standards Code is amended to revise/add the following definitions:

Electric vehicle (EV) capable space. A vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted. For the purposes of this code, an EV capable space shall include a raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box, or enclosure in close proximity to the proposed location of the EV capable spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. Future EV capable spaces may qualify as designated parking for clean air vehicles.

Electric vehicle (EV) charger. Off-board charging equipment used to charge an electric vehicle. For the purposes of this code, an EV charging space that is installed with an EV charger shall consist of a dedicated 208/240-volt branch circuit, including a listed raceway, electrical panel capacity, overcurrent protective device, wire, and receptacle. Receptacle shall be equipped with EVSE. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter) and is required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum. Other electrical components, including receptacle and EVSE, related to this section shall be installed in accordance with the California Electrical Code.

Electric vehicle (EV) ready space. A vehicle space which is provided with a branch circuit, any necessary raceways, both underground and/or surface mounted, to accommodate EV charging, terminating in a blank cover, receptacle or a charger, with a dedicated 208/240-volt branch circuit, electric panel capacity, overcurrent protective device and wire. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter) and is required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The termination point shall be in close proximity to the proposed location of an EV charger. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum. Other electrical components, including a receptacle or blank cover, related to this section shall be installed in accordance with the California Electrical Code.

Major residential renovations. Alterations and additions to existing residential structures and construction sites where: 1) for one and two family dwellings, and townhouses with attached private garages, alterations have a building permit valuation equal to or greater than \$60,000 or include an electrical service panel upgrade; or 2) for multifamily dwellings (three dwelling units or more), alterations have a building permit valuation equal to or greater than \$200,000, interior finishes are removed and significant site work and upgrades to structural, mechanical, electrical, and/or plumbing systems are proposed. Significant site work as used herein means site alterations that: Require a grading permit as required by law or ordinance of the jurisdiction; rehabilitate or install 2,500 square feet or more of landscaping; or repave, replace, or add 2,500 square feet or more of vehicle parking and drive area.

**18.21.030 Section 4.106 (Site Development) of the California Green Building Standards Code Amended.**

Section 4.106.4 is amended to read as follows:

**4.106.4 Electric vehicle (EV) charging for new construction and major residential renovations.**

New construction and major residential renovations shall comply with Section 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

Exceptions:

1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
  - 1.1. Where there is no local utility power supply or the local utility is unable to supply adequate power.

- 1.2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.
3. Where major residential renovations for one and two-family dwellings, and townhouses with attached private garages, do not include an electrical service panel upgrade, the requirements of Section 4.106.4.1 shall apply to the maximum extent that does not require an electrical service panel upgrade.
4. In major residential renovations, where there is evidence substantiating that meeting the requirements of this section presents an unreasonable hardship or is technically infeasible, the building official may consider an appeal from the project sponsor to reduce the number of EV ready spaces, EV capable spaces, and EVSE installed spaces required or provide for EV charging elsewhere.
5. Where alternative and innovative parking systems will be installed as determined by the building official.

**4.106.4.1 New one- and two-family dwellings and town-houses with attached private garages.**

For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit to provide an EV ready space. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate to the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

**4.106.4.1.1 Identification.**

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as “(EV) READY”. The receptacle or charger shall be permanently and visibly marked as “EV READY”.

**4.106.4.2 New multifamily dwellings, major residential renovations to existing multifamily dwellings, hotels and motels, and new residential parking facilities.**

When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1. The provisions of this section shall also apply to major residential renovations. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by ordinance of a local jurisdiction or any other applicable law. See Vehicle Code Section 22511.2 for further details.

**4.106.4.2.1 Multifamily development projects, major residential renovations to existing multifamily dwellings, and hotels and motels.**

The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1. EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV capable spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exceptions:

1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.
2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

Notes:

- a. Construction documents shall show locations of future EV spaces. Construction documents shall also provide information on amperage of future EVSE, raceway methods and electrical load calculations to verify that the electrical panel service capacity and electrical system has sufficient capacity to simultaneously charge future EVs at all EV capable spaces at the full amperage.
  - b. There is no requirement for EV capable spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.
2. EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with lower power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

3. EV Chargers. Five (5) percent of the total number of parking shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.
- When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

**4.106.4.2.2 When a single EV space is required, it shall be an EVSE installed space with EV charger.**

**4.106.4.2.2.1 Electric vehicle charging stations (EVCS).**

Vehicle spaces with EV chargers and other electric vehicle charging stations required by Section 4.106.4.2.1, Item 3, shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

**4.106.4.2.2.1.1 Location.**

EVCS shall comply with at least one of the following options:

1. The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2. The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

#### **4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.**

The charging spaces shall be designed to comply with the following:

1. The minimum length of each EV ready space, EV capable space, and EVSE installed space shall be 18 feet (5486 mm).
2. The minimum width of each EV ready space, EV capable space, and EVSE installed space shall be 9 feet (2743 mm).
3. One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
  - a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

#### **4.106.4.2.2.1.3 Accessible EV spaces.**

In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

#### **4.106.4.2.3 EV space requirements.**

1. Single EV space required. When a single EV ready space, EV capable space, or EVSE installed space is required, it shall be an EVSE installed space.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2. Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of EVSE installed spaces, or EV ready spaces, or EV capable spaces, receptacles, or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

#### **4.106.4.2.4 Identification.**

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

#### **4.106.4.2.5 Electric Vehicle Ready Space Signage.**

Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

**4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.**

When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV capable spaces) capable of supporting future Level 2 EVSE.

Notes:

1. Construction documents are intended to demonstrate the project’s capability and capacity for facilitating future EV charging.
2. There is no requirement for EV capable spaces to be constructed or available until EV chargers are installed for use.

**18.21.040 Section 5.106 (Planning and Design) of the California Green Building Standards Code Amended.**

Table 5.106.5.3.1 is amended to read as follows:

**TABLE 5.106.5.3.1**

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF EVCS (EVSE INSTALLED SPACE WITH EV CHARGER) <sup>2</sup>
0–9	1	1
10–25	4	1
26–50	8	2
51–75	13	3
76–100	17	5
101–150	25	6
151–200	35	9
201 and over	20 percent of total <sup>1</sup>	25 percent of EV capable spaces <sup>1</sup>

1. Calculation for spaces shall be rounded up to the nearest whole number.

2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2.

**18.21.050 Appendix A5 (Nonresidential Voluntary Measures) of the California Green Building Standards Code Amended.**

A. Appendix A5, Sections A5.201, A5.202, A5.203.1.1 through A5.203.1.2.1 Tier 1, and A5.211 through A5.213 are adopted and amended herein are mandatory requirements for the construction of nonresidential buildings and structures, multi-family buildings and structures, hotels/motels, and alterations thereto having a building permit valuation of at least \$200,000.00 or additions of at least 1,000 square feet.

B. Section A5.203.1.1.2 of the California Green Building Standards Code is amended to read as follows:

**A5.203.1.1.2 Service water heating in restaurants.**

Newly constructed restaurants shall comply with California Energy Code Section 140.5.

C. Section A5.211 of the California Green Building Standards Code is amended to read as follows:

**A5.211.1 On-site renewable energy.**

Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1 kW, (whichever is greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project’s electrical service overcurrent protection device rating shall be calculated in accordance with the California Electrical Code. Natural gas or propane use is calculated in accordance with the California Plumbing Code.

**A5.211.1.1 Documentation.**

Using a calculation method approved by the California Energy Commission, calculate the renewable on-site energy system to meet the requirements of Section A5.211.1, expressed in kW. Factor in net-metering, if offered by local utility, on an annual basis.

**A5.211.3 Green power.**

If offered by local utility provider, participate in a renewable energy portfolio program that provides a minimum of 50 percent electrical power from renewable sources. Maintain documentation through utility billings.

Exception to A5.211.1, A5.211.1.1 and A5.211.3: All new nonresidential, high-rise residential, and hotel/motel buildings, and alterations thereto having a building permit valuation of at least \$1,000,000 and affecting at least 75 percent of existing floor area, or alterations that increase roof size by at least 2,000 square feet, shall instead comply with California Energy Code Section 120.10.

SECTION XIII: Carlsbad Municipal Code Chapter 18.30 is amended by repealing and replacing it to read as follows:

**Chapter 18.30**

**CALIFORNIA ENERGY CODE**

**Sections:**

- 18.30.010 Adoption and scope.**
- 18.30.020 Section 120.11 (Solar or Recovered Energy Requirements for Water Heating Systems) of the California Energy Code Added.**
- 18.30.030 Section 140.5 (Prescriptive Requirements for Service Water-Heating Systems) of the California Energy Code Amended.**
- 18.30.040 Section 141.2 (Nonresidential Photovoltaic System Required) of the California Energy Code Added.**
- 18.30.050 Section 150 (Single-Family Residential Buildings – Mandatory Features and Devices) of the California Energy Code Added.**
- 18.30.060 Section 150.2 (Single-Family Residential Buildings – Additions and Alterations to Existing Residential Buildings) of the California Energy Code Added.**
- 18.30.070 Section 180.5 (Multifamily Residential Buildings – Additions, Alterations and Repair to Existing Multifamily Buildings) of the California Energy Code Added.**

**18.30.010 Adoption and scope.**

The 2022 California Energy Code, California Code of Regulations, Title 24, a portion of the California Building Standards Code, is adopted in its entirety and incorporated by this reference as the energy code except for

changes, additions, deletions and amendments in this chapter. The following appendices of the energy code are included in the adoption: Appendix 1-A (Standards and Documents Referenced). The following appendices are deleted: Appendix 1-B.

**18.30.020 Section 120.11 (Solar or Recovered Energy Requirements for Water Heating Systems) of the California Energy Code Added.**

Section 120.11 is added to read as follows:

**120.11 Solar or recovered energy requirements for service water heating systems.**

Any newly constructed nonresidential building shall derive its service water heating from a system that provides at least 40 percent of the energy needed for service water heating from on-site solar energy or recovered energy. Solar energy includes solar photovoltaics and solar-water heating systems.

Exception to Section 120.11: Buildings for which the building official has determined that service water heating from on-site solar energy or recovered energy is economically or physically infeasible. Applicant is responsible for demonstrating requirement infeasibility when applying for an exemption.

**18.30.030 Section 140.5 (Prescriptive Requirements for Service Water-Heating Systems) of the California Energy Code Amended.**

Section 140.5 is amended to read as follows:

**140.5 Prescriptive requirements for service water – heating systems.**

- A. Nonresidential occupancies. Service water-heating systems in nonresidential buildings and structures shall meet the requirements of 1 or 2 below, or meet the performance compliance requirements of Section 140.1:
1. School buildings less than 25,000 square feet and less than 4 stories in Climate Zones 2 through 15. A heat pump water-heating system that meets the applicable requirements of Sections 110.1, 110.3, 120.3, 120.11 and 140.5(c).
  2. All other occupancies. A service water-heating system that meets the applicable requirements of Sections 110.1, 110.3, 120.3, 120.11 and 140.5(c). In addition, a service water-heating system installed in a nonresidential building or structure shall meet the requirements of parts A, B, or C below:
    - a. A heat pump water heater. The storage tank shall be located in a conditioned space.
    - b. An electric resistance water heater.
    - c. A solar water-heating system with a minimum solar savings fraction of 0.40. Solar water-heating systems and collectors shall be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
- B. Hotel/motel occupancies. A service water-heating system installed in hotel/motel buildings and structures shall meet the requirements of Section 170.2(d) and Section 140.5(c) and be located in the garage or conditioned space.
- C. High-capacity service water-heating systems. Gas service water-heating systems with a total installed gas water heating input capacity of 1 MMBtu/h or greater shall have gas service water-heating equipment with a minimum thermal efficiency of 90 percent. Multiple units can meet this requirement if the water-heating input provided by equipment with thermal efficiencies above and below 90 percent averages out to an input capacity-weighted average of at least 90 percent.



Exception 1 to Section 140.5(c): If 25 percent of the annual service water-heating requirement is provided by site-solar energy or site-recovered energy.

Exception 2 to Section 140.5(c): Water heaters installed in individual dwelling units.

Exception 3 to Section 140.5(c): Individual gas water heaters with input capacity at or below 100,000 Btu/h shall not be included in the calculations of the total system input or total system efficiency.

**18.30.040 Section 141.2 (Nonresidential Photovoltaic System Required) of the California Energy Code Added.**

A. Section 141.2 is added to read as follows:

**141.2 Additions, alterations and repairs – nonresidential photovoltaic system required.**

Additions to existing nonresidential and hotel/motel buildings where the total roof area is increased by at least 2,000 square feet, and alterations to existing nonresidential and hotel/motel buildings with a permit valuation of at least \$1,000,000 that affect at least 75 percent of the gross floor area shall also comply with the requirements of Section 141.2.A or 141.2.B.

The required installation of a photovoltaic (PV) system shall be sized according to one of the following methods:

1. Based on gross floor area.
  - a. Buildings with greater than or equal to 10,000 square feet of gross floor area shall install a minimum PV system sized at 15 kilowatts direct current (kWdc) per 10,000 square feet of gross floor area.

PV system size = 15 kWdc X Building Size Factor, where the Building Size Factor (BSF) shall equal gross floor area / 10,000 sq. ft., rounded to the nearest tenth. The resulting product shall then be rounded to the nearest whole number. For example, a 126,800 square foot building shall require a minimum 191 kilowatt (kWdc) PV system, as follows:

PV system size = 15 kWdc X BSF, where BSF = 126,800 s.f. / 10,000 s.f. => 12.7 (rounded)

15 kWdc X 12.7 => 191 kWdc (rounded))
  - b. Buildings under 10,000 square feet of gross floor area shall install a minimum 5 kilowatt (kWdc) PV system. Applicants are encouraged to right-size the PV system based on the building's electrical demand to improve the system's cost effectiveness.
2. Based on Time Dependent Valuation (TDV). Install a solar PV system that will offset 80 percent of the building's TDV energy on an annual basis. The system sizing requirement shall be based upon total building TDV energy use including both conditioned and unconditioned space and calculated using modeling software or other methods approved by the building official.

Exceptions:

- a. The building official may waive or reduce, by the maximum extent necessary, the provisions of this Section if the building official determines there are sufficient practical challenges to make satisfaction of the requirements infeasible. Practical challenges may be a result of the building site location, limited rooftop availability, or shading from nearby structures, topography, or vegetation. The applicant is responsible for demonstrating requirement infeasibility when applying for an exemption.
- b. The building official may waive or reduce, by the maximum extent necessary, the provisions of this Section if the building official determines the building has satisfied the

purpose and intent of this provision through the use of alternate on-site renewable generation systems such as wind energy systems.

**18.30.050 Section 150 (Single-Family Residential Buildings – Mandatory Features and Devices) of the California Energy Code Added.**

Section 150(n)5 is added to read as follows:

**150(n)5 Solar or recovered energy requirements for service water heating systems.**

Any newly constructed residential building shall derive its service water heating from a system that provides at least 60 percent of the energy needed for service water heating from on-site solar energy or recovered energy. Solar energy includes solar photovoltaics and solar-water heating systems.

Exception to Section 150(n)5: Buildings for which the building official has determined that service water heating from on-site solar energy or recovered energy is economically or physically infeasible. Applicant is responsible for demonstrating requirement infeasibility when applying for an exemption.

**18.30.060 Section 150.2 (Single-Family Residential Buildings – Additions and Alterations to Existing Residential Buildings) of the California Energy Code Added.**

Section 150.2(d) is added to read as follows:

**150.2(d) Additions and alterations – energy efficiency required.**

All additions and alterations of residential buildings with a building permit valuation of \$60,000 or higher shall include one of the following energy efficiency measures:

- A. Additions and alterations of single-family residential buildings built before 1978 shall include one of the following:
  - 1. Duct sealing pursuant to the 2022 California Code of Regulations, Title 24, Section 150.2(b)1E without verification by a Home Energy Rating System (HERS) rater. All exceptions as stated in the 2022 California Code of Regulations, Title 24, Section 150.2(b)1E are allowed. Projects that require duct sealing as part of an HVAC alteration or replacement must meet all of the requirements of the 2022 California Code of Regulations, Title 24, Part 6, including HERS rater verification.
  - 2. Attic insulation with a minimum of R-38 rating. Buildings without vented attic spaces and buildings with existing attic insulation levels greater than R-5 are exempt from this attic insulation energy efficiency measure.
  - 3. Cool roof with an aged solar reflectance of greater than or equal to 0.25 and a thermal emittance of greater than or equal to 0.75. All exceptions as stated in the 2022 California Code of Regulations, Title 24, Section 150.2(b)1li for steep slope roofs and 150.2(b)1lii for low slope roofs are allowed. Only areas of roof that are to be re-roofed are subject to the cool roof upgrade. Projects that are not installing a new roof as part of the scope are exempt from this cool roof energy efficiency measure.
- B. Additions and alterations of single-family residential buildings built in 1978 or after shall include one of the following:
  - 1. A lighting package consisting of:
    - a. Replacement of all interior and exterior screw-in (A-base) incandescent and halogen lamps with screw-in LED lamps; and
    - b. Installation of manual-on automatic-off vacancy sensors that meet the 2022 California Code of Regulations, Title 24, Section 110.9(b)4 in all bathrooms, bedrooms, offices, laundry rooms, utility rooms, and garages. Spaces which already include vacancy sensors, motions sensors, or dimmers do not need to

install new sensors as required by the 2022 California Code of Regulations, Title 24, Section 110.9(b)4.

2. A water heating package consisting of:
  - a. Addition of exterior insulation meeting a minimum of R-6 to storage water heaters 20 gallons or larger in size, except if insulation installation would void the water heater warranty; and
  - b. Insulation of all accessible hot water pipes with pipe insulation a minimum of 0.75 inches in thickness. This includes insulating the supply pipe leaving the water heater, piping to faucets underneath sinks, and accessible pipes in attic spaces and crawlspaces; and
  - c. Upgrading of fitting in sinks and showers to meet current CALGreen (Title 24, Part 11 of the California Building Code) standards, except for fixtures with rated flow rates no more than 10 percent greater than current CALGreen standards.
- C. Additions and alterations of multi-family residential buildings built before 1978 shall include attic insulation with a minimum of R-38 rating. Buildings without vented attic spaces and buildings with existing attic insulation levels greater than R-5 are exempt from this attic insulation energy efficiency measure.
- D. Additions and alterations of multi-family residential buildings built between 1978 and 1991 shall include one of the following:
  1. Duct sealing pursuant to the 2022 California Code of Regulations, Title 24, Section 150.2(b)1E without verification by a HERS rater. All exceptions as stated in the 2022 California Code of Regulations, Title 24, Section 150.2(b)1E are allowed. Projects that require duct sealing as part of an HVAC alteration or replacement must meet all of the requirements of the 2022 California Code of Regulations, Title 24, Part 6, including HERS rater verification.
  2. Attic insulation with a minimum of R-38 rating. Buildings without vented attic spaces and buildings with existing attic insulation levels greater than R-5 are exempt from this attic insulation energy efficiency measure.
  3. Cool roof with an aged solar reflectance of greater than or equal to 0.25 and a thermal emittance of greater than or equal to 0.75. All exceptions as stated in the 2022 California Code of Regulations, Title 24, Section 150.2(b)1li for steep slope roofs and Section 150.2(b)1lii for low slope roofs are allowed. Only areas of roof that are to be re-roofed are subject to the cool roof upgrade. Projects that are not installing a new roof as part of the scope are exempt from this cool roof energy efficiency measure.
- E. Additions and alterations of multi-family residential buildings built after 1991 shall include one of the following:
  1. A lighting package consisting of:
    - a. Replacement of all interior and exterior screw-in (A-base) incandescent and halogen lamps with screw-in LED lamps; and
    - b. Installation of manual-on automatic-off vacancy sensors that meet the 2022 California Code of Regulations, Title 24, Section 110.9(b)4 in all bathrooms, bedrooms, offices, laundry rooms, utility rooms, and garages. Spaces which already include vacancy sensors, motions sensors, or dimmers do not need to install new sensors as required by the 2022 California Code of Regulations, Title 24, Section 110.9(b)4 .
  2. A water heating package consisting of:
    - a. Addition of exterior insulation meeting a minimum of R-6 to storage water heaters 20 gallons are larger in size, except for buildings with central water

heating systems or if insulation installation would void the water heater warranty; and

- b. Insulation of all accessible hot water pipes with pipe insulation a minimum of 0.75 inches in thickness. This includes insulating the supply pipe leaving the water heater, piping to faucets underneath sinks, and accessible pipes in attic spaces and crawlspaces; and
- c. Upgrading of fittings in sinks and showers to meet current CALGreen standards, except for fixtures with rated flow rates no more than ten percent

Note: To the extent the provisions of 2022 California Code of Regulations, Title 24, Section 150.2(d) conflict with other provisions of the California Energy Code, then the most energy conserving provisions shall supersede and control.

Exception to 2022 California Code of Regulations, Title 24, Section 150.2(d): The requirement for inclusion of energy efficiency measures does not apply to residential buildings that receive a rating of seven (7) or higher on the U.S. Department of Energy's Home Energy Score rating system based upon an assessment by a Home Energy Score Certified Assessor, to the satisfaction of the building official.

**18.30.070 Section 180.5 (Multifamily Residential Buildings – Additions, Alterations and Repair to Existing Multifamily Buildings) of the California Energy Code Added.**

Section 180.5 is added to read as follows:

**180.5 Additions, alterations and repairs – residential photovoltaic system required.**

All additions, alterations and repairs multifamily residential buildings and structures with a permit valuation of \$1,000,000 that affects at least 75 percent of the gross floor area shall comply with the requirements of 2022 California Code of Regulations, Title 24, Section 141.2 for the requirements applicable to the building and structures of this code.

EFFECTIVE DATE: This ordinance shall be effective thirty days after its adoption, and no earlier than the effective date of the 2022 California Building Standards Code, which is January 1, 2023; and the City Clerk shall certify the adoption of this ordinance and cause the full text of the ordinance or a summary of the ordinance prepared by the City Attorney to be published at least once in a newspaper of general circulation in the City of Carlsbad within fifteen days after its adoption.

INTRODUCED AND FIRST READ at a Regular Meeting of the Carlsbad City Council on the 18th day of October, 2022, and thereafter

PASSED, APPROVED AND ADOPTED at a Regular Meeting of the City Council of the City of Carlsbad on the \_\_\_ day of \_\_\_\_\_, 2022, by the following vote, to wit:

AYES:

NAYS:

ABSENT:

APPROVED AS TO FORM AND LEGALITY:

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CINDIE K. McMAHON, City Attorney

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MATT HALL, Mayor

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FAVIOLA MEDINA, City Clerk Services Manager  
(SEAL)