San Francisco EV Readiness Code – 2018-to-2022 Permits

What You Need to Know

- New construction and major alterations in San Francisco permitted from 2018 through 2022 must follow San Francisco's Green Building Code's (SFGBC 2019) "EV readiness" requirements, which supersede California's Green Building Standards Code 2019 (CALGreen), for both residential and commercial projects.
- Code requires reserving electrical capacity for electric vehicle (EV) charging – enough capacity that EVs in 20% of vehicle stalls could charge simultaneously. See below for additional requirements.
- Code guidance for projects applying for permits after January 1, 2023, can be found in a companion document on the EV Charge SF webpage.

San Francisco Green Building Code and CALGreen

In 2017, San Francisco passed a law, referred to as the "EV Readiness Ordinance", which went into effect on January 1, 2018. The law, an example of a local "reach" code, is part of the City's Green Building Code ("SFGBC"). The SFGBC's EV readiness code applies to new construction buildings and existing buildings with major alterations in San Francisco, including both residential and most non-residential buildings.

For buildings permitted from 2018 through 2022, the EV readiness requirements are found in the 2019 version of the SFGBC, specifically in Sections 4.106.4 (residential) and 5.106.5.3 (non-res.).[1] Note that for buildings with permit applications starting in 2023, an updated 2022 version of SFGBC will apply. The EV Charge SF webpage provides a guide for projects under this 2022 code cycle.

Key Requirements for EV Readiness

- **Dedicated Electrical Capacity for EV Charging:** Capacity sized for 20% of vehicles stalls multiplied by a minimum 40 Amps at 208/240V. Capacity to be distributed as follows:

- **Fully Wired EV Ready Branch Circuits:** In 10% of vehicle stalls install a full branch circuit with minimum of 40 Amps 208/240V capacity, including sufficient electrical panel service capacity, circuit breaker, raceway, wire, and suitable termination point such as a receptacle. Termination points "shall be in close proximity to the proposed EV charger location."[2] (Note: "EV Ready" definition differs in the 2022 code cycle.)
- **"EV Capable"[3] Vehicle Stalls:** For 10% (additional) of vehicle stalls, provide electrical capacity and space in installed electrical panels to support a future 40 Amps 208/240V capacity circuit breaker and branch circuit. (Ref. 4.106.4.2.4.(b)) For the 2019 code cycle, installing a full raceway is not required; the code requires installing raceway or sleeves as necessary where penetrations to walls, floors, or other partitions will be needed to install future panels and branch circuits to these vehicle stalls. (Ref. 4.106.4.2.4(c).2)
- **EV Branch Circuit Pathways:** Because SFGBC 2019 considers 100% of vehicle stalls to be (future) EV spaces, install raceway or sleeves where penetrations to walls, floors, or other partitions would be necessary to install future panels and branch circuits to all vehicle stalls.

The table below illustrates how the SFGBC 2019 would apply to a new building with 100 vehicle stalls. The table is derived from the EV Charge SF Program Workbook, found at sfpuc.org/evchargeSF.

SF EV-Ready Code Requirements		
Full workbook at: sfpuc.org/evchargesf	**Quantity (e.g.)**	
Total Vehicle Stalls	**100**	**Total vehicle stalls**
The SF EV Ordinance applies to your project in the following ways.		
# of vehicle stalls used to calculate the code-required EV-Dedicated Electrical Capacity	*20*	*Vehicle Stalls*
EV-Dedicated Electrical Capacity Required	**800**	**Electrical Capacity Required**
10% must have EV Ready Circuits (Amps, Breaker, Wiring, Conduit)	**10**	**EV Ready Vehicle Stalls Required**
The Electrical Panel must have ELECTRICAL CAPACITY and SPACE for BREAKERS for an additional 10% vehicle stalls	**10**	**Empty Breakers Required**

Additional Requirements[4]

- SFGBC requires electrical panels to be placed on each parking level with electrical service capacity dedicated to EV charging. An exception exists for multifamily residential, allowing panels elsewhere, such as another parking level or within a dwelling unit, for circuits reserved exclusively for EV charging. (4.106.4.2.4(b))
- Electrical panel circuit directories must identify the circuit breakers reserved for future EV charging, and their branch circuit terminations: mark "EV Supply Equipment (EVSE) READY" for full circuits and "EVSE CAPABLE" for the empty breaker slots. (4.106.4.2.5)
- Installation of one EV Fast Charger (DCFC) may substitute for five (5) full EV Ready branch circuits to vehicle stalls for residential, and ten (10) EV Ready circuits to vehicle stalls for non-residential, provided that the project includes at least one full 40 Amp EV Ready branch circuit to a vehicle stall. See 4.106.4.2.4.1 and 5.106.5.3.2.1 for additional DCFC requirements.
- Exceptions: SFGBC includes partial or full exceptions for 100% seismic upgrades, infeasibility due to utility-side infrastructure impacts, and some major alterations. See 4.106.4 and 5.106.5.3.2.

- "Major Alteration": SFGBC's specific definition for what constitutes as a major alteration is captured in SF Department of Building Inspection's Administrative Bulletin #093.
- New Commercial garage projects also are subject to San Francisco's Commercial Garage Ordinance. See SF Department of the Environment's Fact Sheet for more information.

Questions?

Contact **San Francisco Public Utilities Commission** at (415) 554-0773 or email PowerPrograms@sfwater.org

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DISCLAIMER: This Fact Sheet is provided by **San Francisco Public Utilities Commission's (SFPUC's) EV Charge SF program.** Please note additional building ordinances and codes not mentioned in this document such as fire and structural requirements still apply. This document is not a substitute for any code or ordinance, and users should refer directly to code documents when developing designs or engineering documents. The City of San Francisco Department of Building Inspection is responsible for interpretation and compliance decisions.

For more information about SFPUC's **EV Charge SF program**, please visit our program webpage.

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[1] SFGBC lists separate EV Readiness requirements for new hotel/motels. See 4.106.4.3.
[2] Install at least two branch circuits where total number of vehicle stalls is two or more. For one- and two-dwelling unit buildings and townhouses with attached or adjacent garages, this same full branch circuit requirement applies to each vehicle stall. See 4.106.4.1.

[3] For SFGBC 2019, the term "EV Capable" does not include installed raceway. However, "EV Capable" in CalGreen 2022, and thus SFGBC 2022, does include installing raceway from the panel to the vehicle stall.

[4] This document does not include all EV Readiness code provisions. See code text to ensure compliance.