



BROWARD COUNTY BOARD OF RULES & APPEALS

ROOFING COMMITTEE MARCH 11, 2020

AGENDA

TO: Members of the Broward County Roofing Committee

William Flett, Chair	Guillermo Echezabel	Adam LeBlanc	Abbas Zackria
Daniel Lavrich, Vice-Chair	John Famularo	Gary Waldrep	Victor Blanco
Mike Duskin	Ernest Fontan	Karen Warseck	

FROM: Ted Fowler, Chief Structural Code Compliance Officer

SUBJECT: Meeting of Roofing Committee

Chair Bill Flett has called for a meeting of the Board's Roofing Committee on Wednesday, **March 11, 2020, 1:30 p.m.**, in Room 237 (2nd floor) of the West Regional Library, 8601 West Broward Boulevard, Florida 33324.

A G E N D A

Roll Call:

Approval of Minutes – January 10, 2005, August 8, 2006, April 10, 2007, August 10th, 2010

Business Items:

- 1. Discussion concerning a) how to handle inspections for re-roofs that require solar panels to be removed and re-installed, and b) notification to Building Departments that solar panels have been removed so that the government knows to reinspect – Committee suggestions for County-wide guidelines. Page 8**
- 2. Discussion concerning how to reduce the possibility of leaks when solar panels are re-installed for re-roof replacements – Committee suggestions for County-wide guidelines. No backup**
- 3. Comparison of Miami-Dade “Solar Thermal/Electric Instructions and Recommendations” (2017) and Broward County “Administrative Guidelines**

If a person desires to appeal any decision with respect to any matter considered at this meeting, such person will need a record of the proceedings and, for this reason, such person may need to ensure that a verbatim record of the proceeding is made, which includes the testimony and evidence upon which the appeal is to be based (Section 286.0105, Florida Statutes)

**for Processing Solar Thermal/Electric Permits” (2009) for the purpose of
updating the Broward document. Page 13**

- 4. Consideration of Permit Paperwork Reduction, Specifically Product Approvals/Notice of Acceptances (NOA's). Page 38**
- 5. Public Comment – 3-minute time limit**
- 6. Set Next Meeting Date (if necessary)**
- 7. Adjournment**



BROWARD COUNTY

Board of Rules & Appeals

ONE NORTH UNIVERSITY DRIVE, SUITE 3500-B, PLANTATION, FLORIDA 33324

PHONE (954) 765-4500 FAX: (954) 765-4504

<http://www.broward.org/codeappeals>

TO: Roofing Committee
FROM: Jonda K. Joseph, Administrative Specialist
DATE: February 27, 2020
SUBJECT: Approval of Minutes

It has come to our attention that there are outstanding meeting minutes that have not been presented at a Committee meeting for approval.

To bring our records up-to-date to reflect a vote of approval, the listed sets of minutes are presented for your approval.



BROWARD COUNTY

Board of Rules & Appeals

955 S. Federal Highway, Suite 401, Fort Lauderdale, Florida 33316

Phone (954) 765-4500 Fax: (954) 765-4504

<http://www.broward.org/building-code.htm>

**Board of Rules and Appeals'
Roofing Committee Meeting
January 10, 2005
MINUTES**

A meeting of the Board of Rules and Appeals, Roofing Committee was called to order by, Mr. Waldrep, at 1:30 p.m.

Roll Call

Present

Gary Waldrep
Mike Duskin
Guillermo Echezabal
William Flett
Ernest Fontan
Bob Hannon
Gary Slopey
Manny Synalovski
Karen L. Warsek

Excused

Daniel Lavrich

After roll call, the presence of a quorum was announced by Chairman Mr. Waldrep.

The committee members proceeded to review the proposed changes included in the agenda and develop a consensus report for staff to present to Miami Dade Code Compliance and the Board of Rules and Appeals, the sections were reviewed until the Chairman received a unanimous position by the Committee members.

1. Agenda Page #1 thru 2 - Proposed change to RAS 120
The Committee approved the change with the recommendation of revising the language for clarification.
2. Agenda Page #3 thru 4 - Proposed change to 1521.11
Change was approved.
3. Agenda Page# 5 thru 7- Proposed change to 1519.16
Committee approved this change, with the exception of the use of a mandated lab. It was recommended to add design professional as an option to a mandated lab.
4. Agenda Page # 8 thru 10 - Proposed change to R4402.8.16
Committee approved this change, with exception of the use of a mandated lab . It was recommended to add design professional as an option to a mandated lab.
5. Agenda Page #11 thru 12 - Proposed change to 4402.7.8.10

Change was approved.

6. |Agenda Page#13 thru 14 - Proposed change to 4402.10.11
|Change was approved.
7. Agenda Page#15 thru 16- Proposed change to 1513.1
The committee cannot support the modification as written unless it was revised to apply to new construction only.
8. Agenda Page#17thru 18 - Proposed change to R4402.2.1
The committee cannot support the modification as written unless it was revised to apply to new construction only.
9. Agenda Page#19 thru 20 - Proposed change to R119.3.09B
Change was approved.
10. Agenda Page # 21thru 22 - Proposed change to RAS 118 Section 3.08.A.5
Change was approved.
11. Agenda Page# 23 thru 24 - Proposed change to RAS 119 Section 3.10.B
Change was approved.
12. Agenda Page# 25 thru 26 - Proposed change to TAS 106 Section 6.1.2
Change was approved.
13. Agenda Page# 27 thru 28 - Proposed change to TAS 106 Section 401
Change was approved.

There being no further business to discuss, the meeting was adjourned at 2:15 p.m.



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**Board of Rules and Appeals'
Roofing Committee Meeting
August 8, 2006**

MINUTES

A meeting of the Board of Rules and Appeals, Roofing Committee was called to order by, Mr. Waldrep, at 1:30 p.m.

Roll Call

Present

Gary Waldrep
Mike Duskin
Guillermo Echezabal
William Flett
Ernest Fontan
Bob Hannon
Gary Slopey

Excused

Daniel Lavrich
Manny Synalovski
Karen L. Warseck

1. Review proposed changes to the HVHZ Section 1521.5 of the 2004 Florida Building Code in reference to Roofing. Item was presented for review by Board members Mr. Allan A. Kozich, P.E. Mr. Bill Flett moved a motion duly seconded, for staff to draft a standardized statement with respect to re-nailing of roof sheathing for the purpose of creating a stamp to be placed on the permit cards by the Building Departments.

Staff will draft such statement and will forward it to the Chairman and members of the roofing committee for review and approval, after this it will be presented to the Board of Rules and Appeals for consideration.

2. Expediting roofing inspections.

Mr. Bill Flett moved a motion, duly seconded to request the Chairman to place re-roofing inspections on the Board of Rules and Appeals' Meeting Agenda for the purpose of expediting permits in the municipalities where delayed inspections occurred. It was proposed to take into possible consideration the expansion of the square footage exemption from 1500 Sqf. as specified in FBC HVWZ, Section 1521.4.3.2 .

3. Permitting of roof stacks and vents.

As referred By Mr. Kevin Fennell, Plumbing Chief Code Compliance Officer, Mr. Carroll brought to the Committee members a question in reference to roof stacks and vents. Chairman Mr. Waldrep stated the possibility of having a joint meeting of the Roofing, Mechanical and Plumbing Committees to review the issue.

Chairman, Waldrep moved to adjourn at 2.55 pm.



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Board of Rules and Appeals' Roofing Committee Meeting April 10, 2007

MINUTES

A meeting of the Board of Rules and Appeals, Roofing Committee was called to order by, Mr. Waldrep, at 1:30 p.m.

Roll Call

Present

Gary Waldrep
Mike Duskin
Guillermo Echezabal
William Flett
Ernest Fontan
Bob Hannon
Gary Slopey
Daniel Lavrich
Karen L. Warseck
Neil Saifman

Excused

Manny Synalovski

Guest: Mark A. Zehnal, CPRC

Item 1 & 3

1. During its regular meeting of December 7, 2006, the Board of Rules and Appeals requested the Roofing Committee to review Section 1571.5 of The Florida Building Code Building and Section 4402.7.3 Florida Building Code Residential.
3. General Discussion in reference to secondary water barriers.

Chairman directed the Committee to review Items 1 and 3 at the same time based on the similarity of the subject matter. Mr. Flett moved a MOTION to table this item. Motion failed.

Ms. Warsek moved and duly seconded a motion to accept staff's draft of Formal Interpretation in reference to Item 3 with the following modifications revise "these " to 6 inch strips in paragraph 1, and delete paragraph 3 in its entirety.

Motion was duly seconded there was a roll call and motion passed 8 to 2.

The Committee could not come to a consensus with respect to Item 1 the Chairman directed Staff to research information for the Committee to review and place this Item in the next agenda.

Item 2.

Review definition of valley - SFBC 1999

Motion was made by Mr. Flett and duly seconded to have staff draft a Formal Interpretation to forward to the Board's next meeting and proposed a code change to the Florid Building Code the next Code cycle.

Motion passed unanimously

General Discussion:

It was brought to the Committee attention that the City of Pompano is requiring re-nailing inspections. The Chairman requested staff to meet with Building Official in an attempt to resolve this issue; otherwise staff is directed to forward it to the Board for review. Additional discussion followed about in progress inspections Chairman directed staff to place this issue in a future agenda.

Chairman, Waldrep moved to adjourned at 2.55 pm.

DRAFT



BROWARD COUNTY

Board of Rules & Appeals

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**Board of Rules and Appeals'
Roofing Committee Meeting
August 10, 2010**

MINUTES

Call to Order

A meeting of the Board of Rules and Appeals, Roofing Committee was called to order by its chairman, Mr. William Flett at 1:39 p.m.

Roll Call

Present

Flett, Zackria, Warsek, Etchezabal, Fontan, Slopey, Hannon

Absent

Famularo, Lavrich, Duskin, Waldrep

The presence of a quorum was announced.

Item 1.

Review proposed formal interpretation with respect to Section 109.13. Mr. Flett proposed this to the Board at its meeting of June 10, 2010. The Board tabled the interpretation and requested the roofing committee to review and make recommendations. The definition and meaning of the section was discussed in depth by the committee members.

A Motion was presented by Mr. Slopey to secure the tile by city ordinance. The motion was duly seconded and later altered as follows: "If the roofing contractor, after the completion of a tile re-roof, leaves the owner of the building, approximately twenty new and undamaged field tiles and five hip and ridge tiles, in pursue of Section 109.13, it shall be responsibility of the building owner not the roofing contractor to secure the tiles in accordance with the local city ordinances." The motion passed. One opposed.

Item 2.

Review proposed interpretation with respect to section 1521.5.

Mr. Carroll presented the item to committee members, followed by discussion a motion was made to approve the interpretation of Section 1521.5. Section 1521.5 requires a reroof to be fastened in compliance with the code however, does not require an inspection or a re-nailing affidavit to be submitted to the Building Department.

The Motion was unanimously approved.

Meeting was adjourned at 2:47 pm.

ITEM 1

Dipietro, James

From: Dipietro, James
Sent: Tuesday, February 25, 2020 1:41 PM
To: Fowler, Theodore; Joseph, Jonda
Cc: 'bflett@bellsouth.net'; 'dlavrich'; RULES
Subject: FW: Send data from MFP12083900 02/25/2020 11:03, roofing committee meeting solar installations

Ted and Jonda. Please make sure that the e-mails below are contained in the roofing committee agenda packet. Thank you. Jim

Jim DiPietro
Administrative Director
Broward County Board of Rules and Appeals
1 North University Drive, Suite 3500 B
Plantation FL 33324
954-765-4500 X9892
954-931-2393 (cell)

From: SHALANDA GILES <gshaland@bellsouth.net>
Sent: Tuesday, February 25, 2020 1:02 PM
To: Dipietro, James <JDIPIETRO@broward.org>
Subject: Re: Send data from MFP12083900 02/25/2020 11:03, roofing committee meeting solar installations

Jim,

Upon skimming through **MDC's policy**; they've gone as far as recommending the Owner to be notified of possible leakage, void of roof warranties as well as the additional responsibility of removal and reinstallation of the panels for roof maintenance, but again **there's no mention of how to handle reinstallation under a Re-roofing permit.**

On Tuesday, February 25, 2020, 11:07:40 AM EST, Dipietro, James <jdipietro@broward.org> wrote:

From: SHALANDA GILES <gshaland@bellsouth.net>
Sent: Tuesday, February 25, 2020 12:51 PM
To: Dipietro, James <JDIPIETRO@broward.org>
Subject: Re: solar panels and roofing maintenance

Thanks Jim, but my concern is not so much new installations we've gotten that part down pat... **my concern are the re-roofs that require panels to be removed and reinstalled.**

On Tuesday, February 25, 2020, 10:04:03 AM EST, Dipietro, James <jdipietro@broward.org> wrote:

Hello Bill. Attached are materials that relate to a roofing committee meeting that we discussed today that I am sending to your updated e-mail address. Please let me know when you have had a chance to review and decide if you want additional items to be addressed at the committee meeting.

To all copied, if you have materials to add please let me or Ted know. Ted will be lead staff for this committee.

Thank you all. Jim

Jim DiPietro
Administrative Director
Broward County Board of Rules and Appeals
1 North University Drive, Suite 3500 B
Plantation Fl 33324
954-765-4500 X9892
954-931-2393 (cell)

Under Florida law, most e-mail messages to or from Broward County employees or officials are public records, available to any person upon request, absent an exemption. Therefore, any e-mail message to or from the County, inclusive of e-mail addresses contained therein, may be subject to public disclosure.



BROWARD COUNTY BOARD OF RULES & APPEALS
JANUARY 9, 2020
MEETING VERBATIM EXCERPT

GENERAL BOARD MEMBERS DISCUSSION

Giles-Nelson: Solar panels and reroofing maintenance. I think there's going to be an issue as we move forward and I think we're going to eventually have to address it. Right now we have solar panels with reroofing. Most of the solar panels take up at least sixty or seventy percent of a roof. And when an owner is ready to reroof the solar panels have to be removed and replaced. (a) So, the question is, my first question is should that be included with our rooftop equipment - the solar panels as rooftop equipment placed on our current rooftop equipment for mechanical equipment. (b) The second one is who should be inspecting the reinstallation of the solar panels. Should we even get involved or should we leave that as it is now. (c) The third one is, is there a method where the solar panels do not have to be removed when we reroof. That's an additional cost for our homeowners that is going to escalate has more and more homeowners try to get this credit and rebate from the federal government to go green. So, I think it is all going to eventually start to snowball because we have a growing population on a fixed income. Once they make this investment to make payment, its going to be a hefty cost.

Comment: (a) FBC 2017 6th Edition Sections 1522.2 thru 1522.3.5 indicate the requirements to address roof top mounted equipment when reroofing existing roofs, it does not specifically address photovoltaic/ hot water solar system equipment.

The process to include roof top photovoltaic panels / hot water solar system equipment during existing roof replacements may be required to be addressed by the FBC Roofing TAC committee to make it a code requirement to comply with FBC 2017 6th Edition Sections 1522.2 thru 1522.3.5 or define Rooftop Mounted Equipment to include Photovoltaic Panels/ Hot Water Solar Panels.

Comment: (b) As per Chief Electrical Code Compliance Officer Ken Castronovo response to this question, yes, the reinstallation of the photovoltaic panels would require an electric inspection (a professional engineer's report satisfying the panel connections have been torqued to required specifications could be an acceptable method) Do all building departments implement this requirement?

Comment: (c) The method to implement the requirement to elevate the photovoltaic panels/hot water solar panels to an acceptable elevation to allow the existing roof to be replaced without removing the panels is a consideration that would need to be addressed during the engineered plan design installation as to what is required to satisfy the requirements of the High Velocity Hurricane Zones, including but not limited to each municipality’s local ordinances and HOA requirements. These requirements may require state legislation to be adopted to allow the photovoltaic panels/hot water solar panels to be elevated to an acceptable height to allow the existing roof to be replaced at a future date to supersede local municipality and HOA height and visual appearance regulations in the spirit of achieving a green environment.(Home Rule?)

102.8 Existing mechanical equipment. An agency or local government may not require that existing mechanical equipment located on or above the surface of a roof be installed in compliance with the requirements of the FBC except during reroofing when the equipment is being replaced or moved during reroofing and is not in compliance with the provisions of the FBC relating to roof mounted mechanical units.

1522.2 Rooftop mounted equipment.

All rooftop equipment and supports shall be secured to the structure in compliance with the loading requirements of Chapter 16 (High-Velocity Hurricane Zones). The use of wood “sleepers” shall not be permitted.

1522.3

Machinery, piping, conduit, ductwork, signs and similar equipment may be mounted on roofs in compliance with the following:

**TABLE 1522.3
ROOF MOUNTED EQUIPMENT HEIGHT REQUIREMENTS**

WIDTH OF EQUIPMENT (in.)	HEIGHT OF LEGS (in.)
--------------------------	----------------------

Up to 24	14
25 to 36	18
37 to 48	24
49 to 60	30
61 and wider	48

For SI: 1 inch = 25.4 mm.

1522.3.1

Item 2 – no backup at this time

2017 Miami-Dade County
Boards of Rules and Appeals
Solar Thermal/Electric
Instructions and Recommendations

The Uniform Permit Submittal Matrix for Solar Thermal and Solar Electric Installations in the High Velocity Hurricane Zone is adopted as a "BORA Approved Guideline" establishing minimum code requirements regarding permit application submittals, thereby creating and instituting countywide uniformity. In addition:

- A.) Building Departments shall establish an individual master permit for both Solar Thermal and Solar Electric installations to which applicable subsidiary categories are to be tied. Adding additional categories to the master permit may not require an additional permit obtained by a separate contractor, but will require a separate trade review in every instance.

- B.) It is established that Certified Solar Contractors may obtain the master permit in either the Solar Thermal or Solar Electric categories. Certified or Registered Plumbing Contractors may obtain the master permit in the Solar Thermal category. Certified or Registered Electrical Contractors may obtain the master permit in the Solar Electric category. Registered Solar Contractors may obtain the master permit in the solar thermal category, restricted to residential installations only. Each of these contractors may perform all work identified in their individual scopes of work including the installation of appurtenances, apparatus, or equipment. However, such contractor shall subcontract all other work which is specified as being the work in the trade of another contractor.

- C.) Building Departments shall provide inspections of solar thermal and solar electric systems. More than one inspection may be performed during any inspection visit.

Solar Thermal

Building/Structural/Roofing – Time of Installation and Final

Plumbing – Final

Solar Electric

Building/Structural/Roofing – Time of Installation and Final

Electrical – Rough and Final

Hybrid Systems (Complete PV Panel System combined with integral solar water panels)

Building/Structural/Roofing – Time of Installation and Final

Electrical – Rough and Final

Plumbing – Final

- D.) The Board recommends Building Departments establish an inspection procedure to ensure all required inspections are completed within a specified two hour timeframe.
- E.) Recommend that Building Departments include an Owner notification on all solar thermal or solar electric permit applications, for existing structures, using substantially the language provided below:
- “Installation of roof mounted photovoltaic or solar support systems typically require roof system penetrations to allow attachment to the structure which may create additional long-term roof system maintenance requirements and/or jeopardize roof system manufacturer’s warranties. Roof mounted solar systems generally require removal and reinstallation of solar panels/arrays in order to perform routine roof system maintenance, repair or replacement.”*
- F.) Building Departments shall maintain accurate records regarding the type, number and location of Solar Energy installations.
- G.) Recommend and encourage Building Departments to expand access of renewable energy technology to the community by not imposing needless or excessive oversight measures and through a program of streamlined permitting and inspections.
- H.) Recommend and encourage Manufacturers to pursue optional product approval as a means of accelerating the permit approval process by ensuring a less complicated and less expensive process for consumers.
- I.) The Regulatory and Economic Resources Department to continue the ongoing awareness program designed to ensure all certified personnel understand the process of permitting and inspecting Solar Thermal and Solar Electric installations.
- J.) The Regulatory and Economic Resources Department will provide guidance and assistance to the Solar Energy industry, provide mediation, and assist with the BORA appeal process as necessary.

UNIFORM PERMIT SUBMITTAL MATRIX
for
SOLAR THERMAL AND SOLAR ELECTRIC
INSTALLATIONS
in
THE HIGH VELOCITY HURRICANE ZONE
(Revised January 2017)

General Requirement	Submittal Requirements	F.S./Code Section
1. Permit Application		
		FBCB 105.3 BCAP 105.3
2. Building/Equipment Layout Plan		
		FBCB 107 BCAP 106
3. Structural Design		
<ul style="list-style-type: none"> Photovoltaic Roof Mounted Panel & Solar Thermal Equipment 	Submit signed and sealed drawings & design calculations by licensed Professional Engineer or Registered Architect showing: <ul style="list-style-type: none"> Documentation/verification exposed solar panel equipment meet wind loads. Documentation/verification support framing meets both uplift and lateral forces. Design of connections for the wind loads. Documentation/verification structural supports will accommodate additional dead loads. 	FBCB 1522.1 FBCEB 504 FBCB 1616.1.2 FBCEB 706 FBCB 1605 FBCB 1620.1 FBCB 1620.2 FBCB 1620.3 FBCB 1621 Note: Dead load compliance with the Exception contained in the FBCEB Section 706.2 may be demonstrated by Providing the Dead Load criteria from the original plans.
4. Roof Design		
(FBCEB 708.3 References Sec. 1512-1525 FBC)		
<ul style="list-style-type: none"> Building Integrated Photovoltaic (BIPV) 	Submit a Uniform HVHZ Permit Application.	FBCB 1512.3 FBCB 1512.2.1 FBCB 1516.2
<ul style="list-style-type: none"> Photovoltaic Roof Mounted Panel 	Submit a detail of the roof penetration flashing Submit clearance requirements.	FBCB 1514 FBCB 1522.3.1
<ul style="list-style-type: none"> Solar Thermal 	Submit a detail of the roof penetration flashing. Submit clearance requirements.	FBCB 1514 FBCB 1522.3.1

5. System Components		
<ul style="list-style-type: none"> Solar Water Heater 	Submit FSEC Approval/Listing and System Reference Drawing.	FBCB 107 FBCEC R403.4.3 BCAP 101
<ul style="list-style-type: none"> <u>Solar Water Heater using a PV powered pump</u> 	<u>Submit listing for PV panel and pump.</u>	NEC Article 690
<ul style="list-style-type: none"> Solar Swimming Pool Water Heater 	Manufacturers selected system installation manual/detail and system specifications.	FBCB 107 BCAP 106
<ul style="list-style-type: none"> <u>Solar Swimming Pool Water Heater</u> 	<u>Submit FSEC Approval/Listing and System Reference Drawing.</u>	FBCB 107 F.S. 377.705 BCAP 101
<ul style="list-style-type: none"> Photovoltaic System Electrical Engineer Requirements 	Plans must be signed and sealed by a Professional Engineer if: a.) The system has a value of more than \$50,000, or; b.) The systems has an aggregate service capacity of 600 amperes (240 volts) or more for a residential electrical system, or; c.) The system has an aggregate service capacity of 800 amperes (240 volts) or more for a commercial or industrial electrical system.	F.S. 471.003(h)
<ul style="list-style-type: none"> Statutory Requirement 	FSEC will generate a System Certification Approval Form.	F.S. 377.705
<ul style="list-style-type: none"> Electrical Diagram 	Submit electrical diagram designed in accordance to the National Electrical Code Article 690 Solar Photovoltaic Systems and include components interconnects, conductor types and sizes, conduit types and sizes, disconnects, and point of interconnection.	NEC Article 690
<ul style="list-style-type: none"> Component Documentation 	FSEC Certification.	F.S. 377.705
Abbreviations	BCAP - Broward County Administrative Provisions FBCB - Florida Building Code, Building Volume FBCEB - Florida Building Code, Existing Building Volume FBCEC - Florida Building Code, Energy Conservation Volume F.S - Florida Statute FSEC - Florida Solar Energy Center NEC - National Electric Code	

2009

Effective: May 15, 2009

Broward County Board of Rules and Appeals Policy #09-02

Subject: Administrative Guidelines for Processing Solar Thermal/Electric Permits

- A. Adopt the Solar Thermal and Solar Electric Matrix as a “BCBRA” Approved Guideline” establishing minimum code requirements regarding permit application submittals, thereby creating and instituting countywide uniformity.
- B. Building Departments shall establish an individual master permit for both Solar Thermal and Solar Electric installations to which applicable subsidiary categories are to be tied. Adding additional categories to the master permit may not require an additional permit obtained by a separate contractor, but will require a separate trade review in every instance.
- C. It is established that Certified Solar Contractors may obtain the master permit in either the Solar Thermal or Solar Electric categories. Certified or Registered Plumbing Contractors may obtain the master permit in the Solar Thermal category. Certified or Registered Electrical Contractors may obtain the master permit in the Solar Electric category. Registered Solar Contractors may obtain the master permit in the Solar Thermal category, restricted to residential installation only. Each of these contractors may perform all work identified in their individual scopes of work including the installation of appurtenances, apparatus, or equipment. However, such contractor shall subcontract all other work, which is specified as being the work in the trade of another contractor.
- D. Building Departments shall provide inspections of solar thermal and solar electric systems. More than one inspection may be performed during any inspection visit.

Solar Thermal

Building/Structure/Roofing – Time of installation and Final

Plumbing – Final

Solar Electric

Building/Structure/Roofing – Time of Installation and Final

Electrical – Rough and Final

Hybrid Systems (Complete PV Panel System combined with integral solar water panels)

Building/Structure/Roofing – Time of Installation and Final

Electrical – Rough and Final

Plumbing – Final

- E. The Board recommends Building Departments establish an inspection procedure to ensure all required inspections are completed within a specified two-hour timeframe.
- F. Recommend that Building Departments include an Owner notification on all solar thermal or solar electric permit applications, for existing structures, using substantially the language provided below:

“Installation of roof mounted photovoltaic or solar support systems typically require roof system penetrations to allow attachment to the structure, which may create additional long-term roof system maintenance requirements and/or jeopardize roof system manufacturer’s warranties. Roof mounted solar systems generally require removal and reinstallation of solar panels/arrays in order to perform routine roof system maintenance, repair or replacement.”

- G. The Board recommends Building Departments maintain accurate records regarding the type, number and the location of solar energy installations.
- H. Recommend and encourage Building Departments to expand access of renewable energy technology to the community, by not imposing needless or excessive oversight measures and through a program streamlined permitting and inspections.
- I. Recommend and encourage manufacturers to pursue optional product approval as a means of accelerating the permit approval process by ensuring a less complicated and less expensive process for consumers.
- J. BCCO to continue the ongoing awareness program designed to ensure all certified personnel understand the process of permitting and inspecting Solar Thermal and Solar Electric installations.
- K. BCCO will provide guidelines and assistance to the Solar Energy Industry, provide mediation, and assist with the BORA appeal process as necessary.

BROWARD BORA

UNIFORM PERMIT SUBMITTAL MATRIX for SOLAR THERMAL AND SOLAR ELECTRIC INSTALLATIONS in THE HIGH VELOCITY HURRICANE ZONE

General Requirement	Submittal Requirements	F.S./Code Section
1. Permit Application		
		FBCB 105.3 BCAP 105.3
2. Building Equipment Layout Plan		
		FBCB 106 BCAP 106
3. Structural Design		
<ul style="list-style-type: none"> Photovoltaic Roof Mounted Panel & Solar Thermal Equipment 	Submit signed and sealed drawings & design calculations by licensed Professional Engineer or Registered Architect showing: <ul style="list-style-type: none"> Documentation/verification exposed solar panel equipment meet wind loads. Documentation/verification support framing meets both uplift and lateral forces. Design of connections for the wind loads. Documentation/verification structural supports will accommodate additional dead loads. 	FBCR4402.11.2 FBCEB 404 FBCR4403.1.2 FBCEB 707 FBCR4403.7.8 FBCR4403.9.1 FBCR4403.9.2 FBCR4403.9.3 FBCR4403.10 Note: Dead load compliance with the Exception contained in FBCE Section 707.4.1 may be demonstrated by providing Dead Load criteria from the original plans.
4. Roof Design		
<ul style="list-style-type: none"> Building Integrated Photovoltaic (BIPV) 	Submit a Uniform HVHZ Permit Application.	FBCR4402.1.3 FBCB 1512.3 FBCR4402.1.2.1 FBCB 1512.2.1 FBCR4402.5.2 FBCB 1516.2
<ul style="list-style-type: none"> Photovoltaic Roof Mounted Panel 	Submit a detail of the roof penetration flashing	FBCR4402.3 FBCB 1514
	Submit clearance requirements.	FBCR4402.11.3.1 FBCB 1522.3.1
<ul style="list-style-type: none"> Solar Thermal 	Submit a detail of the roof penetration flashing.	FBCR4402.3 FBCB 1514
	Submit clearance requirements.	FBCR4402.11.3.1 FBCB 1522.3.1

<ul style="list-style-type: none"> Solar Water Heater 	Submit FSEC Approval/Listing and System Reference Drawing.	FBCB 101 FBCR N1112 BCAP 101
<ul style="list-style-type: none"> Solar Water Heater using a PV powered pump 	Submit listing for PV panel and pump.	NEC Article 690
<ul style="list-style-type: none"> Solar Swimming Pool Water Heater 	Manufacturers selected system installation manual/detail and system specifications.	FBCB 106 BCAP 106
<ul style="list-style-type: none"> Solar Swimming Pool Water Heater 	Submit FSEC Approval/Listing and System Reference Drawing.	FBCB 101 F.S. 377.705 BCAP 101
<ul style="list-style-type: none"> Photovoltaic System Electrical Engineer Requirements 	Plans must be signed and sealed by a Professional Engineer if: a.) The system has a value of more than \$50,000, or; b.) The systems has an aggregate service capacity of 600 amperes (240 volts) or more for a residential electrical system, or; c.) The system has an aggregate service capacity of 800 amperes (240 volts) or more for a commercial or industrial electrical system.	F.S. 471.003(h)
<ul style="list-style-type: none"> Statutory Requirement 	FSEC will generate a System Certification Approval Form.	F.S. 377.705
<ul style="list-style-type: none"> Electrical Diagram 	Submit electrical diagram designed in accordance to the National Electrical Code Article 690 Solar Photovoltaic Systems, in its entirety.	NEC Article 690
<ul style="list-style-type: none"> Component Documentation 	FSEC Certification.	F.S. 377.705 NEC 110.3(B)
Abbreviations	BCAP - Broward County Administrative Provisions FBCB - Florida Building Code, Building Volume FBCEB - Florida Building Code, Existing Building Volume FBCR - Florida Building Code, Residential Volume F.S - Florida Statute FSEC - Florida Solar Energy Center NEC - National Electric Code	

1- PERMIT APPLICATION

105.3 Application for Permit Required. (Broward County Administrative Chapter 1)

Any qualified applicant desiring a permit to be issued by the Building Official as required, shall file an application therefore in writing on a form furnished by the Building Official for that purpose and application for permit will be accepted from only qualified applicants as set forth in Paragraph 105.3.1.

105.3.2 Application Form. (Broward County Administrative Chapter 1)

Each application for a permit, with the required fee, shall be filed with the Building department on a form furnished for that purpose and shall describe the land on which the proposed work is to be done, by legal description and address; shall show the use or occupancy of the building or structure; shall be accompanied by plans and/or specifications as required hereafter; shall state the value of the proposed work; as specified in Section 108.5.1, shall give such other information as reasonably may be required by the Building Official to describe the proposed work; and shall be attested by the qualified applicant. Application form shall be inscribed with the application date and the date of the Code in effect. Permit application forms shall be in the format prescribed by a local administrative board, if applicable, and must comply with the requirements of Section 713.135(6) & (7) Florida Statutes. The code in effect on the date of application shall govern the project.

2-BUILDING / EQUIPMENT LAYOUT

106.1.1 Submittal documents. (Broward County Administrative Chapter 1)

Construction documents, a statement of special inspections and other data shall be submitted in two or more sets of plans and/or specifications as described in Section 106.3 with each application for a permit. The application for permit shall be inscribed with the application date and the date of the Code in effect as set forth herein. The construction documents shall be prepared by a design professional where required by the Florida statutes and this Code. Where special conditions exist, the Building Official is authorized to require additional construction documents to be prepared by a design professional.

106.1.5 Information on construction documents. (Broward County Administrative Chapter 1)

Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted when approved by the Building Official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to this Code and the FFPC, relevant laws, ordinances, rules and regulations, as determined by the Building Official and/or fire marshal/fire code official.

3- STRUCTURAL DESIGN

Photovoltaic Panel Mounted Purlin & Solar Thermal Equipment

R4402.11.2 Rooftop mounted equipment.

All rooftop equipment and supports shall be secured to the structure in compliance with the loading requirements of Section R4403. The use of wood "sleepers" shall not be permitted.

R4403.1.2

Buildings, structures and all parts thereof shall be designed and constructed to be of sufficient strength to support the estimated or actual imposed dead, live, wind, and any other loads, both during construction and after completion of the structure, without exceeding the allowable materials stresses specified by this code.

R4403.7.8 Load combination.

The safety of structures shall be checked using the provisions of 2.3 and 2.4 of ASCE 7 with commentary.

Exception: Increases in allowable stress shall be permitted in accordance with ACI 530/ASCE 5/TMS 402 provided the load reduction factor of 0.75 of combinations 4 and 6 of ASCE 7 Section 2.4.1 shall not be applied.

R4403.9.1

Buildings and structures, and every portion thereof, shall be designed and constructed to meet the requirements of Section 6 of ASCE 7, as more specifically defined in this section, based on a 50-year mean recurrence interval.

R4403.9.2

Wind velocity (3-second gust) used in structural calculations shall be 140 miles per hour (63 m/s) in Broward County and 146 miles per hour (65 m/s) in Miami-Dade County.

R4403.9.3

All buildings and structures shall be considered to be in Exposure Category C as defined in Section 6.5.6.3 of ASCE 7.

SECTION R4403.10 HIGH VELOCITY HURRICANE ZONES — OVERTURNING MOMENT AND UPLIFT

R4403.10.1

Computations for overturning moment and uplift shall be based on ASCE 7.

R4403.10.2

Overturning and uplift stability of any building, structure or part thereof taken as a whole shall be provided, and be satisfied by conforming to the load combination requirements of ASCE 7.

EB SECTION 404 ALTERATION—LEVEL 2

EB 404.1 Scope. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

EB 404.2 Application. Level 2 alterations shall comply with the provisions of Chapter 6 for Level 1 alterations as well as the provisions of Chapter 7.

EB SECTION 707 STRUCTURAL

EB 707.1 General. Where alteration work includes installation of additional equipment that is structurally supported by the building or reconfiguration of space such that portions of the building become subjected to higher gravity loads as required by Tables 1607.1 and 1607.6 (High-Velocity Hurricane Zones shall comply with Table 1615 and Section 1615.2) of the Florida Building Code, Building, the provisions of this section shall apply.

EB 707.2 Reduction of strength. Alterations shall not reduce the structural strength or stability of the building, structure, or any individual member thereof.

Exception: Such reduction shall be allowed as long as the strength and the stability of the building are not reduced to below the Florida Building Code, Building levels.

EB 707.3 New structural members. New structural members in alterations, including connections and anchorage, shall comply with the Florida Building Code, Building.

EB 707.4 Existing structural members. Existing structural components supporting additional equipment or subjected to additional loads based on Florida Building Code, Building, Tables 1607.1 and 1607.6 (High-Velocity Hurricane Zones shall comply with Table 1615 and Section 1615.2) as a result of a reconfiguration of spaces shall comply with Sections 707.4.1 through 707.4.3.

EB 707.4.1 Gravity loads. Existing structural elements supporting any additional gravity loads as a result of additional equipment or space reconfiguration shall comply with the Florida Building Code, Building.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with not more than five dwelling units or sleeping units used solely for residential purposes where the existing building and its

alteration comply with the conventional light-frame construction methods as defined in Chapter 2.

4. ROOF DESIGN

BUILDING PERMITS

R4402.1.3

Permits outside these High-Velocity Hurricane Zone requirements shall comply with Section 105 of the Florida Building Code, Building. Permits within high wind areas shall be required for all work in connection with the application, repair or maintenance of any roofing component or any roofing assembly and/or any of its components except as otherwise permitted in Section 105 of the Florida Building Code, Building .

R4402.1.3.1

All new roofing construction, including recovering and reroofing, repair and maintenance shall have a uniform roofing permit application, as established by the authority having jurisdiction, completed and executed by a licensed contractor.

R4402.1.3.2

The uniform roofing permit shall include calculations per Section R4403 of this code, unless the roofing assembly is less than the height/pressure threshold allowed in the applicable protocols herein.

R4402.1.3.4

Attachments to the uniform roofing permit application shall include two copies of each of the following documents: properly executed OWNERS NOTIFICATION FOR ROOFING CONSIDERATIONS herein; the fire directory listing pages product approval cover sheet, product approval specific system description, product approval specific system limitation, product approval general limitations, and applicable detail drawings; the municipal permit application; other components approvals; and any other additional data reasonably required by the authority having jurisdiction needed to determine the integrity of the roofing system.

R4402.1.2.1

All roofing components, roofing systems and roofing assemblies for construction regulated by this code shall comply with this chapter. All roofing components, roofing systems and roofing assemblies shall have a valid and current, referred to as product approval hereinafter. In the event that the manufacturers published literature or instructions are in conflict with those of the product approval, the product approval shall prevail. Where items specifically and expressly addressed in this section are in conflict with the product approval, the provisions of this section shall prevail.

R4402.5.2

Fire-resistant roofing assemblies and coverings shall be provided on all structures. Fire classification of roofing assemblies and coverings shall be based on the exposure hazard as follows:

R4402.5.2.1

Class A. Zero feet to 20 feet (0 to 6.1 m) distance separation measured horizontally from the closest point of any building edge to the nearest point to an adjoining structure, and all buildings with occupation greater than 300 persons.

Exception: Brick, masonry, slate, clay or concrete roof tile and exposed concrete roof deck are considered to meet Class A roof covering provisions without testing.

R4402.5.2.2 Class B. All other structures, except as noted below

R4402.5.2.3 Class C. Structures not occupied by humans.



SECTION R4402.3 HIGH-VELOCITY HURRICANE ZONES — WEATHER PROTECTION

R4402.3.1 General.

Roof decks shall be covered with roof coverings secured to the building or structure in accordance with the provisions of this section. Roof coverings shall be designed, installed and maintained in accordance with this code and the manufacturer's installation instructions such that the roof covering shall serve to protect the building or structure. All roof coverings, roof systems and roof assemblies shall be designed and installed to resist the wind load requirements of Section R4403 of this code.

R4402.11.3.1

Permanently mounted rooftop equipment shall be installed to provide clearances, in accordance with Table R4402.11.3, to permit repairs, replacement and/or maintenance of the roofing system or any of its components.

TABLE R4402.11.3

ROOF MOUNTED EQUIPMENT HEIGHT REQUIREMENTS

WIDTH OF EQUIPMENT (in.)	HEIGHT OF LEGS (in.)
Up to 24	14
25 to 36	18

37 to 48	24
49 to 60	30
61 and wider	48

For SI: 1 inch = 25.4 mm



SECTION R4402.3

HIGH-VELOCITY HURRICANE ZONES — WEATHER PROTECTION

R4402.3.1 General.

Roof decks shall be covered with roof coverings secured to the building or structure in accordance with the provisions of this section. Roof coverings shall be designed, installed and maintained in accordance with this code and the manufacturer's installation instructions such that the roof covering shall serve to protect the building or structure. All roof coverings, roof systems and roof assemblies shall be designed and installed to resist the wind load requirements of Section R4403 of this code.

R4402.3.2 Flashings.

Flashings shall be installed in such a manner as to prevent moisture entering the wall through the joints in the coping, through moisture permeable materials, at intersections with the roof plane or at parapet wall penetrations. All roof flashing and terminations shall be designed and installed to resist the wind load requirements of Section R4403 of this code, and shall be in compliance with the provisions set forth in RAS 111.

R4402.3.2.1 Locations.

Flashings shall be installed at (1) wall and roof intersections (2) at gutters, (3) wherever there is a change in roof slope or direction this requirement does not apply to hip and ridge junctions, and (4) around roof openings. Where flashing is of metal, the metal shall conform to the provisions of RAS 111.

R4402.3.2.2 Membrane flashings.

All membrane flashing shall be installed according to the roof assembly manufacturer's published literature and in accordance with the provisions set forth in RAS 111.

R4402.3.2.3 Metal flashings and terminations.

Metal flashing and terminations shall be of the material and thickness described in Section R4402.6.6 and RAS 111 of this code, and shall be designed and installed in accordance with

RAS 111. Metal flashing shall be installed after the roofing felts have been laid and turned up the vertical surfaces, in compliance with the roofing assembly Product Approval.

R4402.3.2.3.1

Such felts shall be embedded in hot bitumen or an approved adhesive.

R4402.3.2.3.2

Metal surfaces shall be primed with an ASTM D 41 or ASTM D 43 primer, as appropriate and allowed to dry prior to receiving hot bitumen or cold adhesive.

R4402.3.2.4 Metal counterflashing.

Metal counterflashing shall be of the material and thickness described in Sections R4402.6.6 and RAS 111 of this code, and shall be installed in accordance with RAS 111.

R4402.3.2.4.1

Metal counterflashing shall be built into walls, set in reglets or applied as stucco type and shall be turned down over base flashing not less than 3 inches (76 mm).

R4402.3.2.4.2

Metal counterflashing shall be side lapped a minimum of 4 inches (102 mm).

R4402.3.2.4.3

Metal counterflashing, where set in reglets or surface-mounted, shall be waterproofed, in accordance with applicable application standards.

R4402.3.2.4.4

Where metal counterflashing is used as the means of sealing (such as a vented system) it shall be set in an approved sealant, sealed with an approved adhesive on the top flange and all joints shall be sealed with an approved sealant and lapped a minimum of 4 inches (102 mm).

R4402.11.3.1

Permanently mounted rooftop equipment shall be installed to provide clearances, in accordance with Table R4402.11.3, to permit repairs, replacement and/or maintenance of the roofing system or any of its components.

TABLE R4402.11.3

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Up to 24	14

25 to 36	18
37 to 48	24
49 to 60	30
61 and wider	48

For SI: 1 inch = 25.4 mm

5. SYSTEM COMPONENTS

5.130H

101.2 Scope. (Broward County Chapter 1)

The provisions of this Chapter shall govern the administration and enforcement of the FBC, Fire Protection Provisions of this Code and the FFPC and shall apply countywide in both incorporated and unincorporated areas of Broward County, Florida. The provisions of this Code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions:

- A. Detached one-and two-family dwellings and multiple single-family dwellings (town houses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the FBC, Residential.
- B. Existing buildings undergoing repair, alterations or additions and change of occupancy shall comply with Chapter 34 of this Code.

101.4.1 Electrical. (Broward County Administrative Chapter 1)

The provisions of Chapter 27 of the FBC, Building, Fire Protection Provisions of this Code and the FFPC shall apply to electrical systems. It shall be unlawful to perform or commence any installation of heat, light, power or low voltage systems (burglar alarms, central vacuums, communications, computer systems, fiber optics, fire alarms, telephone, television and all other systems 98 volts and less) either permanent or temporary wiring, or to make extensions and/or changes to existing installations of light, heat, power or low voltage systems, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto upon premises, inside, outside and/or attached to buildings or structures of any character without having filed an application and obtained an electrical permit. Electrical wiring, apparatus and equipment, and all installations for light, heat, power or low voltage systems as are required and/or regulated in provisions of Chapter 27 of the FBC, Building, Fire Protection Provisions of this Code and the FFPC shall be maintained in a safe condition and all devices and safeguards maintained in good working order.

101.4.4 Plumbing. (Broward County Administrative Chapter 1)

The provisions of the FBC, Plumbing, Fire Protection Provisions of this Code and the FFPC shall apply to every plumbing installation, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances when connected to a water or sewerage systems, lawn sprinkler systems and all aspects of a medical gas system. All Plumbing work shall be done in a workmanlike manner and in compliance with the provisions of this Code.

N1112.ABC.3.4

Solar water heating systems.

Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO 9806, Test Methods for Solar Collectors, and SRCC TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water heating systems should meet the following criteria:

1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
2. Be installed at an orientation within 45 degrees of true south.



106.1.1 Submittal documents. (Broward County Administrative Chapter 1)

Construction documents, a statement of special inspections and other data shall be submitted in two or more sets of plans and/or specifications as described in section 106.3 with each application for a permit. The application for permit shall be inscribed with the application date and the date of the Code in effect as set forth herein. The construction documents shall be prepared by a design professional where required by the Florida statutes and this Code. Where special conditions exist, the Building Official is authorized to require additional construction documents to be prepared by a design professional.

106.1.5 Information on construction documents. (Broward County Administrative Chapter 1)

Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted when approved by the Building Official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to this Code and the FFPC,

relevant laws, ordinances, rules and regulations, as determined by the Building Official and/or fire marshal/fire code official.



Florida Statutes 471.003(h)

(h) Any electrical, plumbing, air-conditioning, or mechanical contractor whose practice includes the design and fabrication of electrical, plumbing, air-conditioning, or mechanical systems, respectively, which she or he installs by virtue of a license issued under Chapter 489, under part I of Chapter 553, or under any special act or ordinance when working on any construction project which:

1. Requires an electrical or plumbing or air-conditioning and refrigeration system with a value of \$50,000 or less; and

2.a. Requires an aggregate service capacity of 600 amperes (240 volts) or less on a residential electrical system or 800 amperes (240 volts) or less on a commercial or industrial electrical system;



Florida Statutes 377.705

Solar Energy Center; development of solar energy standards.--

(3) DEFINITIONS.--

(a) "**Center**" is defined as the Florida Solar Energy Center of the Board of Governors.

(b) "**Solar energy systems**" is defined as equipment which provides for the collection and use of incident solar energy for water heating, space heating or cooling, or other applications which normally require or would require a conventional source of energy such as petroleum products, natural gas, or electricity and which performs primarily with solar energy. In such other systems in which solar energy is used in a supplemental way, only those components which collect and transfer solar energy shall be included in this definition.

(4) FLORIDA SOLAR ENERGY CENTER TO SET STANDARDS, REQUIRE DISCLOSURE, SET TESTING FEES.--

(a) The center shall develop and promulgate standards for solar energy systems manufactured or sold in this state based on the best currently available information and shall consult with scientists, engineers, or persons in research centers who are engaged in the construction of, experimentation with, and research of solar energy systems to properly identify

the most reliable designs and types of solar energy systems.

(b) The center shall establish criteria for testing performance of solar energy systems and shall maintain the necessary capability for testing or evaluating performance of solar energy systems. The center may accept results of tests on solar energy systems made by other organizations, companies, or persons when such tests are conducted according to the criteria established by the center and when the testing entity has no vested interest in the manufacture, distribution or sale of solar energy systems.

(c) The center shall be entitled to receive a testing fee sufficient to cover the costs of such testing. All testing fees shall be transmitted by the center to the Chief Financial Officer to be deposited in the Solar Energy Center Testing Trust Fund, which is hereby created in the State Treasury, and disbursed for the payment of expenses incurred in testing solar energy systems.

(d) All solar energy systems manufactured or sold in the state must meet the standards established by the center and shall display accepted results of approved performance tests in a manner prescribed by the center.



NEC Article 690 in its entirety



NEC 110.3(B) Installation and Use Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.

PROPOSED

Effective: May 15, 2009

Broward County Board of Rules and Appeals Policy #09-02

Subject: Administrative Guidelines for Processing Solar Thermal/Electric Permits

- A. Adopt the Solar Thermal and Solar Electric Matrix as a “BCBRA” Approved Guideline” establishing minimum code requirements regarding permit application submittals, thereby creating and instituting countywide uniformity.
- B. Building Departments shall establish an individual master permit for both Solar Thermal and Solar Electric installations to which applicable subsidiary categories are to be tied. Adding additional categories to the master permit may not require an additional permit obtained by a separate contractor, but will require a separate trade review in every instance.
- C. It is established that Certified Solar Contractors may obtain the master permit in either the Solar Thermal or Solar Electric categories. Certified or Registered Plumbing Contractors may obtain the master permit in the Solar Thermal category. Certified or Registered Electrical Contractors may obtain the master permit in the Solar Electric category. Registered Solar Contractors may obtain the master permit in the Solar Thermal category, restricted to residential installation only. Each of these contractors may perform all work identified in their individual scopes of work including the installation of appurtenances, apparatus, or equipment. However, such contractor shall subcontract all other work, which is specified as being the work in the trade of another contractor.
- D. Building Departments shall provide inspections of solar thermal and solar electric systems. More than one inspection may be performed during any inspection visit.

Solar Thermal

Building/Structure/Roofing – Time of installation and Final

Plumbing – Final

Solar Electric

Building/Structure/Roofing – Time of Installation and Final

Electrical – Rough and Final

Hybrid Systems (Complete PV Panel System combined with integral solar water panels)

Building/Structure/Roofing – Time of Installation and Final

Electrical – Rough and Final

Plumbing – Final

- E. The Board recommends Building Departments establish an inspection procedure to ensure all required inspections are completed within a specified two-hour timeframe.
- F. Recommend that Building Departments include an Owner notification on all solar thermal or solar electric permit applications, for existing structures, using substantially the language provided below:

“Installation of roof mounted photovoltaic or solar support systems typically require roof system penetrations to allow attachment to the structure, which may create additional long-term roof system maintenance requirements and/or jeopardize roof system manufacturer’s warranties. Roof mounted solar systems generally require removal and reinstallation of solar panels/arrays in order to perform routine roof system maintenance, repair or replacement.”

- G. The Board recommends Building Departments maintain accurate records regarding the type, number and the location of solar energy installations.
- H. Recommend and encourage Building Departments to expand access of renewable energy technology to the community, by not imposing needless or excessive oversight measures and through a program streamlined permitting and inspections.
- I. Recommend and encourage manufacturers to pursue optional product approval as a means of accelerating the permit approval process by ensuring a less complicated and less expensive process for consumers.
- J. BCCO to continue the ongoing awareness program designed to ensure all certified personnel understand the process of permitting and inspecting Solar Thermal and Solar Electric installations.
- K. BCCO will provide guidelines and assistance to the Solar Energy Industry, provide mediation, and assist with the BORA appeal process as necessary.

UNIFORM PERMIT SUBMITTAL MATRIX
for
SOLAR THERMAL AND SOLAR ELECTRIC
INSTALLATIONS
in
THE HIGH VELOCITY HURRICANE ZONE

General Requirement	Submittal Requirements	F.S./Code Section
1. Permit Application		
		FBCB 105.3 BCAP 105.3
2. Building/Equipment Layout Plan		
		FBCB 107 BCAP 106
3. Structural Design		
<ul style="list-style-type: none"> • Photovoltaic Roof Mounted Panel & Solar Thermal Equipment 	Submit signed and sealed drawings & design calculations by licensed Professional Engineer or Registered Architect showing: <ul style="list-style-type: none"> • Documentation/verification exposed solar panel equipment meet wind loads. • Documentation/verification support framing meets both uplift and lateral forces. • Design of connections for the wind loads. • Documentation/verification structural supports will accommodate additional dead loads. 	FBCB 1522.1 FBCEB 504 FBCB 1616.1.2 FBCEB 706 FBCB 1605 FBCB 1620.1 FBCB 1620.2 FBCB 1620.3 FBCB 1621 Note: Dead load compliance with the Exception contained in the FBCEB Section 706.2 may be demonstrated by Providing the Dead Load criteria from the original plans.
4. Roof Design		(FBCEB 708.3 References Sec. 1512-1525 FBC)
<ul style="list-style-type: none"> • Building Integrated Photovoltaic (BIPV) 	Submit a Uniform HVHZ Permit Application.	FBCB 1512.3 FBCB 1512.2.1 FBCB 1516.2
<ul style="list-style-type: none"> • Photovoltaic Roof Mounted Panel 	Submit a detail of the roof penetration flashing Submit clearance requirements.	FBCB 1514 FBCB 1522.3.1
<ul style="list-style-type: none"> • Solar Thermal 	Submit a detail of the roof penetration flashing. Submit clearance requirements.	FBCB 1514 FBCB 1522.3.1

5. System Components		
<ul style="list-style-type: none"> Solar Water Heater 	Submit FSEC Approval/Listing and System Reference Drawing.	FBCB 107 FBCEC R403.4.3 BCAP 101
<ul style="list-style-type: none"> <u>Solar Water Heater using a PV powered pump</u> 	<u>Submit listing for PV panel and pump.</u>	NEC Article 690
<ul style="list-style-type: none"> Solar Swimming Pool Water Heater 	Manufacturers selected system installation manual/detail and system specifications.	FBCB 107 BCAP 106
<ul style="list-style-type: none"> <u>Solar Swimming Pool Water Heater</u> 	<u>Submit FSEC Approval/Listing and System Reference Drawing.</u>	FBCB 107 F.S. 377.705 BCAP 101
<ul style="list-style-type: none"> Photovoltaic System Electrical Engineer Requirements 	Plans must be signed and sealed by a Professional Engineer if: a.) The system has a value of more than \$50,000, or; b.) The systems has an aggregate service capacity of 600 amperes (240 volts) or more for a residential electrical system, or; c.) The system has an aggregate service capacity of 800 amperes (240 volts) or more for a commercial or industrial electrical system.	F.S. 471.003(h)
<ul style="list-style-type: none"> Statutory Requirement 	FSEC will generate a System Certification Approval Form.	F.S. 377.705
<ul style="list-style-type: none"> Electrical Diagram 	Submit electrical diagram designed in accordance to the National Electrical Code Article 690 Solar Photovoltaic Systems and include components interconnects, conductor types and sizes, conduit types and sizes, disconnects, and point of interconnection.	NEC Article 690
<ul style="list-style-type: none"> Component Documentation 	FSEC Certification.	F.S. 377.705
Abbreviations	BCAP - Broward County Administrative Provisions FBCB - Florida Building Code, Building Volume FBCEB - Florida Building Code, Existing Building Volume FBCEC – Florida Building Code, Energy Conservation Volume F.S - Florida Statute FSEC - Florida Solar Energy Center NEC - National Electric Code	

ROOF PENETRATIONS

FBC 2017 6th Edition

ROOFING MAINTENANCE. The work of extending the longevity of a roofing system through preventative care, such as refilling pitch pans, applying coatings, re-graveling, resurfacing and re-caulking.

Section 1514 Weather Protection

1514.2.5 Roof penetration flashing.

1514.2.5.1 All pipes shall be flashed with approved lead sleeve-type, pitch pans or other approved methods detailed in the roofing system assembly product approval. Lead flashing shall not be less than 2.5 pounds per square foot (12.2 kg/m²). Flanges shall be a minimum of 4 inches (102 mm).

1514.2.5.2 Other roof penetrations shall be suitably flashed with curbs, collars, pitch pans, in compliance with RAS 111 or an approved method, in compliance with the roofing system assembly product approval.

1514.2.5.3 No roof penetration shall be located in roof valleys.



One North University Drive
Suite 3500-B
Plantation, Florida 33324

Phone: 954-765-4500
Fax: 954-765-4504

www.broward.org/codeappeals

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—ESTABLISHED 1971—

TO: All Building Officials
FROM: James DiPietro, Administrative Director
DATE: May 14, 2009
SUBJECT: Rooftop Clearance Requirements-Section 1522.3, 1522.3.1 and the FRC Section 4402.11.3 and 4402.11.3.1

At its meeting of May 14, 2009, the Board approved an interpretation of the 2007 FBC Sections 1522.3, 1522.3.1 and the FRC Sections 4402.11.3 and 4402.11.3.1

The ROOFTOP CLEARANCE REQUIREMENTS FOR PERMANENTLY MOUNTED EQUIPMENT as specified in FBC Section 1522.3, 1522.3.1 and the FRC Section 4402.11.3, 4402.11.3.1 are not intended to be applied to rooftop mounted solar thermal or solar electric installations.

EFFECTIVE DATE: MAY 15, 2009

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

ITEM 4

2020 Thomas St
Hollywood, FL 33020



Phone: 954-923-5100
Fax: 954-923-5395
CCC018280 & CCC1328315

New Roofs Re-Roofing Repairs Maintenance Inspections

02/27/2020

To: Broward County Board of Rules and Appeals:

Request to add to agenda for the topic of: **Consideration for permit paperwork reduction, specifically product approvals / notice of acceptance (NOA's).**

Many product approvals / NOA's consist of numerous systems within each individual NOA and are +/- 10 to 40 plus pages per NOA.

Many permit applications require the inclusion or attachment of several NOA's.

Many cities require two copies of each required NOA, which may lead a permit application to easily have 40 – 200 plus pages of NOA's attached to each application.

Miami-Dade product approvals / NOA's are available online for anyone, plan review, inspectors, contractors or citizens to review or access.

The goal of this discussion would be to determine if:

- (A) The cities may maintain a list of current product approvals / NOA's and not require the attachment of these additional documents to each permit application. The cities should still require the inclusion of the product approval number and the product approval expiration date.

AND/OR

- (B) If the Cities find it unfeasible to implement the above, is it possible to only require the product approval / NOA **pages that are page specific to the system or product actually being applied?** This could reduce a sample 39 page NOA to only 3-4 pages required for submittal.

Additional Information

CHAPTER 10 MEANS OF EGRESS

Hoistway opening protection. Elevator hoistway openings shall be protected in accordance with Section 3006.2.1

CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

1507.1.1.2 Underlayment for concrete and clay tile. Underlayment for concrete and clay tile shall comply with **1507.3.3** one of the following:

- ~~1. The entire roof deck shall be covered with an approved self-adhering polymer modified bitumen underlayment complying with ASTM D1970 installed in accordance with both the underlayment manufacturer's and roof covering manufacturer's installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed.~~
- ~~2. A minimum 4 inch wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970, installed in accordance with the manufacturer's instructions for the deck material, shall be applied over all joints in the roof decking. An underlayment complying with Section R905.3.3 shall be applied over the entire roof over the 4 inch wide (102 mm) membrane strips.~~
- ~~3. A minimum 3 3/4 inch wide (96 mm) strip of self-adhering flexible flashing tape complying with AAMA 711-13, Level 3 (for exposure up to 176° F (80° C), installed in accordance with the manufacturer's instructions for the deck material, shall be applied over all joints in the roof decking. An underlayment complying with Section 1507.3.3 shall be applied over the entire roof over the 4 inch wide (102 mm) flashing strips.~~
- ~~4. Two layers of ASTM D226 Type II or ASTM D4869 Type III or Type IV underlayment shall be installed as follows: Apply a 19 inch (483 mm) strip of underlayment felt parallel to and starting at the eaves, fastened sufficiently to hold in place. Starting at the eave, apply 36-inch wide (914 mm) sheets of underlayment, overlapping successive sheets 19 inches (483 mm), end laps shall be 6 inches and shall be offset by 6 feet. The underlayment shall be attached to a nailable deck with corrosion-resistant fasteners with one row centered in the field of the sheet with a maximum fastener spacing of 12 inches (305 mm) o.c., and one row at the end and side laps fastened 6 inches (152 mm) o.c. Underlayment shall be attached using annular ring or deformed shank nails with metal or plastic caps with a nominal cap diameter of not less than 1 inch. Metal caps are required where the ultimate design wind speed, V_{ult} , equals or exceeds 170 mph. Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a minimum thickness of 0.010 inch. Minimum thickness of the outside edge of plastic caps shall be 0.035 inch. The cap nail shank shall be not less than 0.083 inch for ring shank cap nails. Cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch into the roof sheathing.~~

Exception: Compliance with Section 1507.1.1.2 is not required where a fully adhered

underlayment is applied in accordance with Section 1507.3.3.

(R- Ch. 15- Comment #2)

Revise Section 1510.11

1510.11 Cable- and Raceway-Type Wiring Methods. Cable- and raceway-type wiring methods installed on rooftops, ~~when and~~ not encased in a structural concrete ~~environment~~, shall be supported above the roof system and covering. Cable- and raceway-type wiring methods installed in locations under metal-corrugated sheet roof decking shall be supported so there is not less than 38 mm (1 1/2 in.) measured from the lowest surface of the roof decking to the top of the cable or raceway. A cable or raceway shall not be installed in concealed locations in metal-corrugated sheet decking-type roof.

(R- Ch. 15- Comment #3)

SECTION 1525
HIGH-VELOCITY HURRICANE ZONES—UNIFORM PERMIT APPLICATION

Florida Building Code 7th Edition (2020)
High-Velocity Hurricane Zone Uniform Permit Application Form

Section A (General Information)

Master Permit No. _____ Process No. _____

Contractor's Name _____

Job Address _____

ROOF CATEGORY

- | | | |
|---|---|--|
| <input type="checkbox"/> Low Slope | <input type="checkbox"/> Mechanically Fastened Tile | <input type="checkbox"/> Mortar/Adhesive Set Tiles |
| <input type="checkbox"/> Asphaltic Shingles | <input type="checkbox"/> Metal Panel/Shingles | <input type="checkbox"/> Wood Shingles/Shakes |
| | <input type="checkbox"/> Prescriptive BUR-RAS 150 | |

ROOF TYPE

- | | | | | |
|-----------------------------------|---------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <input type="checkbox"/> New roof | <input type="checkbox"/> Repair | <input type="checkbox"/> Maintenance | <input type="checkbox"/> Reroofing | <input type="checkbox"/> Recovering |
|-----------------------------------|---------------------------------|--------------------------------------|------------------------------------|-------------------------------------|

ROOF SYSTEM INFORMATION

Low Slope Roof Area (SF) _____ Steep Sloped Roof AREA (SF) _____ Total (SF) _____

Florida Building Code 7th Edition (2020)
High-Velocity Hurricane Zone Uniform Permit Application Form

Section D (Steep Sloped Roof System)

Roof _____ System _____ Manufacturer: _____
Notice of Acceptance

Number: _____

Minimum Design Wind Pressures, If Applicable (From RAS 127 or Calculations):

Zone 1: Zone 2e Zone 2n: Zone 2r: Zone 3e: Zone 3r:

Florida Building Code 7th Edition (2020)
High-Velocity Hurricane Zone Uniform Permit Application Form

Section E (Tile Calculations)

For Moment based tile systems, choose either Method 1 or 2. Compare the values for M_r with the values from M_r . If the M_r values are greater than or equal to the M_r values, for each area of the roof, then the tile attachment method is acceptable.

Method 1 "Moment Based Tile Calculations Per RAS 127"

(Zone 1: x? =) – Mg: = M_{r1} Product Approval M_r
 (Zone 2e: x? =) – Mg: = M_{r2e} Product Approval M_r
 (Zone 2n: x? =) – Mg: = M_{r2n} Product Approval M_r
 (Zone 2r: x? =) – Mg: = M_{r2r} Product Approval M_r
 (Zone 3e: x? =) – Mg: = M_{r3e} Product Approval M_r
 (Zone 3r: x? =) – Mg: = M_{r3r} Product Approval M_r

Method 2 "Simplified Tile Calculations Per Table Below" Required Moment of Resistance (M_r) From Table Below Product Approval M_r

M _r required Moment Resistance*					
Mean Roof Height Roof Slope	15	20	25	30	40
2:12	34.4	36.5	38.2	39.7	42.2
3:12	32.2	34.4	36.0	37.4	39.8
4:12	30.4	32.2	33.8	35.1	37.3
5:12	28.4	30.1	31.6	32.8	34.9
6:12	26.4	28.0	29.4	30.5	32.4
7:12	24.4	25.9	27.1	28.2	30.0

*Must be used in conjunction with a list of moment based tile systems endorsed by the Broward County Board of Rules and Appeals.

For Uplift based tile systems use Method 3. Compared the values for F' with the values for F_r . If the F' values are greater than or equal to the F_r values, for each area of the roof, then the tile attachment method is acceptable

Method 3 "Uplift Based Tile Calculations Per RAS 127"

(Zone 1: x L = x w: =) – W: x cos r = F_{r1} Product Approval F'
 (Zone 2e: x L = x w: =) – W:
 x cos r = F_{r2e} Product Approval F'
 (Zone 2n: x L = x w: =) – W:
 x cos r = F_{r2n} Product Approval F'
 (Zone 2r: x L = x w: =) – W:
 x cos r = F_{r2r} Product Approval F'

(Zone 3e: _____ x L _____ = _____ x w: = _____) - W: _____ x
cos r _____ = F_{r3e} Product Approval F' _____

(Zone _____ 3r: _____ x L _____ = _____ x w: = _____) - W: _____ x cos r = F_{r3r}
Product Approval F' _____

(R- Ch. 15- Comment #1)

CHAPTER 16 STRUCTUAL DESIGN

1626.1

All parts or systems of a building or structure envelope such as, but not limited, to exterior walls, roof, outside doors, skylights, glazing and glass block shall meet impact test criteria or be protected with an external protection device that meets the impact test criteria. Test procedures to determine resistance to wind-borne debris of wall cladding, outside doors, skylights, glazing, glass block, shutters and any other external protection devices shall be performed in accordance with this section.

Exception: The following structures or portion of structures shall not be required to meet the provisions of this section:

- a. Roof assemblies for screen rooms, porches, canopies, etc., attached to a building that do not breach the exterior wall or building envelope and have no enclosed sides other than screen.
- b. Soffits, soffit vents and ridge vents. Size and location of such vents shall be detailed by the designer and shall not compromise the integrity of the diaphragm boundary.
- c. Vents in a garage with four or fewer cars. Size and location of such vents shall be detailed by the designer and shall not exceed the minimum required area by more than 25 percent.
- d. Exterior wall or roof openings for wall- or roof-mounted HVAC equipment.
- e. Openings for roof-mounted personnel access roof hatches.
- f. Storage sheds that are not designed for human habitation and that have a floor area of 720 square feet (67 m²) or less are not required to comply with the mandatory windborne debris impact standards of this code.
- g. Louvers as long as they properly considered ASCE 7 in the design of the building, and that meets the requirement of 1626.5.3
- h. Buildings and structures for marinas, cabanas, swimming pools, and greenhouses.