City of Santa Clara
The Center of What's Possible

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Electric Vehicle Supply Equipment (EVSE)
California Electrical Code (CEC), Green Building Code (GBC), California Residential Code (CRC), California Building Code (CBC)

• **Submittal Requirements** for an EV charging system installed in the garage, carport or outdoors shall provide the following information:

1) Type of charging system (level 1, level 2, etc.)

2) Size of EVSE electrical circuit (most level 2 chargers require a minimum 40-amp 2-pole circuit)

3) Size of the existing electrical service and load calculation (to determine if a service upgrade will be required).

4) A floor plan / plot plan showing the location of the EVSE.

5) Specify the type of receptacle on the plan.

6) All electrical materials must be listed by a Nationally Recognized Testing Laboratory, such as UL, ETL, CSA, etc.

7) Provide manufacturer specifications of charging equipment

• **Some electric vehicles** include AC-DC conversion equipment in the vehicle, and these plug into standard electrical receptacles that are installed for that purpose. Others have the AC-DC conversion equipment mounted to the wall, and a cord with an Electric Vehicle Connector (J1772 standard) is connected to the vehicle.

• **Each outlet** installed for the purpose of charging electric vehicles shall be supplied by an individual branch circuit. Each circuit shall have no other outlets. (CEC 625.40)

•**All receptacles** installed for the connection of electric vehicle charging shall have ground-fault circuit-interruption protection for personnel. (CEC 625.54)

• **Branch Circuit** conductors shall be sized for continuous duty of not less than 125% of the maximum load of the equipment. (CEC 625.41)

• **Disconnecting Means** for equipment rated more than 60 amperes or more than 150 volts to ground, the disconnecting means shall be provided and installed in a readily accessible location. The disconnect means shall be lockable with CEC 110.25 (CEC 625.43)

• **Newly constructed** one- and two-family dwellings and townhouses with attached private garages shall comply with EV infrastructure requirements in accordance with the California Green Building Code (CRC 309.8, GBC 4.106.4)

1. In private garages with two or more parking spaces, install one Level 2 EV Ready Space and one Level 1 EV Ready Space.
2. For each dwelling unit with only one parking space, install a Level 2 EV Ready Space

Definitions: Level 1 EV Ready, Level 2 EV Ready

- Level 1 EV Ready Space: A parking space served by a complete electric circuit with a minimum of 110/120 volt, 20-ampere capacity including electrical panel capacity, overprotection device, a minimum 1"diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labelled "Electric Vehicle Outlet" with at least a 1/2" font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE).
- LEVEL 2 EV Ready Space: A parking space served by a complete electric circuit with 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labelled "Electric Vehicle Outlet" with at least a 1/2" font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

When EVSE are installed, the vehicle stall served by the EVSE is defined by California Building Code Section 202 as an Electric Vehicle Charging Station (EVCS), and the primary purpose of the vehicle stall is for charging of electric vehicles. California Building Code Part 2 Chapter 11B and the Americans with Disabilities Act establish requirements to provide accessible EV charging. Chapter 11B sets prescriptive requirements for the quantity and attributes of accessible spaces.