



MIKE CAUSEY, INSURANCE COMMISSIONER & STATE FIRE MARSHAL
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**Statewide Uniform Requirement of Inspection Procedures
for Solar Photovoltaic Systems Installed on Residential Rooftops
Option No. 1**

1. Application for Electrical and Building Permit must include:

- a. Sketch of the electrical design that complies with the NEC
- b. Sketch of the equipment's structural mounting design. A North Carolina registered design professional will be required to seal the structural design at the time of application if any of the following exist and are attested to by the applicant:
 - i. The weight of the PV system exceeds three (3) pounds per square foot (psf),
 - ii. The roof possesses more than one (1) layer of asphalt shingles,
 - iii. The roofing material consists of a type other than asphalt shingles or metal, or
 - iv. The roof is located in a 140 mph or greater wind zone

2. Electrical Rough-in Inspection at the Project's Location includes:

- a. PV equipment must be present on-site with the manufacturer's instructions
- b. Listing and labeling of all parts to be assembled on the roof
- c. Detailed instructions for the rapid shutdown of the system at the roof
- d. Inverter location
- e. Type and size of conductors to be used
- f. Details for how the metal frame(s) and the PV electrical system is to be grounded

3. Electrical Final Inspection Requirements:

- a. All equipment exceeding 8 feet above grade must be clearly photographed or recorded to show the following: (Hard copy provided to field inspector at final inspection, to be kept on file)
 - i. All connections (splices, terminations, joints, etc.)
 - ii. The measurement of any items that have a distance value within the NEC
 - iii. Mounting hardware
 - iv. The equipment in the photographs are actually located at the property where the work is being inspected (neighboring or landmark items in some of the images should be noted)
- b. All electrical equipment not exceeding 8 feet from grade shall be inspected in the usual manner

4. Building Final Inspection Requirements:

- a. A field inspection of the installation has been performed by a North Carolina registered design professional or a person under the direct supervisory control of the registered design professional. This field inspection must be definitively acknowledged in the required document below.
- b. Present a signed written document from a North Carolina registered design professional with a valid seal stating all of the following:
 - i. The PV equipment's structural installation has been designed and inspected,
 - ii. The equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind), and
 - iii. The installation is in compliance with the North Carolina Residential Code

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**Statewide Uniform Requirement of Inspection Procedures
for Solar Photovoltaic Systems Installed on Residential Rooftops
Option No. 2**

1. Application for Electrical and Building Permit must include:

- a. Sketch of the electrical design that complies with the NEC
- b. Electrical details of the equipment including:
 - i. Manufacturer's instructions
 - ii. Documentation that the equipment is listed by a qualified evaluation laboratory
 - iii. Instructions for the rapid shutdown of the system at the roof
 - iv. Inverter location
 - v. Type and size of conductors to be used
 - vi. How the metal frame(s) and the PV electrical system is to be grounded
- c. Sketch of the equipment's structural mounting design. A North Carolina registered design professional will be required to seal the structural design at the time of application if any of the following exist and are attested to by the applicant:
 - i. The weight of the PV system exceeds three (3) pounds per square foot (psf),
 - ii. The roof possesses more than one (1) layer of asphalt shingles,
 - iii. The roofing material consists of a type other than asphalt shingles or metal, or
 - iv. The roof is located in a 140 mph or greater wind zone

2. Electrical Final Inspection Requirements:

- a. All equipment exceeding 8 feet above grade must be clearly photographed or recorded to show the following: (Hard copy provided to field inspector at final inspection, to be kept on file)
 - i. Verification of all details described in Part 1.b. of the electrical permit application procedure (this includes photos of the listing laboratory's marking(s) on the equipment)
 - ii. All connections (splices, terminations, joints, etc.)
 - iii. The measurement of any items that have a distance value within the NEC
 - iv. Mounting hardware
 - v. The equipment in the photographs are actually located at the property where the work is being inspected (neighboring or landmark items in some of the images should be noted)
- b. All electrical equipment not exceeding 8 feet from grade shall be inspected in the usual manner

3. Building Final Inspection Requirements:

- a. A field inspection of the installation has been performed by a North Carolina registered design professional or a person under the direct supervisory control of the registered design professional. This field inspection must be definitively acknowledged in the required document below.
- b. Present a signed written document from a North Carolina registered design professional with a valid seal stating all of the following:
 - i. The PV equipment's structural installation has been designed and inspected,
 - ii. The equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind), and
 - iii. The installation is in compliance with the North Carolina Residential Code