

# Residential Roof-Mounted Solar Panel Array

The City of Kettering supports renewable energy opportunities for residents and businesses.

The Residential Code of Ohio and the City of Kettering Zoning Code requires structural, electrical and zoning plan approval for solar arrays. The City of Kettering will coordinate these reviews in the quickest and most effective manner possible.

- A structural permit application is required and can be applied for online 24/7 at [www.ketteringoh.org/access](http://www.ketteringoh.org/access).
- A single fee of \$45 is required.

To facilitate a quick permit turnaround for solar arrays, we ask you to please provide the following information with the application:

- Correct address on the plans.
- Sealed letter from design professional stating roof framing is adequate for additional solar array loads.
- A panel layout drawing showing distance from panel edges to roof ridge and roof edges.
- A complete set of manufacturer's installation specifications including roof mounting assembly, electric provisions and requirements of NFPA 70 and the Fire Code.
- Indicate on plans that the panels will not extend more than 8" above the roof surface.

**For questions on these requirements, ground-mounted solar arrays and for commercial applications, please call our office directly at 937-296-2441.**



## Specific Residential Roof-Mounted Solar Array Standards

### Zoning Code Standards: Sec 1139.03.B – Solar Energy Conversion

1. Accessory Solar Energy Conversion devices shall be designed and located in order to prevent reflective glare toward any occupied structure on adjacent properties as well as any adjacent right-of-way.
2. All exterior electrical and/or plumbing lines must be buried below the surface of the ground when practical. Where such lines are exposed, all plumbing and/or electrical lines must be painted, coated and/or treated to match the color of the roofing material and walls to which they are attached.
3. All Accessory Solar Energy Conversion devices shall be attached to a building roof.
4. No such device shall be mounted to a mansard roof.
5. When placed on a pitched roof structure, Accessory Solar Energy Conversion devices shall not extend more than 8" from the roof of the building. When placed on a flat roof structure, Accessory Solar Energy Conversion devices shall be screened from adjacent residentially used properties and the right-of-way.
6. Only commercially produced Accessory Solar Energy Conversion devices are permitted. The manufacturer specifications shall be submitted as part of the application for approval.

### Residential Code of Ohio Conditions

1. Inspections will be made based on approved drawings which shall be available at the job site at all times for review by code officials.
2. Solar Energy Systems shall comply with RCO Sec 324, NFPA 70, the fire code and manufacturer's installation instructions.
3. Per Sec 324.3 and Sec 902.4, panels and modules shall be listed and labeled in accordance with UL 1703 and UL 2703.
4. Submit all manufacturer's installation and mounting specifications with application.
5. Panel system shall have the same fire classification as the roof assembly, Sec 324.4.2.
6. Fastening per manufacturer's installation requirements or engineered design.
7. Provide flashing at all attachments per roofing material manufacturer's specifications.
8. Roof loading per Sec 324.4.1.1:
  - Portions of roof structure carrying photovoltaic panels shall be designed for roof dead load including panel weight, plus 20 psf snow load.
  - Wind load design shall resist component and cladding loads per Table 301.2(2) and Table 301.2(3).
9. Roof access, pathways and setback, Sec 324:
  - Access and pathways need not be provided where rooftop operations will not be employed.
  - Where rooftop operations exist, provide no fewer than two 36" wide pathways on separate roof planes from roof edge to roof ridge, including roof supporting the array.
  - Provide a minimum of one pathway on street or driveway side of roof.
  - If array covers < 33% of roof, provide minimum 18" clear setback on both sides of horizontal ridge. If array covers > 33% of roof, provide minimum 36" clear setback on both sides of horizontal ridge.
  - Arrays shall not be placed on portions of roof that are below an egress opening and a minimum 36" pathway shall be provided to egress opening.
10. Engineering is required for truss-framed roofs and structural ridge beams when total roof dead load exceeds 20 pounds per square foot. Engineered trusses shall not be drilled, notched or otherwise altered in any way.
11. Roof ventilation required per Sec 806.
12. Electrical work shall comply with the National Electric Code (N.E.C.).

