

ICC-ES PMG Listing**PMG-1217**

Effective Date: November 1, 2013

This listing is subject to re-examination in one year.

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CSI: DIVISION: 22 00 00—PLUMBING
Section: 22 50 00—Pool Plumbing Systems

DIVISION: 23 00 00—HEATING
Section: 23 56 13—Heating Solar Collectors

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Products: Solar Collectors for Pool and Spa Water Heating System

Listee: Techno-Solis, Inc.
301 20th Street South
St. Petersburg, FL 33712
www.techno-solis.com

Compliance with the following codes:

2012 *International Swimming Pool and Spa Code*® (ISPSC)
2012 *Uniform Swimming Pool, Spa, and Hot Tub Code*® (UPSHC)*
2012 *International Green Construction Code*® (IgCC)
2010 *California Green Building Standards Code*® (CALGreen)
2012 *Uniform Solar Energy Code*® (USEC)*

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Compliance with the following standards:

NSF 50-2012, Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities
SRCC Standard 100, Test Methods and Minimum Standards for Certifying Solar Collectors

Identification:

Solar Collectors shall be marked with manufacturer's name or trademark, model number, and ICC-ES Solar listing mark.

Installation:

Solar Collectors and pool and spa water heating systems must be installed in accordance with the manufacturer's published installation instructions, the applicable codes and this listing. Where differences exist, the instructions in this listing must govern.

All individual components of the system which may require periodic examination, adjustment, service and/or maintenance must be easily and safely accessible by the owner and in accordance with the codes in force at the installation site. Individual collectors in any array must be replaceable or repairable without disturbing any other collector in the array.

Interconnection of the auxiliary system to the solar energy system shall be made in a manner which will not result in excessive temperature or pressure in the auxiliary system or bypassing of safety devices of the auxiliary system.

Collectors and support shall be installed in such a manner that water flowing off the collector surface will not damage the building or cause premature erosion of the roof. Water tanks located in or above the living space shall be installed on a drip pan with a drain line to a waste line or outside or have other means to safely remove any excess liquid.

Structural supports shall be selected and installed in such a manner that thermal expansion of the collector and piping will not cause damage to the collector structural frame or the building. Hangers shall provide adequate support and correct pitch of pipes. Hangers or supports for insulated pipes or components shall be designed to avoid compressing or damaging the insulation material.

Control sensors and the means for transmitting sensor outputs to control devices shall be protected from environmental influence such as wind, moisture, temperature or other factors which may alter their intended sensing function.

Models:Techno-Solis Solar Collectors for Pool and Spa Water Heating

Type	Size/Part #	Recommend Flow Rate (gpm)	Max. Pressure Rating (psi)	Collector Type
1.5" Header	4x8/c15ts08 4x10/c15ts10 4x12/c15ts012	5.0	35	Unglazed Flat Plate
2.0" Header	4x8/c20ts08 4x10/c20ts10 4x12/c20ts012	5.0	35	Unglazed Flat Plate

Conditions of Listing:

1. Where used in solar water heating systems, the pipe and fittings are recognized for use in pool and spa applications.
2. Solar collectors shall be installed as part of a water heating system in accordance with CALGreen Section A4.211.2, ISPSC Section 316, Chapter 7 USPSHC, IgCC Section 607.3 and Chapter 7 USEC.
3. Each piping system installation must be pressure-tested for leaks in the presence of the code official or the code official's designated representative.
4. Solar components should not reduce or increase humidity, temperature or thermal radiation beyond acceptable levels.

5. Neither wind loading (including uplift) nor the additional weight of filled collectors shall exceed the live or dead load ratings of the building, roof, roof anchorage, foundation or soil. Collector supports shall not impose undue stresses on the collectors. The design load shall be as specified by the codes in force at the installation site and shall include an additional load due to snow accumulation for applicable locations.
6. Underground piping subject to vehicular traffic shall be installed to withstand the additional loading applied by this traffic. The trenches and backfill shall be free of sharp objects in contact with the pipe.
7. Solar Collectors are manufactured Techno-Solis, Inc in St. Petersburg, FL under a quality control program with a surveillance inspection every other year conducted by ICC-ES.

