

## SECTION 429 ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

**429.1 Electric vehicle (EV) charging for new construction.** The provisions of this section shall apply to the construction of new buildings and accessory structures.

One-and two-family dwellings, and townhomes with attached private garages, shall comply with Section 429.3. All other buildings/structures shall comply with Section 429.4.

Electric vehicle supply equipment (EVSE) shall be installed in accordance with the National Electrical Code, Article 625.

**EXCEPTION:** Electric vehicle charging infrastructure is not required if any of the following conditions are met:

1. There is no public utility or commercial power supply.
2. Dwelling units without garages or other on-site parking.

**429.2 Definitions.** For the purposes of this section only, the following definitions apply.

**AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).** A system designed to manage electrical load across one or more Electric Vehicle Supply Equipment (EVSE).

**ELECTRIC VEHICLE (EV) CAPABLE PARKING SPACE.** A parking space provided with a conduit, electrical panel and load capacity to support future installation of EV charging equipment.

**ELECTRIC VEHICLE (EV) CHARGER.** Off-board charging equipment used to charge electric vehicles.

**ELECTRIC VEHICLE (EV) CHARGING EQUIPMENT.** Off-board electric vehicle charger(s), receptacle outlets or other equipment allowing charging of electric vehicles.

**ELECTRIC VEHICLE (EV) READY PARKING SPACE.** A parking space provided with EV chargers, receptacle outlets or other charging equipment allowing charging of electric vehicles.

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**429.3 New one- and two-family dwellings, and townhouses with attached private garages.** For each dwelling unit, a minimum 40-ampere dedicated 208/240-volt branch circuit shall be installed. A listed raceway capable of accommodating a minimum 40-ampere dedicated 208/240-volt branch circuit or a spare cable shall be permitted in lieu of a dedicated branch circuit. The branch circuit, raceway and spare cable shall be installed in accordance with the National Electrical Code and shall terminate in close

proximity to the proposed location of an EV charging equipment. The branch circuit shall terminate at a junction box, receptacle outlet, or EV charging equipment. The conduit and the spare cable shall terminate into a cabinet, box or other enclosure.

The electrical service panel and/or electrical 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.

**429.3.1 Identification.** The raceway or branch circuit termination location shall be permanently marked as “EV CAPABLE” or “EV READY,” as applicable.

**429.4 Buildings and accessory structures with on-site parking.** Buildings and accessory structures provided with on-site parking shall comply with all of the following:

1. Ten (10) percent of the total number of parking spaces shall be EV Capable and shall comply with Sections 429.4.1, 429.4.3, and 429.4.4.
2. Ten (10) percent of the total number of parking spaces shall be EV Ready and shall comply with Sections 429.4.2, 429.4.3, and 429.4.4.
3. Calculations for the required number of EV Capable and EV Ready spaces shall be rounded up to the nearest whole number.

**Exception:** Group A, Group E, and Group M occupancies shall comply with one of the following, whichever is greater:

1. The provisions of Section 429.4 shall apply only to designated employee parking spaces.
2. One of each 200 parking spaces or fraction thereof shall be EV Capable. One of each 200 parking spaces or fraction thereof shall be EV Ready.

**429.4.1 EV Capable parking spaces.** A listed raceway capable of accommodating a minimum 40-ampere dedicated 208/240-volt branch circuit shall be installed. The raceway shall terminate into a cabinet, box or other enclosure in close proximity to the proposed location of the EV capable parking space.

Raceways and related components that are planned to be installed underground, and in enclosed, inaccessible or concealed areas and spaces, shall be installed at the time of original construction. Where designated exterior on-grade EV Capable parking spaces are located more than 4 feet from a building, raceways shall be extended below grade to a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations. The pull box or stub shall be protected from vehicle impact in accordance with Section 312 of the International Fire Code.

The raceway termination location shall be permanently marked as “EV CAPABLE.”

**EXCEPTION:** In lieu of surface-mounted raceway between the electrical panel and the designated electric vehicle charging locations, permanent markings indicating the pathway for future raceway shall be permitted, with one-inch diameter capped sleeves through each wall and floor assembly that are penetrated along the route. This pathway

and the locations of capped sleeves shall be indicated on the electrical plans. Raceway shall be installed for any portion of the pathway located below slabs, below grade, or within floor, wall or roof assemblies.

**429.4.2 EV Ready parking spaces.** A minimum 40-ampere dedicated 208/240-volt branch circuit shall be installed in accordance with the National Electrical Code. The branch circuit shall terminate at a receptacle outlet or EV charging equipment in close proximity to the proposed location of the EV Ready parking space. The branch circuit termination location shall be permanently marked as “EV READY.”

**429.4.3. Electrical room(s).** Electrical room(s) and/or dedicated outdoor electrical equipment space(s) serving buildings with on-site parking spaces must be sized to accommodate the potential for electrical equipment and distribution required to serve the EV Capable and EV Ready parking spaces. The electrical service/panel capacity and the electrical system, including any on-site distribution transformer(s), shall have sufficient capacity to simultaneously charge all EVs at all required EV Ready and EV Capable parking spaces at a minimum of 40-amperes each. The electrical service panel and/or subpanel shall have all branch circuit overcurrent protective devices required for the EV Ready parking spaces installed. Space(s) reserved to permit installation of a branch circuit overcurrent protective device shall be provided for the EV Capable parking spaces.

**EXCEPTION:** Automatic Load Management System (ALMS) may be used to adjust the maximum electrical capacity required for the EV Capable parking spaces. The ALMS must be designed to allocate charging capacity among multiple EV charging stations at a minimum of 16 amperes per charger.

**429.4.4 Electric vehicle charging infrastructure for accessible parking spaces.** When EV Capable parking spaces are required, ten percent of the accessible parking spaces, rounded to the next whole number, shall be EV Capable. When EV Ready parking spaces are required, ten percent of the accessible parking spaces, rounded to the next whole number, shall be EV Ready.

The electric vehicle charging infrastructure provided for accessible EV Capable and EV Ready parking spaces may also serve adjacent parking spaces not designated as accessible parking. A maximum of ten percent of the accessible parking spaces, rounded to the next whole number, are allowed to be included in the total number of electric vehicle parking spaces required under Section 429.3(1) and 429.3(2), respectively.

**429.1 Scope.** ~~The provisions of this section shall apply to the construction of new buildings.~~

**EXCEPTIONS:**

~~1. Occupancies classified as Group R-3 or Group U.~~

~~2. Group A, Group E, or Group M occupancies, except where employee parking spaces are designated. The provisions of Section 429 shall apply only to those designated employee parking spaces.~~

**429.2 Required electric vehicle charging infrastructure.** ~~Where parking is provided, ten percent of parking spaces shall be provided with electric vehicle charging infrastructure in compliance with Sections 429.3, 429.4 and 429.5. When the calculation of percent served results in a fractional parking space, the applicant shall round up to the next whole number.~~

**429.3 Electrical room(s).** ~~Electrical room(s) serving buildings with on-site parking spaces must be sized to accommodate the potential for electrical equipment and distribution required to serve a minimum of 20 percent of the total parking spaces with 208/240 V 40-amp, circuit or equivalent electric vehicle charging infrastructure.~~

**429.4 Electric vehicle charging infrastructure.** ~~Electric vehicle charging infrastructure shall meet the following requirements:~~

~~1. A minimum number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations required to serve the parking spaces specified in Section 429.2. The electric vehicle charging stations shall be located to serve spaces designated for parking and charging electric vehicles.~~

~~2. Additional service capacity, space for future meters, panel capacity or space for additional panels, and raceways for future installation of electric vehicle charging stations. The service capacity and raceway size shall be designed to accommodate the future installation of the number of 208/240 V 40-amp, circuit or equivalent electric vehicle charging stations specified in Section 429.2. The raceway shall terminate at spaces designated for parking and charging electric vehicles in the future.~~

~~Where designated electric vehicle charging locations serve exterior on-grade parking spaces that are located more than 4 feet from a building, raceways shall be extended below grade to a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations, protected from vehicles by a curb or other device.~~

**EXCEPTION:** ~~In lieu of surface-mounted raceway between the electrical panel and the designated electric vehicle charging locations, it is permitted to provide permanent markings indicating the pathway for future raceway, and one-inch diameter capped sleeves through each wall and floor assembly that are penetrated along that route. This pathway and the locations of capped sleeves shall also be indicated on the electrical plans. Raceway shall be installed for any portion of the pathway located below slabs, below grade, or within floor, wall or roof assemblies.~~

~~Load management infrastructure may be used to adjust the size and capacity of the required building electric service equipment and circuits on the customer facilities, as well as electric utility owned infrastructure, as allowed by applicable local and national electric codes.~~

~~**429.5 Electric vehicle charging infrastructure for accessible parking spaces.**~~

~~When electric vehicle charging infrastructure is required, ten percent of accessible parking space, rounded to the next whole number, shall be provided with electric vehicle charging infrastructure. The electric vehicle charging infrastructure may also serve adjacent parking spaces not designated as accessible parking. A maximum of ten percent rounded to the next whole number, of the accessible parking spaces are allowed to be included in the total number of electric vehicle parking spaces required under Section 429.2.~~