



Community Development Department

Solar Photovoltaic Installation Guidelines

Submittal Requirements – Solar Photovoltaic Installations

The information below provides information regarding the permitting process for solar photovoltaic (PV) projects under 10 KW in size. This handout provides information about submittal requirements for plan review, required fees, and inspections in according to the requirements of the latest adopted California Building Code and California Residential Codes.

1. Approval Requirements

The following permits and approvals are required to install a solar PV system:

- a) Building Permit for Photovoltaic
- b) Planning review is required for all solar PV installations.
- c) Fire Department approval is not required for solar PV installations of this size in residential areas.

2. Submittal Requirements

- a) Completed permit application form. This permit application form can be downloaded at <http://www.sealbeachca.gov/Departments/Community-Development/Building-Safety/Forms-Requirements>
- b) An Electrical Plan must be provided for the proposed solar installation.
- c) Provide three (3) complete sets of plans for permit review and approval.
- d) An Electrical Plan prepared by an electrical contractor or electrical engineer shall be submitted that includes the following:
 - Locations of main service or utility disconnect
 - Total number of modules, number of modules per string, and the total number of strings
 - Make and model of inverter(s) and/or combiner box if used
 - One-line diagram of system
 - Specify grounding/bonding, conductor type and size, conduit type and size, and number of conductors in each section of conduit
 - If batteries are to be installed, include them in the diagram and show their locations and venting
 - Equipment cut sheets including inverters, modules, AC and DC disconnects, combiners, and wind generators
 - Labeling of equipment as required by CEC, Sections 690 and 705
 - Site diagram showing the arrangement of panels on the roof or ground, north arrow, lot dimensions, and EXISTED SHADING ELEMENTS the distance from property lines to adjacent buildings/structures (existing and proposed).
- e) Demonstrate compliance with structural requirements if needed.
- f) Structural support information for roof-mounted systems should include the following:
 - The type of roof covering and the number of roof coverings installed
 - Type of roof framing, size of members, and spacing
 - Weight of panels, support locations, and method of attachment
 - Framing plan and details for any work necessary to strengthen the existing roof structure
 - Any relevant calculations (if required)
 - Where an approved racking system is used, provide documentation showing manufacturer of the rack system, maximum allowable weight the system can support, attachment method to the roof or ground, and product evaluation information or structural design for the rack system

3. Plan Review

Permit applications can be submitted to the Building & Safety Division, in person at 211 8th Street (2nd Floor), Seal Beach, CA 90740.

The Seal Beach Municipal Code (SBMC §11.4.10.045) requires solar collectors to be placed in the location least visible from public streets or screened from public view. In compliance with Section 714 of the California Civil Code, panels visible from public view do not have to be relocated if doing so will result in a loss of system efficiency by 10% or more. A production analysis must be provided to show the system efficiency in the proposed, visible, location and the system efficiency in an alternate, less visible, location to show the 10% efficiency loss.

4. Fees

Plan Check and Permit Fees: No fee for residential photovoltaic installations.

Inspection Fee: \$51

Additional electrical permit fees may be required if a new electrical panel is installed.

5. Inspections

Once all permits to construct the solar installation have been issued and the system has been installed, it must be inspected before final approval is granted for the solar system. On-site inspections can be scheduled by contacting the Building Division by telephone at 562-431-2527 ext. 1519.

Permit applicant/contractor must be prepared to show conformance with all technical requirements in the field at the time of inspection. The inspector will verify that the installation is in conformance with applicable code requirements and with the approved plans.

Below are common points of inspection with which the applicant/contractor should be prepared to show compliance:

- Number of PV modules and model number matches plans, and specification sheets number matches plans and specification sheets
- Array conductors and components are installed in a neat and workman-like manner.
- PV array is properly grounded
- Electrical boxes are accessible and connections are suitable for environment
- Array is fastened and sealed according to attachment detail
- Conductors ratings and sizes match plans
- Appropriate signs are property constructed, installed, and displayed, including:
 - Sign identifying PV power source system attributes at DC disconnect
 - Sign identifying AC point of connection
 - Sign identifying switch for alternative power system
- Equipment ratings are consistent with application and installed signs on the installation, including:
 - Inverter has a rating as high as max voltage on PV power source sign
 - DC-side overcurrent circuit protection devices (OCPDs) are DC rated at least as high as max voltage on sign
 - Switches and OCPDs are installed according to the manufacturer's specifications (i.e. many 600VDC switches require passing through the switch poles twice in a specific way)
 - Inverter is rated for the site AC voltage supplied and shown on the AC point of connection sign
 - OCPD connected to the AC output of the inverter is rated at least 125% of maximum current on sign, and is no larger than the maximum OCPD on the inverter listing label
 - Sum of the main OCPD and the inverter OCPD is rated for not more than 120% of the bus bar rating

6. Departmental Contact Information

For additional information regarding the Solar PV permit process, contact the Building Division at 562-431-2527 ext. 1323 for permit process questions. For inspection questions, call 562-431-2527 ext. 1315.