

San Francisco EV Readiness Code – 2023-to-2024 Permits



What You Need to Know

- San Francisco's Green Building Code's "EV readiness" requirements apply to residential and commercial new construction buildings and existing buildings with major alterations.
- While this "reach code" includes certain extra local requirements, for projects permitted after January 1, 2023, local requirements mostly align with the updated CALGreen 2022.
- Guidance for projects permitted from 2018 through 2022, for which San Francisco's code has greater differences from CALGreen, is provided in a companion document found on the [EV Charge SF webpage](#).

Overview

This fact sheet is intended to help readers understand key EV charging concepts in the San Francisco Green Building Code 2022 ("SFGBC") and the California Green Building Standards Code 2022 ("CALGreen"). In this Fact Sheet, CLEAResult's Transportation Electrification subject matter experts summarize key requirements of the code for the benefit of the San Francisco Public Utilities Commission's ("SFPUC") EV Charge SF customers.

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. SF Department of Building Inspection is responsible for interpretation and compliance decisions.

For example, the SF Fire Department Bureau of Fire Prevention & Investigation's [Administrative Bulletin 2022 4.29](#) contains updated fire sprinkler requirements and specifications for parking garages with EV charging effective January 1, 2023. This Administrative Bulletin should be consulted and incorporated into your project designs.

San Francisco Green Building Code and CALGreen

The SF EV Ready Ordinance originally took effect January 1, 2018; updated requirements are in Sections [4.106.4](#) and [5.106.5.3](#) in the SFGBC-2022 code. SFGBC EV charging codes apply to new construction buildings and existing buildings with major alterations in San Francisco. The ordinance applies to multiple building occupancy categories; this document focuses on non-residential and multifamily dwellings with three or more units.

The purpose of SFGBC’s EV codes is to prepare San Francisco for widespread EV adoption by providing access to charging to its residents and visitors. The requirements start with [CALGreen](#), a set of landmark building codes aimed at reducing greenhouse gases. SFGBC then adjusts certain CALGreen codes to be more clear or more stringent.

By adopting CALGreen with local amendments, the City makes the SFGBC (not CALGreen) the applicable standard for projects in San Francisco. That said, except for major alterations in existing buildings and certain non-residential requirements, SFGBC and CALGreen 2022 are very similar.

Key Definitions of EV Spaces

EV and EV charging nomenclature is continually in development. Harmonizing the different types of EV vehicle spaces is important when determining how to identify the correct requirements for new development projects. The table below describes how key EV spaces are defined in SFGBC and this document. As a reminder, this document focuses on non-residential and multifamily buildings. Residential dwellings with less than three units may use these terms with slight variations.

Table 1. EV Spaces Definitions

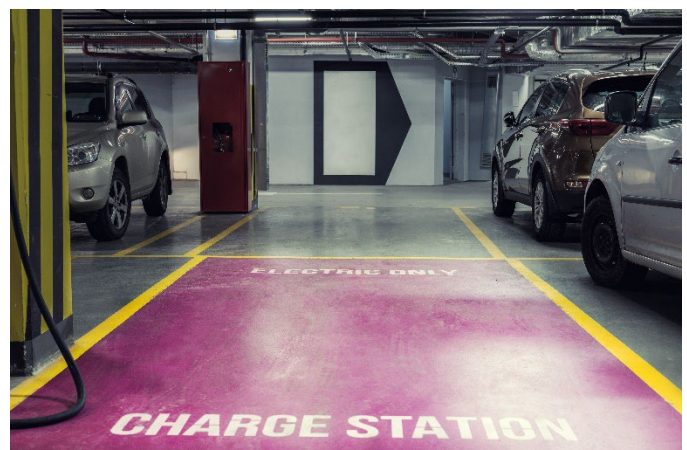
Type of EV Spaces	SFGBC	Fact Sheet Interpretation
EV Space	A space intended for future installation of EV charging equipment and charging of electric vehicles.	In this Fact Sheet, EV Space is the general term used to indicate a vehicle space that is either EV Capable, EV Ready or EV Supply Equipment (EVSE) installed under the code.
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, to support EV charging.	An EV Capable Space requires, at minimum, 208/240V, 40 Amps of electrical capacity, breaker space in a panel, raceway (can be empty), and a raceway termination. The breaker space and raceway termination are required to be marked as “EV Capable”.
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 receptacle or a charger.	An EV Ready Space requires, at minimum, a dedicated 208/240V 20 Amp breaker marked as “EV Ready” in a panel, raceway with wiring, and a receptacle or charger.

Key Requirements¹

SFGBC’s EV code has many nuances and understanding it fully can be challenging. The sections and charts below are designed to provide a baseline understanding of this local code, including the required quantities for each type of EV space and the associated power load requirements.

Multifamily, Motel and Hotel EV Space Requirements

The SFGBC largely mirrors CALGreen’s EV charging codes for multifamily, motels and hotels, but also has amendments that address certain barriers commonly experienced by multifamily buildings. SFGBC 4.106.4.2.3.2.a i-ii requires panels be placed on each parking level with electrical service capacity dedicated to EV charging. Raceways or sleeves must also be installed where penetrations to walls, floors or other partitions will be necessary



to install panels, raceways, or related electrical components for future branch circuits. This amendment addresses and reduces the burden and cost of future installation of EV charging stations and receptacles as it avoids additional conduit runs to electrical closets and infrastructure on different parking levels.

Table 2 below provides guidance for the number and types of EV Spaces and their related infrastructure requirements for multifamily, motels and hotels.

Table 2. SFGBC Multifamily, Motel and Hotel Requirements Amending CALGreen

Requirement Type	Small Site (3-19 Units)	Large Site (20 or greater Units)
Panel	Requires panel(s) to be installed on each parking level with planned or installed dedicated EV charging circuits ¹	
EV Capable Spaces	Requires panels to have electrical capacity and space reserved for circuit-breaker for a future 40 Amp circuit, and requires raceway/conduit (can be empty), for 10% of total vehicle spaces	
EV Ready Spaces	Requires 208/240V, 20 Amp circuit ending in a receptacle for 25% of total vehicle spaces – in addition to the EV Capable Spaces. (Spaces served by parking lifts are exempt)	
Installed Level 2 EV Chargers	No requirement, however, EV Capable required quantity may be reduced by the number of spaces served by installed Level 2 EV Chargers	Requires installed Level 2 EV chargers with dedicated 40 Amp branch circuits for 5% of total vehicle spaces – in addition to EV Capable and EV Ready Spaces; at least one to be unassigned guest or resident space if a common use parking area exists
Automated Load Management System (ALMS) ²	Not required, however EV Charge SF recommends both Small and Large multifamily sites consider this option if exceeding the minimum # of EV spaces	ALMS may be installed when EV Ready (20 Amp) receptacles or Level 2 EV Chargers (40 Amp) have been installed beyond minimum requirements

¹ SFGBC provides an exception for condominiums (typically categorized as multifamily) to connect an individual unit’s EV charger(s) to corresponding unit’s panels and metered utility service.

² ALMS is a tool that will help expand the number of EV charging stations installed while managing to keep overall electrical demand within a building’s existing capacity. SFGBC did not amend CALGreen’s stipulations for ALMS, which requires that the electrical system and service capacity must still be able to deliver at least 3.3kW to each EV charging station served by ALMS so that the minimum required electrical capacity for EV Capable Spaces is not reduced. Therefore, ALMS should be used to control the minimum required EV load or more.

Note: While ALMS is specifically mentioned in the multifamily, motel and hotel section of CALGreen, ALMS can be used at other types of buildings where longer parking dwell and charge session durations are expected. Examples include employee parking or other buildings where visitors routinely park for over two hours per day.

Non-Residential EV Space Requirements

While SFGBC’s non-residential requirements also mostly follow CALGreen’s codes, there are key amendments that increase the required EV Capable Spaces for buildings with specific amounts of total vehicle spaces. The following table is based on SFGBC Table 5.106.5.3.1, which determines the number and type of EV Spaces required for all commercial buildings and excludes multifamily buildings. To clarify the requirements we have added an expanded interpretation in the table row that is highlighted in yellow.

Table 3. SFGBC Non-Residential Requirements Amending CALGreen

Total Number of Actual Parking Spaces	Number of Required EV Capable Spaces	Number of EVCS (EV Capable Spaces Provided with EVSE) ²
<i>Expanded Interpretation</i>	<i>Number of planned 40 Amp circuits with electrical capacity & raceways</i>	<i>Number of planned 40 Amp circuits in previous column that must have wire & EV Charger(s) installed</i>
1-4	1	0
5-9	2	0
10-25	4	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 and over	20% of total ¹	25% of EV Capable Spaces ¹

¹ Calculation for spaces shall round up to the nearest whole number

² The number of required EVCS (EV Capable Spaces provided with EVSE) in column 3 count towards the total number of required EV Capable Spaces without EVSE in column 2.

The above footnotes come from the SFGBC table, and the second footnote in particular can be confusing. For example, a building with 50 total vehicle spaces might be misunderstood to mean that the site needs electrical capacity for a total of 10 EV Charging spaces; the intent, however, is that a building with 50 parking spaces requires 2 installed 40 Amp circuits, each powering an installed EV Charger, and additional breaker space, electrical capacity and raceways for 6 future EV chargers for a total of 8 EV Capable spaces.

Commercial Garage EV Charging Ordinance

San Francisco's [Commercial Garage EV Charging Ordinance \(Ordinance 244-19\)](#) requires existing publicly accessible commercial garages and lots with more than 100 parking spaces to install EV charging stations at 10% of vehicle spaces. Residential only, free parking, and City-owned garages and lots are exempt from this ordinance. Applicable commercial garages will need to have more EVSE installed spaces than shown in Column 3 of Table 3, however the amount of EV Capable Spaces in Column 2 will remain unchanged.

Other Commercial and Light Industrial Considerations

For grocery, retail, and warehouse buildings, electrical capacity for future medium- and heavy-duty EV charging is required based on the number of off-street loading spaces. The capacity required is significant and prepares the site for a future with higher capacity charging infrastructure. The key point is that additional capacity is required for sites that are more likely to utilize medium- and heavy-duty EV's such as delivery or freight trucks. These larger vehicles may require larger electrical load to replenish larger batteries.

Table 4. CALGreen Requirements for Medium- & Heavy-Duty EVSE

Building Type	Building Size (Sq. Ft.)	Number of Off-Street Loading Spaces	Add'l Capacity Required (KVA) for Raceway & Busway and Transformer & Panel
Grocery	10,000 - 90,000	1 - 2	200
		3 or greater	400
	Greater than 90,000	1 or greater	400
Retail	10,000 - 135,000	1 - 2	200
		3 or greater	400
	Greater than 135,000	1 or greater	400
Warehouse	20,000 - 256,000	1 - 2	200
		3 or greater	400
	Greater than 256,000	1 or greater	400

New One-and-Two-Family Dwellings and Townhouses with Attached or Adjacent Private Garages

SFGBC (Sec. 4.106.4.1) requires, for each parking space, installing a 40 Amp 208/240V branch circuit, including electrical panel capacity, circuit breaker, raceway with wire, and termination point such as a receptacle. Note, this requirement differs from CALGreen, and differs from the 20 Amp requirement for “EV Ready” spaces in multifamily buildings.

Questions?

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

For more information about SFPUC’s **EV Charge SF program**, please visit the program [webpage](#).

Prepared By: CLEAResult for SFPUC’s EV Charge SF Program

