

CHANGE TYPE: Addition

CHANGE SUMMARY: Photovoltaic solar energy systems have been added to the mechanical provisions of the IRC to distinguish them from thermal solar energy systems.

2012 CODE:

M2301, M2302

Thermal and Photovoltaic Solar Energy Systems

SECTION M2301 **THERMAL SOLAR ENERGY SYSTEMS**

M2301.1 General. This section provides for the design, construction, installation, alteration and repair of equipment and systems using thermal solar energy to provide space heating or cooling, hot water heating and swimming pool heating.

SECTION M2302 **PHOTOVOLTAIC SOLAR ENERGY SYSTEMS**

M2302.1 General. This section provides for the design, construction, installation, alteration and repair of photovoltaic equipment and systems.

M2302.2 Requirements. The installation, inspection, maintenance, repair and replacement of photovoltaic systems and all system components shall comply with the manufacturer's instructions, Sections M2302.2.1 through M2302.2.3 and NFPA 70.

M2301, M2302 continues



International Code Council®

Photovoltaic solar energy system

M2301, M2302 continued

M2302.2.1 Roof-Mounted Panels and Modules. Where photovoltaic panels and modules are installed on roofs, the roof shall be constructed to support the loads imposed by such modules. Roof-mounted photovoltaic panels and modules that serve as a roof covering shall conform to the requirements for roof coverings in Chapter 9. Where mounted on or above the roof coverings, the photovoltaic panels and modules and supporting structure shall be constructed of noncombustible materials or fire-retardant-treated wood equivalent to that required for the roof construction.

M2302.2.2 Roof and Wall Penetrations. Roof and wall penetrations shall be flashed and sealed in accordance with Chapter 9 to prevent entry of water, rodents and insects.

M2302.2.3 Ground-Mounted Panels and Modules. Ground-mounted panels and modules shall be installed in accordance with the manufacturer's instructions.

M2302.3 Photovoltaic Panels and Modules. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703

M2302.4 Inverters. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

CHANGE SIGNIFICANCE: With the increased emphasis on energy conservation, solar energy systems are becoming more prevalent. The IRC now distinguishes between the two types of solar energy systems—thermal and photovoltaic. Thermal systems circulate water through roof solar panels to provide or supplement hot water for the dwelling unit.

Photovoltaic (PV) solar panels generate electricity from the sun's energy. PV systems may be stand-alone or grid systems. In a grid system, also referred to as a utility interactive power-supply system, excess electricity can be sold to the electric utility provider. The new provisions reference the requirements of the *National Electrical Code* (NFPA 70/NEC). Solar PV systems are covered in NEC Article 690, which includes provisions for wiring, grounding, overcurrent protection, disconnecting means, and definitions. Installations also are subject to the structural, fire-resistance, and weather-resistance requirements of the IRC. In addition, systems and components must comply with the referenced standards when applicable and be installed in accordance with the manufacturer's installation instructions.