DC Photovoltaic Output Circuits Inside a Building

Introduction

With NEC 2011, running DC wiring in the attics just got easier. Section 690.31(E) changed the requirements for running DC circuits inside of a building to enable the use of Metal-clad cable for DC PV source or output circuits. The Metal clad cable needs to comply with 250.118(10) but will enable installers an easier alternative to bending conduit in tight spaces.

NEC Requirements

NEC Article 690.31 Methods Permitted

(E) Direct-Current Photovoltaic Source and Output Circuits Inside a Building. Where dc photovoltaic source or output circuits from a building-integrated or other photovoltaic system are run inside a building or structure, they shall be contained in metal raceways, Type MC metal-clad cable that complies with 250.118(10), or metal enclosures from the point of penetration of the surface of the building or structure to the first readily accessible disconnecting means. The disconnecting means shall comply with 690.14(A), (B) and (D). The wiring methods shall comply with the additional installation requirements in (1) through (4)

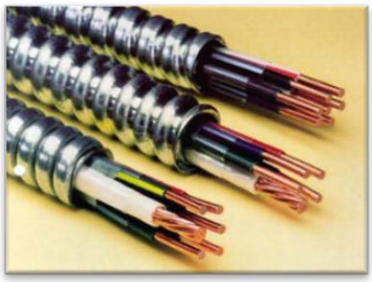
NEC Article 250.118 Types of Equipment Grounding Conductors

(10) Type MC cable that provides an effective ground-fault current path in accordance with one or more of the following:

a. It contains an insulated or uninsulated equipment grounding conductor in compliance with 250.118(1)

b. The combined metallic sheath and uninsulated equipment grounding/bonding conductor of inter- locked metal tape–type MC cable that is listed and identified as an equipment grounding conductor

c. The metallic sheath or the combined metallic sheath and equipment grounding conductors of the smooth or corrugated tube-type MC cable that is listed and identified as an equipment grounding conductor



PV system installers have often used a combination of Electrical Metallic Tubing (EMT) and Liquid Tite conduit to install DC runs in tight spaces. Metal Clad cable will reduce the amount of time and material costs for these more challenging DC wiring.