



HOW TO OBTAIN A PERMIT FOR INSTALLATION OF
Solar Photovoltaic Systems

City of San Diego
Development Services Department

INFORMATION
BULLETIN

301

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This information bulletin explains the submittal and permitting process and the associated fees for the installation of Solar Photovoltaic (PV) Systems.

I. APPROVAL REQUIREMENTS

- A.** An Electrical Permit is required for the installation of PV systems and photovoltaic shingle systems.
- B.** A Combination Building Permit is required if the scope of work includes structural modifications to existing single-family/duplex/townhouse residential structures to support the PV system or photovoltaic shingles. In this case, a separate Electrical Permit is not required.
- C.** A Building Permit is required for the installation of PV system on existing non-residential or multi-family residential buildings/structures if the scope of work includes modifications to structures to support the PV system or photovoltaic shingles or when scope of work includes new accessory structures such as carports, canopies or shade structures.
- D.** A Building Permit or Combination Building Permit is required for ground-mounted PV system where the support structure is greater than 5 feet above ground.

II. SUBMITTAL REQUIREMENTS

The following plans and documents shall be provided along with the appropriate fees.

A. Application Package

- 1. General Application (DS-3032).
- 2. Hazardous Materials Reporting Form (DS-165) when a Building Permit is required .
- 3. San Diego Regional Hazardous Materials Questionnaire (HM-9171) when a Building Permit is required.
- 4. Storm Water Requirements Applicability Checklist (DS-560) when a Building Permit is required.

B. Electrical Plans

1. Professional Certification

See Information Bulletin 303, Professional Certification Process Solar Photovoltaic Plans, for the procedure to be professionally certified for the submittal of single-family/duplex/townhouse residential PV installations. Once Professional Certification is obtained, then plans shall be submitted per the plan template below.

2. Plan Template for Single-Family/Duplex/Townhouse Residential

The template shall be used only for a residential PV project located on a sloped roof when the PV system weigh six pounds per square foot or less. There is a reduced turnaround time for residential projects using the Residential PV plan template. (see Section III below). Provide the following items when submitting per the Residential PV plan template.

- a. Two copies of the plans. The plan template sheets must be modified to reflect the actual project-specific details.
- b. One copy of the manufacturer's specifications for the proposed PV modules, racking,

inverter(s) and meter.

3. All Other PV Installations

Provide two sets when only an electrical permit is required, four sets if a Building Permit is required.

- a. **Site Plan.** The site plan for ground-mounted PV systems must show all information in Information Bulletin 122, How to Prepare a Site Plan and Vicinity Map. In addition, the site plan must show the location of all existing and proposed PV panels, AC or DC combiners, all disconnects, inverters, and sub-panels connected to the PV system and the meter panel.
- b. **Roof Plan.** The roof plan must show the roof slope and location of the existing and proposed PV panels on the roof in relation to any ridge, hip or valley, as well as the location and size of any existing roof-mounted equipment. Include the weight of the PV system in pounds per square feet and the connection details on the plans. Also, plans must show compliance with all requirements for access pathways and ridge clearance or per FPB Policy P-16-12, Photovoltaic Roof Access and Pathways for Alternate Ventilation.
- c. **Single-Line Diagram.** The single-line diagram must show the number of PV panels (including manufacturer model number) with voltage and kilowatt output, disconnects, combiners, inverters (include manufacturer model number) with input ratings, ampere rating of sub-panels connected to the PV system, ampere rating of meter panel bussing, ampere rating of main service disconnect, ampere rating of PV circuit breaker, size and type of all raceways and the size and type of all conductors.
- d. **Manufacturer's Specifications.** Provide one copy of the manufacturer's specifications for the proposed PV modules, racking, inverter(s), batteries, and meter. Specifications for PV panels and racking systems must include the UL listings indicating that a Class A fire rating for the proposed system is provided, except for ground-mounted PV systems with no use underneath the panels.
- e. **Design Professional Stamp and Signature.** All plans must be stamped and signed in accordance with the California Business and Professions Code by the registered design professional.
 - i. PV plans may be stamped and signed by a California registered Civil or Electrical Engineer or a licensed Electrical Contractor (C-10 License), General Contractor (B License) or a Solar Contractor (C-46 License) who is responsible for the design and installation of the system.
 - ii. A California registered Electrical Engineer or a C-10 must sign and stamp plans when an electrical panel upgrade is proposed.
 - iii. A California registered Architect, Civil or Structural Engineer must stamp and sign structural calculations and plans.
- f. **Photovoltaic Shingles** Where photovoltaic shingles are provided, the following requirements must be shown on plans:
 - i. Shingles must be applied to a solid or closely fitted deck, except where the shingles are designed to be applied over spaced sheathing.
 - ii. Shingles shall not be installed on roof slopes less than 3:12 slope (25%).
 - iii. Underlayment in accordance with California Residential Code (CRC) R905.16.4 or California Building Code (CBC) Section 1507.17.4, as applicable.
 - iv. Shingles shall be listed and labeled in accordance with UL 1703.
 - v. Shingles must be tested in accordance with ASTM D3161 for wind resistance per CRC 905.16.7 or CBC 1507.17.8, as applicable.
 - vii. For shingles on commercial or multi-dwelling units (MDUs) buildings, provide fasteners in accordance with CBC 1507.17.5.

C. Structural Plans and Calculations**1. Structural Review Required**

Structural review is required for the installation of PV systems where any of the following conditions occur:

- a. Alterations to a structure as required for support and/or attachment for PV systems.
- b. Weight of PV system exceeds six pounds per square foot.
- c. Weight of any ground-mounted or roof-mounted equipment exceeds 400 pounds.
- d. PV mounting height, at any point, is greater than 24 inches above the roof level
- e. PV system installed on a ballasted roof.
- g. Ground-mounted PV system located more than five feet above the ground.
- h. Batteries not installed in accordance with the manufacturer's instructions.

2. Structural Plans

Provide four sets of plans as follows when structural review is required above.

- a. Structural plans that demonstrate the required load path to the ground.
- b. A framing plan with the following information:
 - i. Size and location of all roof framing members and vertical support elements.
 - ii. PV support structure framing plan with size and location of all framing members.
 - iii. Location, size and weight of any existing or new roof-mounted equipment.
 - iv. Maximum weight, number and location of PV panels.
 - v. Size, weight and number of ballasts at each location.
 - vi. Attachment of panels to the support structure and the support structure to the roof or to the ground.
- c. Manufacturer's installation specifications for pre-manufactured racking systems.
- d. Cross-section showing the height of the proposed PV panels above the roof or ground, the supporting structure, slope, and the distance down the slope from any roof ridge.

3. Structural Calculations

Structural calculations must be provided to evaluate the existing roof framing system for roof dead load, PV dead load (panels, ballasts, support platform, etc.) and roof design live load. For roof areas covered by the PV panels, where the clear space between the PV panels and the rooftop is 24 inches or less, roof design live load may be ignored. The adequacy of the following must be evaluated by a California licensed civil/structural engineer or architect:

- a. Existing gravity load-carrying structural elements (joists, beams, girders, trusses, columns, foundation) where installation of the PV system causes an increase in design gravity load of more than 5 percent and,
- b. Existing lateral load-carrying structural elements (horizontal diaphragms, shear walls, braced/moment frames) where installation of PV system causes an increase in the design lateral load of more than 10 percent.

D. Zoning Review

Zoning review is required for the installation of PV systems that require a Building Permit or Combination Permit. In addition, zoning review will be required for PV systems on flat roofs or when any portion of the PV panels is located above the highest roof peak. Zoning, structure height, brush management, FAA notification and conditions of prior development permits are enforced for the installation of PV systems.

E. Historical Review

Historic review is required for installation of PV systems that also require a Building Permit or combination permit if the project involves any parcel with a designated historical resource or is located within the boundaries of an adopted historic district, historical review is required. Please

refer to Information Bulletin 581, "Designated Historical Resource Review" for additional Historic Review information.

IX. OPTIONS FOR SERVICE

A. Single-Family/Duplex/Townhouse Residential Roof-Mounted PV Systems

Single-family roof-mounted solar PV projects prepared in accordance with the City's Residential PV Plan Template, Professional Certification projects and photovoltaic shingles for single-family, duplex or townhouse roofs are processed for permitting at the Development Services Center on the fourth floor as follows:

1. Walk-In

Applicant may drop off completed applications and plans with a cover sheet that identifies each project by address.

2. Professional Certification

Professional Certification projects may be submitted electronically as described in the following section or at the Development Services Center by appointment. To schedule an appointment, call 619-446-5300. Up to two (2) professional certification submittals may be issued during the appointment. Refer to Information Bulletin 303 for additional information.

3. Electronic Submittal

Roof-mounted PV systems that do not require a Combination Permit may be submitted electronically. Customers should submit all of the documents listed in Item II above. For instructions on how to submit plans electronically, please see Appendix-Electric Submittal for the Permitting of Single Family Roof-Mounted PV Systems, referenced in the documents section.

B. All Other PV Systems

Plans for PV systems and photovoltaic shingles on non-residential, multi-family buildings and all ground-mounted PV projects must be submitted for review on the third floor of the Development Services Center located at 1222 First Ave. Appointments to submit applications and plans are highly recommended and can be scheduled by calling 619-446-5300.

IV. FEES

The following fees are required to be paid prior to review unless otherwise indicated below. For your convenience, DSD offers [on-line payments](#) through OpenDSD. Payment may also be made in person by cash, check, ATM card, Visa or MasterCard. Checks shall be in the exact amount, drawn on US banks, and made payable to the "City Treasurer." Due to space constraints, we are unable to store submitted plans awaiting fee payment.

Please note that plan check fees and other administrative fees are non-refundable. See Refund Policy noted within Refund Application Form DS-721 for additional refund information.

The following fees are for Electrical Permits only. The fees listed below include upgrades to service panels up to 320 amps. Projects requiring structural, zoning, brush management/landscape or historic reviews may include charges for those reviews based upon a rate of \$224.48 per hour. Additional fees will be assessed when a Building or Combination Building Permit is required (see Information Bulletin 501 for fees).

A. Professional Certification

Records Fee	\$20
First System/Inverter Inspection	\$246.24

B. Single-Family/Duplex/Townhouse Per Residential PV Plan Template and Photovoltaic Shingles

- Records Fee.....\$20
- First System/Inverter Plan Check.....\$181.83
- First System/Inverter Inspection.....\$246.24

C. Non-Residential/Multi-Family Residential PV Systems and Photovoltaic Shingles

- Records Fee.....\$60
- First 100 kW Plan Check.....\$627.33
- Each Additional 100 kW Plan Check.....\$218.47
- First 100 kW Inspection.....\$422.29
- Each Additional 100 kW Inspection.....\$169.65

D. Express Plan Check

When available, a reduced review period can be accomplished by paying an Express Plan Check fee at 1.5 times the regular plan check fee plus a \$655.40 administrative fee.

V. INSPECTIONS

Required inspections may include: Electrical Underground, Electrical Rough, Electrical Final, Structural-Foundation, Structural-Rough and Structural-Final.

After receiving final inspection approval for all related City of San Diego Approvals (permits), San Diego Gas and Electric (SDG&E) will be notified. The system is not approved to energize until SDG&E approval is obtained.

Documents referenced in this Information Bulletin

- San Diego Municipal Code, ([SDMC](#))
- [Information Bulletin 118](#), How to Process Construction Changes to Approved Plans
- [Information Bulletin 122](#), How to Prepare a Site Plan and Vicinity Map
- [Information Bulletin 303](#), Professional Certification Process Solar Photovoltaic Plan Review
- [Information Bulletin 501](#), Fee Schedule Construction Permits - Structures
- [Information Bulletin 581](#), Designated Historical Resource Review
- Hazardous Materials Reporting, [DS-165](#)
- Storm Water Requirements Applicability Checklist, [DS-560](#)
- General Application, [DS-3032](#)
- San Diego Regional Hazardous Materials Questionnaire, [HM-9171](#)
- [FPB Policy P-16-12](#), Photovoltaic Roof Access and Pathways for Alternative Ventilation
- [Residential Photovoltaic \(PV\) Plan Template](#)
- [Appendix](#) - Electronic Submittal for the Permitting of Single Family Roof-Mounted PV Systems