Electric Vehicle Charging Stations

Accessibility Regulations for Public Buildings, Public Accommodations, Commercial Facilities, and Public Housing

California Building Code (CBC) Title 24 Part 2
Effective January 1, 2017

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CALGreen Mandatory Measures

Infrastructure

2016 CALGreen Code

- Requires EV Infrastructure and EV Spaces for **new**:
  - Multifamily residential facilities
  - Nonresidential facilities

- EV Space: A space intended for future installation of EV charging equipment.

- No requirement for EV spaces to be constructed or available until EV chargers are installed for use.
CALGreen

Multifamily Residential

- Multi-family Residential (Private and Public Housing)

  Mandatory Measures
  - Applies to new facilities of 17 dwelling units or more.
  - EV spaces are calculated as 3% of parking spaces provided.
  - At least one EV space shall be in a common use area and available for use by all residents.

- Voluntary Measures: Tier 1 and Tier 2
  - EV spaces are calculated as 5% of parking spaces provided.
## 2016 CALGreen EV Spaces Required

<table>
<thead>
<tr>
<th>Parking Provided</th>
<th>Mandatory Measures EV Spaces Required</th>
<th>Voluntary Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EV Spaces Tier 1</td>
<td>EV Spaces Tier 2</td>
</tr>
<tr>
<td>0 - 9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 - 25</td>
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<td>2</td>
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<tr>
<td>26 - 50</td>
<td>2</td>
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<tr>
<td>51 - 75</td>
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<td>76 - 100</td>
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<td>7</td>
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<td>101 - 150</td>
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<td>10</td>
</tr>
<tr>
<td>151 - 200</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>201 and over</td>
<td>6% of spaces</td>
<td>8% of spaces</td>
</tr>
</tbody>
</table>
EV Charging Stations
Understanding Application of Codes

Process for applying accessibility standards:

1. Local zoning codes vary and designate number of parking spaces. Many jurisdictions do not yet have EVCS zoning ordinances.

2. Based on number of parking spaces provided, apply CALGreen requirements to determine minimum number of charging spaces to provide.

3. Apply accessibility requirements to charging and parking spaces separately for EVCS in common use areas or available to the public.
EV Charging

Federal Accessibility Requirements

State and Local Government Facilities, Public Accommodations, and Commercial Facilities, under the Americans with Disabilities Act (ADA)

- If available for use by the general public, then the EVCS must be accessible to individuals with disabilities.
- No federal accessibility standards specific to the design of EVCS, even though accessibility to EVCS is required.
- Legal precedents specify that lack of explicit scoping or technical requirements does not relieve from obligation to provide access.
EV Charging Stations
Understanding Scoping

CBC Scoping provisions are consistent with the following guidance provided by the United States Access Board:

- An EV does not need to charge every time it’s parked; therefore public and common use EVCS are charging spaces and not parking spaces.

- While an EV needs to be in a parked state to charge; charging, and not parking, is the primary purpose of an EVCS.

- EV charging is a service provided by the facility owner or public entity, and therefore must be accessible to individuals with disabilities.
The accessibility requirements for parking are separate and different for the accessibility requirements for EVCS in the CBC:

- Scoping provisions for parking are in CBC 11B-208. Scoping provisions for EVCS are in CBC 11B-228.3.
- Technical provisions for parking are in CBC 11B-502. Technical provisions for EVCS are in CBC 11B-812.
EV Charging Stations

Applying the CBC Part 2 Requirements

Chapter 2 definitions in CBC that apply to EV charging:

- DRIVE UP ELECTRIC VEHICLE CHARGING STATION
- ELECTRIC VEHICLE (EV)
- ELECTRIC VEHICLE (EV) CHARGER
- ELECTRIC VEHICLE CHARGING SPACE (EV SPACE)
- ELECTRIC VEHICLE CHARGING STATION (EVCS)
- ELECTRIC VEHICLE CONNECTOR (EV CONNECTOR)
EV Charging Infrastructure

Applying the CBC Part 2 Requirements

EV spaces in Multifamily Residential Projects

- In private multifamily residential facilities:
  - EV space shall be located adjacent to an accessible parking space with shared access aisle, or
  - EV space shall be accessible according to the specified requirements in CALGreen and located on an accessible route to the building.

- In multifamily public housing facilities, EV spaces provided in a visitor or unassigned parking area shall be accessible according to California Building Code (CBC) Chapter 11B scoping and technical requirements.
EV Charging Stations

Applying the CBC Part 2 Requirements

For all other facilities, EVCS available for public use or common use are required to be accessible. However, there are two exceptions to providing accessible EVCS:

- EVCS not available to general public (example: EVCS that charge public and private fleet vehicles) and intended for use by a designated vehicle or driver (example: EVCS assigned to an employee).

- In public housing facilities, EVCS intended for use by an EV owner or operator at their residence (space can be provided and assigned to the EVCS owner).
EV Charging Stations
Applying the CBC Part 2 Requirements

Design of accessible EVCS when EV chargers are installed

Scoping: What type? How many?
- CBC 11B-228.3 provides scoping requirements for EV chargers and the required number of accessible EVCS.

Technical: Where located? How to make accessible?
- CBC 11B-812 provides technical requirements for the three types of accessible EV spaces: van, standard, and ambulatory.
EV Charging Stations

Scoping Requirements for EV Chargers

EV Chargers serving new EVCS must meet the following requirements whether or not the EVCS are accessible:

- Operable parts on EV chargers must comply with the requirements of CBC 11B-309.4. (EV connectors are not required to meet 5-pound activating force requirements)

- All point-of-sale devices on EV chargers must comply with the required accessibility features of CBC 11B-812.10.3.
### EV Charging Stations

**CBC 11B-228.3 Scoping**

#### TABLE 11B-228.3.2.1

<table>
<thead>
<tr>
<th>Total Number of EVCS at a Facility&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Minimum Number (by type) of EVCS Required to Comply with Section 11B-812&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Van Accessible</th>
<th>Standard Accessible</th>
<th>Ambulatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4</td>
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<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>5 to 25</td>
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<td>1</td>
<td>1</td>
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<td>1</td>
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<tr>
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<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>76 to 100</td>
<td></td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>101 and over</td>
<td>1, plus 1 for each 300, or fraction thereof, over 100</td>
<td>3, plus 1 for each 60, or fraction thereof, over 100</td>
<td>3, plus 1 for each 50, or fraction thereof, over 100</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.
New Construction and Alterations of EVCS

- When new EVCS are added to a site with existing EVCS, the total number of new and existing EVCS is used to determine the number of accessible EVCS per Table 11B-228.3.2.1.

- Technical provisions apply only to new and altered EVCS; the CBC does not require existing EVCS to be altered to meet the new technical requirements.
Table 11B-228.3.2.1. addresses four (4) types of accessible EVCS for determination on number/type per facility:

- Van Accessible
- Standard Accessible
- Ambulatory
- Drive-up

EVCS technical requirements are in CBC 11B-812.
Van accessible EV space
Similar configuration to van accessible parking space

- 12 feet (144 inches) minimum width
- 18 feet (216 inches) minimum length
- Access aisle 5 feet (60 inches) minimum width located on passenger side with head-in parking (9 feet stall/8 feet access aisle is not permitted for EV space)
- Surface marking 12” high letters “EV CHARGING ONLY”
Standard accessible EV space
Similar configuration to standard accessible parking space:

- 9 feet (108 inches) minimum width
- 18 feet (216 inches) minimum length
- Access aisle 5 feet (60 inches) minimum width located on passenger or driver side of EV space
- Surface marking 12” high letters “EV CHARGING ONLY”
Ambulatory accessible EV space
No comparable requirement in accessible parking

- 10 feet (120 inches) minimum width
- 18 feet (216 inches) minimum length
- No access aisle required
- Surface marking 12” high letters “EV CHARGING ONLY”

Additional width of space provides increased access for individuals with limited or temporary mobility challenges.
Drive-up accessible EV space
Similar to motor fuel pump island at filling stations

- 17 feet wide (204 inches)
- 20 feet long (240 inches)
- No access aisle required, and no surface markings to define space
- All drive-up EVCS must meet the specified accessibility requirements

Per Chapter 2 Definition, use of a drive-up accessible EVCS is limited to 30 minutes maximum.
Access aisle requirements

- Must extend to full length of EV space minimum.
- Access aisle can be shared by two accessible EV spaces.
- Painted borderline around the perimeter of the access aisle, hatch lines 36” on center maximum within, and “NO PARKING” in 12” high letters visible from the adjacent vehicular way.
- Markings must contrast to vehicle surface, and the blue color required for identification of access aisles in accessible parking shall **not** be used.
Accessible route requirements

- An accessible route shall be provided connecting the EV space to the EV charger that serves it.
- EVCS shall be designed so accessible routes are not obstructed by cables or other elements.
- EVCS that serve a particular building or facility shall be located on an accessible route to an accessible entrance.
- Where EVCS do not serve a particular building or facility, EVCS shall be located on an accessible route to an accessible pedestrian entrance of the EV charging facility.
EV Charging Stations
CBC 11B-812 Technical

EV Charger requirements serving accessible EVCS spaces

- Charging cables cannot block the accessible route (may require cord storage).
- Clear floor space required at EV charger.
- Reach range requirements for operable parts.
- Operable parts requirements for maximum 5 lb. force (EV connectors are not required to meet 5-lb. activating force requirements).
- Point-of-sale devices must comply with CBC 11B-812.10.3.
EV Charging Stations
CBC 11B-812 Technical

EV Charger requirements serving accessible EVCS spaces

Location requirements:
- Adjacent to, and within the projected width of, the EV space it serves (if EV charger has one EV connector).
- Within the combined projected width of the EV spaces it serves (if EV charger has multiple EV connectors).
- Where EV space is parallel to vehicular way, EV charger shall be adjacent to, and 48” maximum from the head end or foot end of the EV space it serves.
Identification for accessibility

Installations of 1-4 EVCS
- No identification signs required.
- While an accessible EV space is designed for accessibility, its use is available to everyone and not limited to those with access license plates or placards.

Installations of 5-25 EVCS
- One van accessible EV space shall be identified with an ISA; the standard accessible EV space shall not be required to be identified with an ISA.
Identification for accessibility

Installations of 26 or more EVCS
- All required van accessible and all required standard accessible shall be identified by an ISA.

Ambulatory EVCS
- Not required to be identified with an ISA.

Drive-up EVCS
- Not required to be identified with an ISA.
Identification for accessibility

- ISA sign shall be reflectorized with a minimum area of 70 square inches.

- Location of sign adjacent to EV space or at head end of EV space, mounted 60” AFF to bottom of sign, may be mounted on wall, or mounted 80” AFF if in circulation path.

- When signs are required, and if EV space is van accessible, then a sign stating “van accessible” shall be provided.
If properly signed per local ordinance, EV charging time limits can be applied to all users:

- Per the California Department of Motor Vehicles, EVCS are “zones reserved for special types of vehicles”, in which right to park for unlimited periods of time does not apply.

- Vehicles displaying accessible license plates or placards may not park for unlimited periods of time in an accessible EVCS identified by an ISA where the length of time is restricted or metered.
EV Charging Stations
Sample Layout

Two EVCS: one van accessible EV spaces required
EV Charging Stations
Sample Layout

Five EVCS: two accessible EV spaces required
EV Charging Stations

Sample Layout

26 EVCS: three accessible EV spaces required
EV Charging Stations

Alterations

An alteration, by definition in the CBC, is a change, addition or modification in construction, change in occupancy or use, or structural repair to an existing building or facility.

According to CBC 11B-202.4, when alterations or additions are made to existing buildings or facilities, an accessible "path of travel" to the specific area of alteration or addition shall be provided.

While installing EVCS is an electrical project, it is not considered exempt from path-of-travel improvements, because EVCS affect the “usability” of the facility.
EV Charging Stations
Path of Travel Improvements

Path of Travel Improvements (POTIs) include the following elements serving the area of alteration:

- A primary entrance to the building or facility (including from site arrival points, by definition)
- Toilet and bathing facilities
- Drinking fountains
- Public telephones
- Signs (California requirement)

If these components are compliant, no additional work is required.
EV Charging Stations
Path of Travel Improvements

CBC 11B-202.4 Exception 10:

▪ When installing new EVCS at existing facilities where vehicle fueling, charging, parking or storage is a primary function, POTIs are limited to 20% of cost of work directly associated with the installation of EVCS. (example: EVCS in a parking structure when the parking structure does not serve a specific building)

▪ Alterations where installing new EVCS at existing facilities where vehicle fueling, charging, parking or storage is not a primary function, POTIs are not required. (example: EVCS serving a specific building)
Facility alterations limited to EVCS installations are not permitted to claim an *unreasonable hardship* for the cost of *path of travel improvements*, because *path of travel improvements*, when applicable, are already limited to 20% of the adjusted construction cost.
Providing the necessary accessibility to EVCS installations in existing facilities may be technically infeasible on a case-by-case basis. A finding of technical infeasibility requires a site-specific assessment of constraints or complications regarding the planned scope of work.

When technically infeasible to provide full compliance, the alteration shall provide equivalent facilitation or comply with the requirements to the maximum extent feasible.

Details of any finding of technical infeasibility shall be recorded and entered into the files of the enforcing agency.
EV Charging Stations
Alterations

- While an EV needs to be in a parked state to recharge; charging is the primary purpose of an EVCS. EVCS are not parking spaces; therefore, EVCS are not considered a “site arrival point.”

- Path of Travel Improvements for a facility alteration require existing accessible parking spaces to be upgraded to current CBC; however, existing accessible EVCS are not required to be upgraded to current CBC because EVCS are not a site arrival point.
DSA EVCS Webpage
http://www.dgs.ca.gov/dsa/Programs/progAccess/evcs.aspx

Includes:
Federal Resources and CBC Requirements
EVCS Fact Sheet Summary
EVCS PowerPoint (Video coming soon)
EVCS Frequently Asked Questions (FAQs)

CBC Technical Guidance
DSA Technical Assistance Helpline (916) 445-5827
Thank You!

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