CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Construction Services Division
Municipal Services Building - Concourse Level
1401 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19102

**EZ PERMIT STANDARDS**
**SOLAR PV SYSTEM**

For installations made on One- or Two-Family Dwellings. This document shall be submitted with the Electrical Permit application.
Revised 9/25

## EZ Permit Standards: Solar Photovoltaic (PV) System Installations

**If the proposed Solar PV System fully meets the standards below, the project requires an Electrical Permit only and does not require the submission of plans. All other projects will require a Building Permit and an Electrical Permit with the submission of plans.**

The Licensed Electrical Contractor must meet the following installation conditions, limitations, and requirements regarding the installation of the Solar PV System for the Department to allow the full installation to proceed under the electrical permit. Note: The Electrical Contractor must accept responsibility for the structural installation of the roof-top equipment.

### Conditions

- Installation must fully comply with the requirements of the Philadelphia Residential Building Code, 2017 National Electrical Code (NEC), and the Philadelphia Fire Code (PFC) for installations on single family dwellings up to three (3) stories in height. All other installations must comply with the Philadelphia Building Code and the 2017 NEC.

- Systems are limited to a maximum of 10 kW or less in size.

- Installation must be on the roof of a one- or two- family dwelling.

- The following are not eligible for use of this standard:

  o Installation on roof systems comprised of engineered trusses. **Exception**: the applicant shall provide a letter from a professional engineer stating that the roof framing has been inspected; the proposed solar PV system has been evaluated; connections will not adversely impact the structural integrity of the framing system; and the roof framing system can withstand the additional loads applied by the solar PV system.

  o Installation on a sloped roof greater than 2:12 (17% slope)

  o Property is designated historical by the Philadelphia Historical Commission.

### Installation Limitations and Requirements

- Installation shall be in accordance with manufacturer's instructions.

- The Contractor, **by signing this form below**, confirms that the existing roof structure will effectively accept the PV Module (Panel) mounting hardware, safely support the combined weight of the PV Modules and future snow loads, and safely withstand wind uplift loads.

- Equipment shall impose no more than a 45 pounds per square foot (psf) point load in any location.

- Equipment shall weigh less than 5 psf.

- The height of the system shall be less than 18 inches above the adjacent roof.

- Installation shall include a pre-engineered ballasted or mounting structure with attachments both designed for a wind load of 115 miles per hour (mph).

- Roof mounts with integrated flashing shall be used for mounting the PV Modules to the roof structural members of non-metal sloped roofs. Penetrating roof mounts (with EPDM rubber gasket seals), or non-penetrating clamps shall be used on all sloped metal roofs.

- Building integrated panels installed as roof covering and rooftop- mounted panels and modules installed on or above the roof covering shall be tested, listed and labeled with the required fire classification set forth under Section 902.4 of the 2015 IRC. Minimum rating shall be Class B with the following exception:

  o Type IIB, IIIB, and VB construction shall be permitted a minimum rating of Class C.

- Ballasted systems can be utilized for mounting PV Modules to flat roofs.

- A three (3) foot clearance (minimum of one side) must be provided on roof for equipment maintenance.

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## Electrical Limitations and Requirements

- The Contractor, **by signing this form below**, confirms that the existing electrical system can adequately accommodate the additional loads.
- PV panels and modules shall be listed and labeled in accordance with UL 1703.
- Load Side Connections shall meet the following conditions:
  - o Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverter listed for utility interaction. Inverter output shall not exceed 3.8 kw AC for a 100-amp service and 7.6 kw AC for a 200-amp service.
- Line Side Connections shall meet the following conditions:
  - o Minimum 60amp Rated PV Services Conductors (2017 NEC 230.42(B))
  - o Minimum #8cu Ground Conductor (2017 NEC 250.102(c)(1))
  - o Minimum 60 amp Service Rated Disconnect (2017 NEC 230.79(D))
  - o Minimum 100 amp Service Rated Disconnect for Single Family Dwellings (2017 NEC 230.79(C))
- All PV System components shall be properly grounded and bonded.
- A PECO required AC disconnect switch shall be located on the exterior of the building.
- PV Systems installed on or in a building shall include a rapid shutdown function to reduce shock hazard for emergency responders in accordance with NEC 690.12.
- Individual components of the Solar PV System shall be designed and installed in accordance with the applicable Article of NEC 690 - 705.
  - ▪ Article 690
    - • Part I – General
    - • Part II – Circuit Requirements
    - • Part III – Disconnecting Means
    - • Part IV – Wiring Method
    - • Part V – Grounding and Bonding
    - • Part VI – Marking
    - • Part VII – Connection to Other Sources
  - ▪ Article 705
    - • Part 1 - General
    - • Part II – Interactive Inverters
    - • Part IV – Microgrid System

## Prior Approvals

The Contractor must submit proof of submission of the PECO Interconnection Application through the form of a screenshot of the application dashboard.

The screenshot must clearly show the following information:

- Project's Location,
- Installation Type,
- System Capacity, and
- Current Application Status.
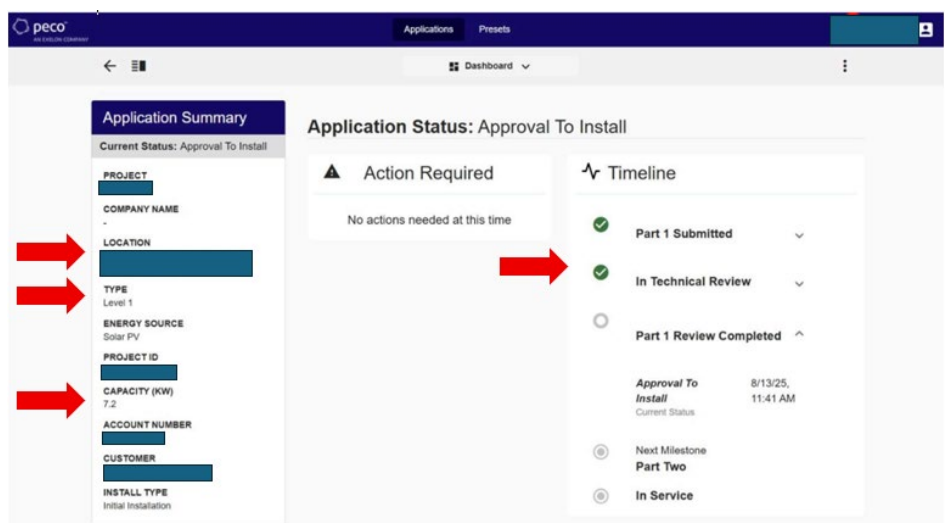


Licensed Electrician's Name_____

AP#_____

Licensed Electrician's Signature_____