

BROWARD COUNTY BOARD OF RULES AND APPEALS

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FBC 5th Edition (2014) **FORMAL INTERPRETATION (#6)**

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Board Administrative Director
James DiPietro

—ESTABLISHED 1971—

DATE: May 18, 2015
TO: All Building Officials
FROM: James DiPietro, Administrative Director 
SUBJECT: Solar Assisted Air Conditioning Systems.

At its regular meeting of May 14, 2015, the Board of Rules and Appeals approved an interpretation of the following 5th Edition (2014) Florida Building Codes:

1. FBC, Mechanical Section 301.7 - Listed and Labeled,
2. FBC, Residential Section M1302.1 - Listed and Labeled,
3. FBC, Energy Conservation, Sections C403.2.3 and R405.5.2. HVAC equipment performance requirements.
4. FBC, 5th Edition [2014] FBC Broward County Administrative Provisions, Section 104.32

Alternative materials, design and methods of construction and equipment.

The Board concurred with the Building Code Advisory Board of Palm Beach County Technical Advisory (attached) issued on 12/13/11.

Formal Interpretation:

The above sections are applicable to "solar assisted air conditioning systems" (a conventional air conditioning system with a solar heat 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.

EFFECTIVE DATE: September 14, 2012
RE-ISSUED: May 14, 2015
EFFECTIVE DATE: June 30, 2015

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

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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 Condensing 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



Jacek Tomasiak, 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.