



CITY OF
FAYETTEVILLE
ARKANSAS

Solar PV System Inspection Guidelines

The purpose of inspections by Building Safety staff is to ensure compliance with the National Electrical Code (NEC), other applicable codes and regulations, and the approved plans. The intent of the regulations is the practical safeguarding of persons and property from hazards arising from installation of solar systems.

It is the contractor or owner's responsibility to schedule and coordinate all required inspections and obtain approvals before concealing any work. The permit holder shall be available at the jobsite and provide proper access for the inspector.

Most projects can be inspected during a single visit by Building Safety Staff. Ground mounted or complex rooftop systems may require additional inspections.

A. Ground-Mounted Systems

1. Footing inspection
2. Underground electrical (raceway and conduits)
3. Final inspection of the complete system including modules, panel, wire terminations, grounding, etc.

B. Roof-Mounted Systems

1. Rough electrical for concealed wiring
2. Array bonding and grounding
3. Final inspection of the complete system including modules, panel, wire terminations, grounding, etc.

Inspection Checklist:

A. General

- Approved plans, inspection record card and manufacturers' installation instructions shall be made available on site.
- Installation of equipment shall be per the approved plans. If the installation differs from the approved plans, a construction change may be required.
- Work shall be ready for the inspection requested.
- A ladder complying with shall be made available and secured in place for the inspection.
- All required working clearances for electrical equipment must be provided and maintained.
- All required labels must be properly fixed in place.

B. Service Equipment

- The service equipment and its verifiable bus rating shall be adequate and properly sized for the designed PV source.
- The service grounding and bonding connections shall be located and verified.

- All grounding requirements shall be verified on the PV installations involving detached structures.
- New circuit breakers shall be listed to be used with the existing electrical equipment.
- When existing circuits are relocated to accommodate the PV breaker, a new panel schedule is required, and the loads shall remain balanced.
- Rapid shutdown device(s) located at a readily accessible location.

C. PV Array Installed on Roofs

- All roof-mounted PV arrays and racking systems require inspection of the wiring, attachments, and grounding. Inspectors must be provided a safe access path for this inspection.
- The racking system and the modules must be installed in compliance with the manufacturer installation instructions.
- The installed racking system and PV modules shall be the same as those identified on the approved plans.
- The racking system must be positively attached to the structure and the weather protection of the roof membrane shall be maintained.
- Roof-mounted arrays may not compromise or obstruct roof vents, plumbing vents, or chimneys.
- Class A fire rating shall be provided.

D. Combiner Boxes, Junction Boxes, and Wiring Methods

- Source wiring conductors shall be of the approved type and properly sized.
- Metallic raceways containing DC source circuits over 250 volts shall be properly bonded through concentric knock-outs at boxes or enclosures (where applicable).
- Combiner boxes, disconnects and fusing used in DC source wiring shall be DC rated.
- Intermediate enclosures, boxes, and conduit body covers must be accessible for servicing and shall be properly grounded.

E. PV Inverters & DC Disconnects

- The placard or label with the actual power source operating voltages and currents shall be affixed to or located immediately adjacent to either the inverter or the DC disconnect.
- The installed inverters shall be the same as those identified on the approved plans.
- A properly sized system grounding electrode conductor shall be installed to the appropriate grounding terminal.
- Metallic raceways and enclosures, enclosing system grounding electrode conductors, shall be bonded at each end of the raceways and at each enclosure.

F. AC Overcurrent Protection and Required Utility Disconnects

- When a lockable AC disconnect is required by the utility, it shall be located at the service equipment unless the utility approves a remote location.
- When the utility disconnect is required, it shall be identified on the placard as "PV System Disconnect for Utility Operation."
- All back-fed circuit breakers and disconnects shall be properly labeled.