



BROWARD COUNTY  
BOARD OF RULES AND APPEALS

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www.broward.org/codeappeals

**FBC 6<sup>th</sup> Edition (2017)**  
**FORMAL INTERPRETATION (#6)**

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**Board Administrative Director**

James DiPietro

—Established 1971—

**DATE:** October 12, 2017  
**TO:** All Building Officials  
**FROM:** James DiPietro, Administrative Director  
**SUBJECT:** Solar Assisted Air Conditioning Systems.

At its regular meeting of October 12, 2017, the Board of Rules and Appeals approved an interpretation of the following 6<sup>th</sup> Edition (2017) 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 table R405.5.2.(1) HVAC equipment performance requirements.
4. FBC, 6th Edition (2017) 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: October 12, 2017  
EFFECTIVE DATE: January 1, 2018

**\*\*\*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 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.

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comfortable at a higher temperature...In addition your air conditioning unit doesn't run as long and cycles less.

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A S.E.E.R. (Seasonal Energy Efficiency Rating) is the rating and performance standards that have been developed by the U.S. government and equipment manufacturer's to produce an energy consumption rating that is easy to understand by consumers. It has a universal formula and conditioning that can be applied to all units and compensates for varying weather conditions.

ENERGY STAR is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.

AHRI administers the heating, ventilation, air conditioning and commercial refrigeration (HVACR) industry's performance certification programs for heating and cooling equipment and components. Manufacturers who have had their product performance claims tested and certified by AHRI can apply one of the association's families of certification marks.

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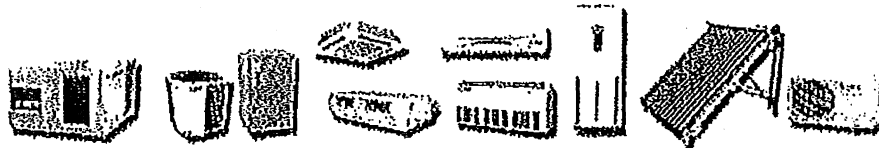
Use non-ozone-depleting refrigerant, such as R-410A, in cooling products.

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Feature "smart" control boards or diagnostic controls for total indoor air quality.

Incorporate noise-reducing features.

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**From:** Ann.Stanton@dca.state.fl.us [mailto:Ann.Stanton@dca.state.fl.us]  
**Sent:** Friday, September 16, 2011 11:34 AM  
**To:** Bob Boyer  
**Subject:** FW: Solar Cool Permit Issues

----- Forwarded by Ann Stanton/DCA/FLEOC on 09/16/2011 11:33 AM -----

Philip Falrey <pfalrey@fsec.uof.edu>

To Ann.Stanton@dca.state.fl.us

cc Robin Vielra <robin@fsec.ucf.edu>

09/16/2011 10:49 AM

Subject Re: Fw: Solar Cool Permit Issues

Ann,

We have seen this proposed system before; it is described here:  
<http://www.sednaaireusa.com/How%20it%20works.htm>. It does not work. In fact, it will decrease the efficiency of the air conditioner on which it is installed. In fact, one could make a cogent argument that if this concept were incorporated into a minimum efficiency air conditioner it would no longer meet the minimum federal standard for the manufacture and sale of air conditioner systems. The issue is that we want to extract heat from the loop between the compressor and condenser, not add heat to it- they have it exactly backward!

Philip

On 9/16/2011 10:29 AM, [Ann.Stanton@dca.state.fl.us](mailto:Ann.Stanton@dca.state.fl.us) wrote:

Phillp: Does one of your people want to respond on this issue? I'd appreciate it.

Ann

----- Forwarded by Ann Stanton/DCA/FLEOC on 09/16/2011 10:28 AM -----

Bob Boyer  
<[BBOYER@pbcgov.org](mailto:BBOYER@pbcgov.org)>

To "Ann.Stanton@dca.state.fl.us" <[Ann.Stanton@dca.state.fl.us](mailto:Ann.Stanton@dca.state.fl.us)>

cc Rebecca Caldwell <[rcaldwel@pbcgov.org](mailto:rcaldwel@pbcgov.org)>, Richard Gathright  
<[rgathrin@pbcgov.org](mailto:rgathrin@pbcgov.org)>, Michael Fox <[Mfox@pbcgov.org](mailto:Mfox@pbcgov.org)>

09/16/2011 10:16 AM

Subject FW: Solar Cool Permit Issues

Good Morning Ann,

I am forwarding ongoing correspondence that we are having with a solar contractor on the proposed field modification of a AC system. The contractor is proposing to install a thermal solar collector in the hot gas loop between the compressor and the condenser. We would be very interested in hearing your opinion and thoughts on this proposed installation. We have sent a letter to AHRI which I have attached also requesting input on the proposed installation. Thank you for your time in considering and responding to our questions.

Regards,

Bob

