Explanatory Policy - Solar Photovoltaic and Battery Energy Storage Marking

Solar Photovoltaic and Battery Energy Storage Marking

Purpose:
The purpose of this policy is to provide the signage requirements for Energy Systems including Solar Photovoltaic {PV) and Battery Energy Storage Systems {BESS) regulated by Chapter 12 of the 2024 International Fire Code/Mesa Fire Code. This policy will provide guidance and specifications for the necessary signage, materials, verbiage and size requirements. The inspection and compliance of these energy systems is critical for the safety of firefighters and the residents of The City of Mesa. The signage requirements for Solar Photovoltaic and Battery Energy Storage Systems will assist in reducing the risks associated with these alternative energy systems.

Policy:
This policy establishes consistent expectations for the signage, materials, verbiage and size used for Solar Photovoltaic and Battery Energy Storage Systems installed in the City of Mesa. This signage shall meet the specifications established in this detail. This signage requirement must be installed prior to the final inspection and being approved {"green-tagged") or commissioning of the energy system. Rapid shut down signage shall comply with 2024 International Fire Code Section 1205.4.

1205.4 Buildings with rapid shutdown. Buildings with rapid shutdown solar photovoltaic system shall have permanent labels in accordance with Sections 1205.4.1 through 1205.4.3

1205.4.1 Rapid shutdown type. The type of solar photovoltaic system rapid shutdown shall be labeled with one of the following:

1. For solar photovoltaic systems that shut down the array and the conductors leaving the array, a label shall be provided. The first two lines of the the label shall be uppercase characters with a minimum height of 3/8 inch (10mm) in black on a yellow background. The remaining characters shall be uppercase with a minimum height of 3/16 inch (5mm) in black with a white background. The label shall be in accordance with figure 1205.4.1(1) and state the following:

SOLAR PV SYSTEM EQUIPPED WITH
RAPID SHUTDOWN. TURN RAPID
SHUTDOWN SWITCH TO THE “OFF”
POSITION TO SHUT DOWN PV SYSTEM
AND REDUCE SHOCK HAZARD IN ARRAY.

2. For photovoltaic systems that only shut down conductors leaving the array, a label shall be provided. The first two lines of the label shall be uppercase characters with a minimum height of 3/8 inch (10 mm) in white on a red background and the remaining characters shall be capitalized with a minimum height of 3/16 inch (5 mm) in black on a white background. The label shall be in accordance with Figure 1205.4.1(2) and state the following:

THIS SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN. TURN RAPID SHUTDOWN
SWITCH TO THE “OFF”
POSITION TO SHUT DOWN CONDUCTORS
OUTSIDE THE ARRAY. CONDUCTORS
WITHIN ARRAY REMAIN ENERGIZED IN SUNLIGHT.

Figure 1205.4.1(1) LABEL FOR SOLAR PV SYSTEMS THAT REDUCE SHOCK HAZARD WITH ARRAY AND SHUT DOWN CONDUCTORS LEAVING ARRAY

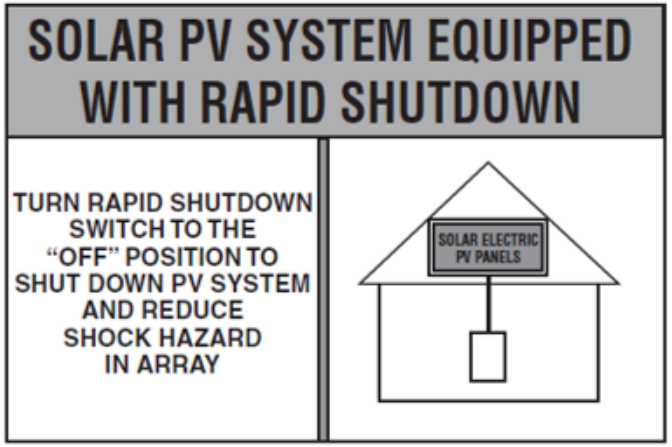
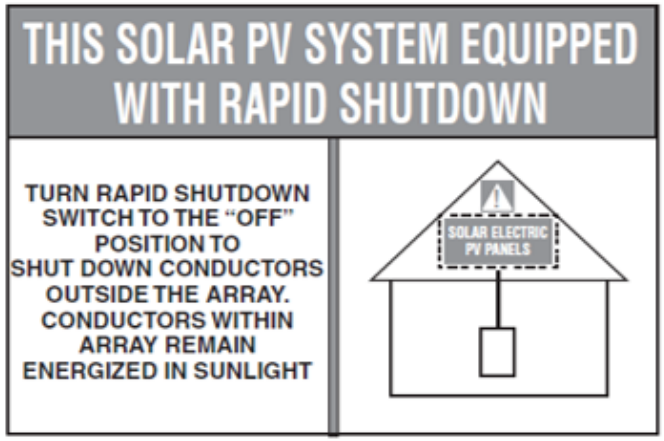


Figure 1205.4.1(2) LABEL FOR SOLAR PC SYSTEMS THAT ONLY SHUT DOWN CONDUCTORS LEAVING THE ARRAY



1204.1.3 Location of Marking. Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mm) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.

1205.4 Buildings with rapid shutdown. Buildings with rapid shutdown solar photovoltaic systems shall have permanent labels in accordance with Section 1205.4 through 1205.4.3

1207.1.3 Stationary storage battery systems. Stationary storage battery systems having capacities exceeding the values shown in Table 1206.2 shall comply with Section 1206.2.1 through 1206.2.13.6, as applicable. *Approved signage is required for all installations.

1207.4.8 Signage. *Approved* signs shall be provided on or adjacent to all entry doors for all ESS rooms or areas and on enclosures of ESS cabinet and walk-in units located outdoors on rooftops or in open parking garages. Signs designed to meet both the requirements of this section and NFPA 70 shall be permitted. The signage shall include the following or equivalent:

"ENERGY STORAGE SYSTEM," "BATTERY STORAGE SYSTEM," "CAPACITOR ENERGY STORAGE SYSTEM" or the equivalent. The Identification of the electrochemical ESS technology present. "ENERGIZED ELECTRICAL CIRCUITS." Where water-reactive electrochemical ESS are present, the signage shall include "APPLY NO WATER." Current contact information, including phone number, for personnel authorized to service the equipment and for fire mitigation personnel required by Section 1207.1.8.1.

See graphic on page 3 of 3

SOLAR-PHOTOVOLTAIC (PV) &
BATTERY ENERGY STORAGE SYSTEM (BESS) SIGN DETAIL

8 in × 3 in

WARNING:
BESS POWER SOURCE
LOCATED INSIDE GARAGE

0.735" (11 /16"") lettering
13/16" stroke

0.480" (1/2") lettering
13/16" stroke

5 in × 3 in

BESS
EMERGENCY
DISCONNECT

0.48" (1/2") lettering
13/16" stroke

8 in × 3 in

WARNING:
BESS POWER SOURCE
LOCATED ON EXTERIOR OF
HOUSE

0.558" (9/16) lettering
1" stroke

0.364" (3/8") lettering
1" stroke

5 in × 3 in

SOLAR
PHOTOVOLTAIC
RAPID SHUTDOWN
SWITCH

5 in × 3 in

SOLAR
PHOTOVOLTAIC
EMERGENCY
DISCONNECT

0.375" (3/8")
lettering
1" stroke

8 in × 3 in

WARNING:
SOLAR-PHOTOVOLTAIC
POWER SOURCE

0.701" (11/16") lettering
1" stroke

0.458" (1/2") lettering
1" stroke

8 in × 3 in

WARNING:
SOLAR GLASS ROOF TILE
DO NOT VENTILATE ROOF

0.735" (11/16") lettering
13/16" Stroke

0.480" (11/16") lettering
13/16" stroke

NOTES:

1. FONT STYLE USED IS **ARIEL CE BOLD** CAPITAL FONTS.
2. THE SIGN FACE SHALL HAVE A WHITE 3M DIAMOND GRADE REFLECTIVE SHEETING (DG³ 4090 SERIES OR EQUIVALENT) APPLIED AS BACKGROUND AND ADHESIVE.
3. LETTERING SHALL BE DONE THE FOLLOWING WAY:
   - 3M SCOTCHLITE ACRYLIC, TRANSPARENT, ELECTRONIC CUTTABLE FILM (RED 1172 SERIES) INVERSE CUT TO ALLOW WHITE REFLECTIVE BACKGROUND TO SHOW THROUGH.
4. ALL SIGN IMAGING SHALL BE IN COMPLIANCE WITH THE REFLECTIVE SHEETING MANUFACTURES MATCH COMPONENT SYSTEM.
5. REQUIRES PRE-APPROVAL BY A FIRE CODE OFFICIAL 480-644-2622 .

