



**Building and Safety
Permit Service Center**

All plans must be submitted as an unsecured, flattened PDF with embedded fonts. Minimum 11"x17" sheet size.

This checklist is intended to provide information and improve consistency in local application and enforcement of the California Building Code requirements as they may apply to this project.

For small solar PV rooftop systems (up to 10kW AC). The equipment, system, associated wiring and connections shall be installed by a qualified person.

Numbers in parenthesis refer to code sections of the 2025 edition of the California Residential Code (CRC), California Electrical Code (CEC), California Mechanical Code (CMC), California Plumbing Code (CPC), California Energy Code (CEnC) and California Green Building Standards Code (CGBSC).

Building and Safety
1947 Center St. 3rd floor
Berkeley, CA 94704
510-981-7440 TTY 6903
buildingandsafety@berkeleyca.gov

Code Compliance Checklist

SOLAR PHOTOVOLTAIC

Project Information

Permit #:

Address:

Permit Submittal Requirements

Schematic Site Plan showing: (a) building footprint with distances to property lines; (b) location of the solar PV system(s); (c) location of the main electrical service panel; (d) subpanel(s) (if any); (e) exterior and interior locations of all equipment and disconnects with working space clearances; (f) clear access pathways from roof eaves to ridges as indicates in the Code Requirements below. The site plan shall also contain project information (i.e., project address, owner's information, scope of work statement) and legend of symbols used on the drawings. See Code Requirements below for any additional guidance.

Structural Plan showing: (a) types, sizes, spacing and span of the existing roof framing members; (b) number and location of the solar panel supports; (c) construction details for the attachment of the solar arrays to the supporting roof framing; (d) type, size and length of fastener to be used. Panels that are not flush mounted (10 inches or more) require a licensed engineer to provide a structural analysis and details of connection adequate to resist wind uplift.

Electrical Plan showing: (a) complete single line diagram of the PV and utility interconnect; (b) existing service size and number of meters; (c) size, type, and insulation ratings (voltage, temperature, etc.) of all conductors and associated wiring components on the direct current (DC) and alternating (AC) side of the PV system; (d) type, size and material of raceway(s); (e) markings and labeling. Manufacturer's specifications sheets shall be provided for all proposed components. See Code Requirements below for any additional guidance.

Electrical Code Requirements

Qualifications of Installer: The equipment, system, associated wiring and interconnections shall be installed by a qualified person trained per NFPA 70E 2018. [CEC 690.4(C)]

Equipment Listings: Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction. Mounting systems listed and labeled in accordance with UL 2703 shall be installed in accordance with the manufacturer's installation instructions and their listings. Building-integrated photovoltaic (BIPV) roof coverings and BIPV roof assemblies shall be listed and labeled in accordance with UL 7103. [R329.3.1]

Listing of Existing Equipment: The installer shall ensure that any alterations or additions to the existing system(s) shall not cause existing equipment or components to lose their listings. [CEC 110.3]

Grounding: Interconnected electric power production sources shall be grounded in accordance with CEC 250. [CEC 705.11(E)]

Ground-Fault Protection: Ground-Fault Protection for DC PV arrays shall meet the requirements of CEC 690.41(B) to reduce fire hazards. Provide grounding instructions for module and mounting rails at time of inspection.

Arc-Fault Circuit Protection: PV systems operating at a maximum system voltage of 80 volts or greater, shall be protected as specified in CEC 690.11.

Disconnecting Means: Shall be provided to disconnect the PV system from all wiring systems including power systems, energy storage systems, and utilization equipment and its associated premises wiring. The PV system disconnecting means shall be installed at a readily accessible location. [CEC 690.13 and 690.15]

AC and DC Disconnect: Isolating devices or equipment disconnecting means shall be externally operable without exposing the operator to contact with energized parts and shall indicate whether in the open (off) or closed (on) position. Where not within sight or not within 10 feet of the equipment, the disconnecting means or its remote operating device or the enclosure providing access to the disconnecting means shall be capable of being locked in accordance with 110.25. [CEC 690.15(C)(3)]

DC Disconnect Markings: A permanent readily visible label indicating the highest maximum DC voltage in a PV system, per CEC 690.7, shall be provided by the installer at one of the following locations: (1) DC PV system disconnecting means; (2) PV system electronic power conversion equipment; or (3) Distribution equipment associated with the PV system. [CEC 690.7(D)]

DC PV Source & Output Circuits Inside a Building: Where PV system DC circuits run inside a building, they shall be contained in metal race-ways, type MC metal-clad cable that complies with CEC 250.118(A)(10)(b) or (A)(10)(c), or metal enclosures. The wiring methods shall comply with the additional installation requirements listed in CEC 690.31(F).

Rapid Shutdown: PV system circuits installed on or in buildings shall include a rapid shutdown function that controls specific conductors as follows: [CEC 690.12]

- Provide shock hazard control for firefighters by limiting the highest voltage inside equipment or between any two conductors of a circuit or any conductor and ground inside array boundary to not more than 80 volts within 30 seconds of rapid shutdown initiation.
- Controlled conductors located outside the boundary or more than 3 feet from the point of entry inside a building shall be limited to not more than 30 volts within 30 seconds of rapid shutdown initiation.
- Controlled conductors located inside the boundary shall provide shock hazard control for firefighters by limiting the highest voltage inside equipment or between any two conductors of a circuit or any conductor and ground inside array boundary to not more than 80 volts within 30 seconds of rapid shutdown initiation.
- Voltage and power shall be measured between any two conductors and between any conductor and ground.
- An initiation device(s) shall be located at a readily accessible location outside the building. The rapid shutdown initiation device(s) shall consist of at least one of the following: (1) Service disconnecting means; (2) PV system disconnecting means; (3) Readily accessible switch that plainly indicates whether it is in the "off" or "on" position.
- Buildings with PV systems shall have a permanent label located at each service equipment location to which the PV systems are connected or at an approved readily visible location and shall indicate the location of rapid shutdown initiation devices.

Identification of Power Sources: Buildings or structures with both utility service and a PV system shall have permanent plaques or directories shall be installed in accordance with 705.10.

Point of Connection Rating: PV systems connected to other sources shall be installed in accordance with Parts I and II of Article 705. Note that the sum of the ratings of all overcurrent devices connected to power production sources shall not exceed the rating of the service.

Supply Side Connection: Pursuant to CEC 230.82(6), an electric power production source shall be permitted to be connected to the supply side of the service disconnecting means. Service conductor splices and taps shall be made in accordance with 230.33 or 230.46 and comply with all applicable enclosure fill requirements. Unless the existing panel is designed for a supply side connection, the installer must demonstrate that the installed supply side connection will not void or violate the panel manufacture's listing. [CEC 705.11]

Load Side Connection: The output of an interconnected electric power source shall be permitted to be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises. Where distribution equipment or feeders are fed simultaneously by a primary source of electricity and one or more other power source(s), the feeders or distribution equipment shall comply with relevant sections of 705.12(A) and (B).

Busbars: The sum of 125 percent of the power source(s) output circuit current and the rating of the overcurrent device protecting the busbar shall not exceed the busbar ampere rating. [CEC 705.12(B)(1)]

Identification and Grouping: PV system conductors shall be identified and grouped as required by CEC 690.31(B).

Marking and Labeling Required: The following wiring methods and enclosures that contain PV power source conductors shall be marked with the wording "WARNING: PHOTOVOLTAIC POWER SOURCE" by means of permanently affixed labels or other approved permanent marking: [CEC 690.31(D)(2)]

- Exposed raceways, cable trays and other wiring methods;
- Covers or enclosures of pull boxes and junction boxes; and
- Conduit bodies in which any of the available conduit openings are unused.

Marking Locations: The labels or marking shall be visible after installation. The labels shall be reflective, and all letters shall be capitalized and shall be a minimum height of 3/8 inch in white on a red background. PV power circuit labels shall appear on every section of the wiring system that is separated by enclosures, walls, partitions, ceiling or floors. Spacing between labels or markings, or between a label and a marking, shall not be more than 10 feet. Labels required by this section shall be suitable for the environment where they are installed. [CEC 690.31(D) (2)]

Structural Code Requirements

Rafter Span: The rafter's spans shall be measured horizontally from ridge board to supporting wall top plates. Installation of purlins and braces to reduce the span of rafters is limited to a slope not less than 45 degrees from the horizontal. [CRC R802.4.1 & R902.4.5]

Roof Framing: In lieu of providing a project specific engineered design, the roof rafter framing supporting the added PV system shall meet the conventional framing standards of CRC R802.4.1 and Tables R802.4.1(1) through (8).

Module Attachment: Module attachments shall be in accordance with the manufacturer's specifications.

Fire Department Requirements

Fire Classification: Rooftop-mounted photovoltaic (PV) panel systems installed on or above the roof covering shall be tested, listed and identified with a fire classification in accordance with UL 2703. Class A, B or C photovoltaic panel systems and modules shall be installed in jurisdictions designated by law as requiring their use. [CRC R902.4]

Building Integrated Photovoltaic Systems: Products installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with CRC R902.3 and installed in accordance with CRC R905. BIPV roofing systems shall comply with Section R905.15. BIPV roof panels shall comply with Section R905.16.

Clear Access Paths: Not less than two minimum 36-inch wide pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. At least one pathway shall be provided on the street or driveway side of the roof. [CRC R329.6.1]

- For photovoltaic arrays occupying not more than 33 percent of the plan view total roof area, not less than an 18-inch clear set back is required on both sides of a horizontal ridge. [CRC R329.6.2]
- For photovoltaic arrays occupying more than 33 percent of the plan view total roof area, not less than a 36-inch clear set back is required on both sides of a horizontal ridge. [CRC R329.6.2]

Emergency Escape and Rescue Options: Panels and modules installed on dwellings shall not be placed on a portion of a roof that is below an emergency escape and rescue opening. A 36-inch wide pathway shall be provided to the emergency escape and rescue opening. [CRC R329.6.3]

Additional:

I certify that I have read and acknowledged all of the Code Requirements noted above. I accept full responsibility for complying with all of the above requirements, as applicable to my project. I further agree that if I fail to comply with the code requirements, due to error or omission, I will correct all deficiencies prior to final inspection.

Name	Signature	Date
Select One:	Contractor	Owner
		Owner's Agent