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BROWARD COUNTY BOARD OF RULES AND APPEALS

2010 FBC FORMAL INTERPRETATION

DATE: September 14, 2012

TO: All Building Officials

FROM: James DiPietro 
Administrative Director

SUBJECT: **Solar Assisted Air Conditioning Systems**

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Board Administrative Director
James DiPietro

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At its meeting of September 13, 2012, the Board approved an interpretation of the 2010 Florida Mechanical Code, **Section 301.4 - Listed and Labeled - Appliances regulated by this code shall be listed and labeled for the application in which they are installed and used, unless otherwise approved in accordance with Section 301.4.1.** The Board concurred with the Building Code Advisory Board of Palm Beach County Technical Advisory (attached) issued on 12/13/11.

The interpretation of this section was applicable to solar assisted air conditioning systems (a conventional air conditioning system with a solar collector placed between the compressor and the condensing coils) and such systems must obtain certification or successfully pass testing by State of Florida or a nationally recognized testing or certification agency prior to permitting.

Applicable Code Sections from the 2010 Florida Mechanical Code

301.4 Listed and labeled.

Appliances regulated by this code shall be *listed* and *labeled* for the application in which they are installed and used, unless otherwise *approved* in accordance with Section 301.4.1.

Exception: Listing and labeling of *equipment* and appliances used for refrigeration shall be in accordance with Section 1101.2.

301.4.1 Alternative materials, methods, equipment and appliances.

The provisions of this code are not intended to prevent the installation of any material or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

301.5 Labeling.

Labeling shall be in accordance with the procedures set forth in Sections 301.5.1 through 301.5.2.3.

EFFECTIVE DATE: SEPTEMBER 14, 2012

*******PLEASE POST AT YOUR PERMIT COUNTER*******

BCAB

Building Code Advisory Board of Palm Beach County

TECHNICAL ADVISORY

Issued on 12-13-11
by Building Code Advisory Board

Subject: Solar-Assisted Air Conditioning System

This technical advisory is established as a "Public Awareness Notice" concerning a "Solar-Assisted A/C System" that modifies a factory matched air conditioning equipment system and that has been advertised recently in Palm Beach County. The creator of this hybrid system is promoting it, using several unsubstantiated claims regarding AHRI Certification, UL Listing, and dramatically improved SEER efficiency ratings.

This system should not be confused with other tested and certified air conditioning systems that incorporate solar photovoltaic panels into the electrical portion of their system. Unlike those designs, the "Solar-Assisted" portion of this system involves re-routing the refrigerant line up to the roof, and through a solar collector which is intended to "super heat" the gas prior to routing the line back to the condenser coil. There are many technical concerns with this design theory that prompted months of research by BCAB staff, the details of which are beyond the scope of this advisory.

However, there is specific information pertinent to the claims involving AHRI Certification, UL Listing, limitations on the pressures and approvals of solar panels, and dramatic increases in SEER efficiency that are worth noting:

- 1) Air Conditioning, Heating, and Refrigeration Institute communications (attached – BCAB letter available on request)
- 2) Florida Solar Energy Center communications (attached)
- 3) Manufacturers – the original equipment manufacturers of the Air Conditioning Units that were contacted by BCAB staff, stated that their warranties and the UL Listing of their equipment would be voided by this type of field alteration.

It is the duty and the responsibility of the building official to ensure that products are properly installed in accordance with the manufacturer's instructions, certifications, and their listings. Installation of a system, that is not in compliance with listing and installation standards can lead to problems and invalidation of the warranty for the customer. When alternate materials, technologies, or designs are being proposed, it is incumbent on the applicant to provide enough information to substantiate the proposed alternative will comply with the code. The building official can request testing or other type of documentation when insufficient evidence is submitted at time of permitting. This firm has not demonstrated their claims with thorough and reliable science, engineering, testing, or demonstrated field applications. Due to the several above cited issues, and the extraordinary time spent by BCAB staff in the analysis of submitted materials that failed to substantiate the code-compliance of the hybrid system; the recommendation of the Board is that this system must obtain certification or successfully pass testing by a State of Florida or nationally recognized testing or certification agency, prior to permitting.

For Building Code Advisory Board


Jack Tomaski, Chair

The Building Code Advisory Board of Palm Beach County was created by a Special Act of the Florida Legislature, at the request of the building code enforcement and construction industries. The purpose of the Board is to advise the Board of County Commissioners and local governments concerning the adoption of building codes and their enforcement throughout the County. The Act also granted Palm Beach County special powers concerning building codes, in the interest of the public's health, safety and general welfare.

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