

MARKING

PV systems must be marked. Marking is needed to provide emergency responders with appropriate warning and guidance with respect to working around and isolating the solar electric system. This can facilitate identifying energized electrical lines that connect the solar modules to the inverter, as these should not be cut when venting for smoke removal. Materials used for marking must be weather resistant. It is recommended that Underwriters Laboratories Marking and Labeling System 969 (UL 969) be used as standard to determine weather rating. (UL listing of markings is not required).

Main Service Disconnect

For residential applications, the marking may be placed within the main service disconnect. If the main service disconnect is operable with the service panel closed, the marking should be placed on the outside cover.

For commercial application, the marking should be placed adjacent to the main service disconnect in a location clearly visible from the location where the lever is operated.

Marking Content and Format

MARKING CONTENT: CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED
RED BACKGROUND
WHITE LETTERING
MINIMUM 3/8" LETTER HEIGHT
ALL CAPITAL LETTERS
ARIAL OR SIMILAR FONT, NON-BOLD
REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (durable adhesive materials may meet this requirement)

CAUTION : SOLAR ELECTRIC SYSTEM

Marking for Direct Current Conduit, Raceways, Enclosures, Cable Assemblies, and Junction Boxes

Marking is required on all interior and exterior DC conduit, raceways, enclosures, cable assemblies, and junction boxes to alert the Fire Service to avoid cutting them. Marking should be placed on all interior and exterior DC conduit, raceways, enclosures, and cable assemblies, every 10 feet, at turns and above and/or below penetrations and all DC combiner and junction boxes.

Marking Content and Format

MARKING CONTENT: CAUTION SOLAR CIRCUIT
RED BACKGROUND
WHITE LETTERING
MINIMUM 3/8" LETTER HEIGHT
ALL CAPITAL LETTERS
ARIAL OR SIMILAR FONT, NON-BOLD

REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (durable adhesive materials meet this requirement)

CAUTION: SOLAR CIRCUIT

Inverters

The inverter is a device used to convert DC electricity from the solar system to AC electricity for use in the building's electrical system or the grid.

No markings are required for the inverter.

Location of Direct Current (DC) Conductors

Conduit, wiring systems, and raceways for photovoltaic circuits should be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities.

Conduit runs between sub arrays and to DC combiner boxes should use design guidelines that minimize total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes are to be located such that conduit runs are minimized in the pathways between arrays.

To limit the hazard of cutting live conduit in venting operations, DC wiring should be run in metallic conduit or raceways when located within enclosed specs in a building and should be run, to the maximum extent possible, along the bottom of load-bearing members.