



TECHNICAL BRIEF | #2008-01

# Solar Systems

## SYSTEM TYPES

### Photovoltaic

Photovoltaics is the field of technology and research related to conversion of sunlight into electricity using solar cells.

### Solar Thermal

Solar thermal energy is a technology for harnessing solar energy for heat. Solar thermal collectors are characterized by the US Energy Information Agency as low-, medium- or high-temperature collectors. Low-temperature collectors are flat plates generally used to heat swimming pools. Medium-temperature collectors are also usually flat plates but are used to heat water for residential and commercial use. High-temperature collectors concentrate sunlight using mirrors or lenses and are generally used for electric power production.

## INSTALLATION TYPES

### Building-Integrated Photovoltaics

Building-integrated systems are incorporated as a roofing product or flashed into the roof tile system.

### Rack-Mounted Systems

These systems incorporate a deck or tile attached mounting bracket. Solar panels are affixed to the brackets typically with a racking system.

## ROOF TILE INSTALLATION

The roof must be constructed to support the loads of the roof-installed solar system. Roof-mounted or integrated systems that serve as roof coverings must conform to the requirements of Chapter 9 of the IRC, Chapter 15 of the IBC and/or other building, electrical, plumbing or other applicable codes. In addition, check with your local building official for specific licensing requirements.

Install solar systems incorporated into roof tile systems in accordance with the requirements of the Installation Manual for Moderate Climate Regions (TRI / WSRCA ICC-ES ESR-2015P), solar systems manufacturer's installation guidelines and applicable building code requirements.

Appropriate flashing that properly directs and keeps water flow on the surface of the tile or redirects the flow via appropriate flashing onto the surface of the tile or off the roof is critical. Deck-mounted or other systems that penetrate the tile or roof deck shall have both primary roof tile flashing and secondary deck flashing. Design wind speed calculation must be furnished from the solar manufacturer that meet or exceed local requirements, fire rating of the system verified if required and UL & CEC listing as required.

For more information on tile roofing, please visit our website at [tileroofing.org](http://tileroofing.org) or email [info@tileroofing.org](mailto:info@tileroofing.org) for specific inquiries.

**TRI ALLIANCE**  
2150 N 107th Street  
Suite 205  
Seattle, WA 98133  
P 206-209-5300  
E [info@tileroofing.org](mailto:info@tileroofing.org)  
[tileroofing.org](http://tileroofing.org)