



FLORIDA BOARD OF PROFESSIONAL ENGINEERS

RICK SCOTT, GOVERNOR

CHARLES LIEM, SECRETARY
DEPARTMENT OF BUSINESS AND
PROFESSIONAL REGULATION

June 16, 2011

Board Members:

Raymond Manucy
352A Tall Pines Road
W. Palm Beach, FL 33413

John C. Burke, P.E.

CHAIR
(ELECTRICAL)
1/9/04 – 10/31/10

RE: Kristina Daugherty, P.E
Complaint No. 2010059945

H. Dann Wallis, P.E.

VICE CHAIR
(INDUSTRIAL)
10/14/08 – 10/31/11

Christian S. Bauer, Ph.D., P.E.

(INDUSTRIAL)
4/20/05 – 10/31/08

Dear Mr. Manucy:

This letter is to inform you that an Administrative Complaint has been filed against Ms. Kristina Daugherty, P.E. by the Florida Engineers Management Corporation. Enclosed please find a copy of the Administrative Complaint.

David O. Charland, P.E., S.I.

(STRUCTURAL)
4/20/05 – 10/31/08

You will be notified of the progress of the case. We may contact you in the future if your testimony is needed at a Formal Hearing.

R. Scott Batterson, P.E.

(CIVIL)
3/15/10 – 10/31/13

Sincerely,

Jonathan F. Earle, Ph.D., P.E.

(EDUCATIONAL)
3/15/10 – 10/31/13

John J. Rimes, III
Prosecuting Attorney

Bijay Panigrahi, Ph.D., P.E.

(CIVIL)
10/14/08 – 10/31/11

Warren G. Hahn, P.E.

(MECHANICAL)
3/15/10 – 10/31/13

JR/sm
Enclosures

Nola Garcia

(PUBLIC)
2/12/08 – 10/31/10

Mary M. Young

(PUBLIC)
10/14/08 – 10/31/11

Vacant

(CIVIL)

Carrie Flynn

EXECUTIVE DIRECTOR

STATE OF FLORIDA
FLORIDA BOARD OF PROFESSIONAL ENGINEERS

FILED	
<small>Department of Business and Professional Regulation Deputy Agency Clerk</small>	
CLERK	Evette Lawson-Proctor
Date	6/15/2011
File #	

FLORIDA BOARD OF PROFESSIONAL
ENGINEERS,

Petitioner,

v.

KRISTINA S. DAUGHERTY, P.E.,

Respondent,

FILED
Florida Engineers Management Corporation
Clerk

CLERK
DATE

Sandee Marge
6/15/11

FEMC Case No. 2010059945

ADMINISTRATIVE COMPLAINT

COMES NOW the Florida Engineers Management Corporation (FEMC) on behalf of Petitioner, Florida Board of Professional Engineers, hereinafter referred to as "Petitioner," and files this Administrative Complaint against KRISTINA S. DAUGHERTY, P.E., hereinafter referred to as "Respondent". This Administrative Complaint is issued pursuant to Sections 120.60 and 471.038, Florida Statutes. Any proceeding concerning this complaint shall be conducted pursuant to Section 120.57, Florida Statutes. In support of this complaint, Petitioner alleges the following:

1. Petitioner, Florida Board of Professional Engineers, is charged with regulating the practice of engineering pursuant to Chapter 455, Florida Statutes. This complaint is filed by the Florida Engineers Management Corporation (FEMC) on behalf of Petitioner. FEMC is charged with providing administrative, investigative, and prosecutorial services to the Florida Board of Professional Engineers pursuant to Section 471.038, Florida Statutes (1997).

2. Respondent is, and has been at all times material hereto, a licensed professional engineer in the State of Florida, having been issued license number PE 68455. Respondent's last known address is 1117 Covington St, Oviedo, FL 32765.

3. On November 5, 2010 Respondent sealed and signed two sheets of drawings entitled "BMP003, A/C HOLD DOWN CLIP, BMP INTERNATIONAL INC" (Installation Drawings). The Installation Drawings include a statement by Respondent that they are based upon design calculations done in accordance with "...the Florida Building Code 2007 Edition with 2009 Amendments and ASCE 7-05 Chapter 16 for wind loads and velocities of 146 MPH and 155 MPH. An Importance factor used in the design $I=1$ and Exposure C as critical were used in the design."

4. The Installation Drawings details are materially deficient as follows:

A. The Installation Drawings fail to address the requirements of 1509.7 of the Florida Building Code: "Roof mounted mechanical units shall be mounted on curbs raised a minimum of 8 inches (203 mm) above the roof surface, or where roofing materials extend beneath the unit, on raised equipment supports providing a minimum clearance height in accordance with Table 1509.7."

B. The Installation Drawings fail to address the requirements of 1522.3.1 of the Florida Building Code for installations in the High Velocity Hurricane Zone (HVHZ): "Permanently mounted rooftop equipment shall be installed to provide clearances, in accordance with Table 1522.3, to permit repairs, replacement and/or maintenance of the roofing system or any of its components."

C. Although Detail A-1 on Sheet 1 of the Installation Drawings shows attachment to a wood attachment to a wood supporting member, Sheet 1 fails to note that 1522.2 of the Florida Building Code bans the use of "wood sleepers" for the support of rooftop mounted equipment in the HVHZ.

D. Although Detail A-1 on Sheet 1 of the Installation Drawings indicates anchorage to a wood supporting member by means of #14 FLAT HEAD WOOD SCREW INSTALLATION ANCHOR, General Note 5 on Sheet 2 specifies #10 WOOD SCREWS for attachment to wood supports.

E. Although Detail B-1 on Sheet 1 of the Installation Drawings indicates a 1-1/4" MIN EMBEDMENT in concrete, General Note 4 on Sheet 2 specifies a MINIMUM EMBEDMENT OF 1-3/4".

F. The MIN 3 THREADS ENGAGEMENT of the TEKS screw in the steel supporting member specified in Detail C-1 on Sheet 1 of the Installation Drawings cannot be achieved because the steel "wall thickness" is insufficient. General Note 11-D on Sheet 2 specifies a MINIMUM WALL THICKNESS OF 33 MILS (0.033") for steel. 1/4" TEKS/3 screws are available with spaced threads (14 per inch or 0.0714" on centers) or with fine threads (20 per inch or 0.050" on centers).

G. The MIN 3 THREADS ENGAGEMENT of the TEKS screw in the aluminum supporting member specified in Detail D-1 on Sheet 1 of the Installation Drawings cannot be achieved because the aluminum "wall thickness" is insufficient. General Note 11-C on Sheet 2 specifies a MINIMUM WALL THICKNESS OF 0.125" for aluminum.

H. Although Details A-1, B-1, C-1 and D-1 on Sheet 1 of the Installation Drawings all specify ¼" TEKS screws, the slotted holes in the 1" and 2" clips shown on Sheet 1 are only 0.125" wide.

I. General Note 2 on Sheet 2 of the Installation Drawings requires a minimum equipment weight of 150 lbs and a maximum size of 4 ft x 4 ft x 4 ft. This effectively limits the magnitude of the design horizontal wind force but it fails to recognize the significance of the minimum equipment width in determining the magnitude of the vertical restraining force necessary to resist overturning. To ensure that the configuration of a specific piece of equipment is consistent with design assumptions relative to wind loads it is necessary to recognize and assign limiting values to two parameters. The first parameter which defines the magnitude of the design horizontal wind force is equal to the product of the equipment height and maximum width. The second parameter which defines the magnitude of the necessary vertical restraining force at the windward side of the equipment can be approximated (if equipment weight is ignored) by the product of the equipment height multiplied by the maximum equipment width and divided by the minimum equipment width.

J. General Note 4 on Sheet 2 specifies, for attachment to concrete, TAPCONs with a rated tensile strength of 460 lbs, a minimum embedment of 1-3/4", minimum edge distance of 2.5" and minimum center to center distance of 3". General Note 11B specifies a minimum concrete compressive strength of 2700 psi. Detail B-1 specifies ¼" ITW TAPCON INSTALLATION ANCHORS. Product Approval FL 13328 for Tapcon Masonry Fasteners indicates a rated tension capacity in excess of 460 lbs for both ¼" carbon steel and stainless steel anchors in 3192 psi concrete. By failing to adequately specify which of the two types of

steel are to be used, it is likely that the inappropriate carbon steel Tapcon would be used due to its lower cost.

6. In a number of cases where the combination of height and basic wind speed is deemed acceptable on the *Installation Drawings*, details of anchorage to supporting members specified on that *Installation Drawings* are not all in compliance with the requirements of the 2007 Florida Building Code with the 2009 Amendments as was stated by Respondent on the *Installation Drawings*. Specifically, on the *Installation Drawings*:

A. The connection of the #10 wood screws to the supporting wood member as shown in Detail A-1 lacks the capacity in shear to safely resist design wind loads.

B. The calculated shear in the carbon steel TAPCONS as shown in Detail B-1 exceeds that permitted by Product Approval FL 13228.

C. The connection of the ¼" TEKS screws to the 33 mils thick wall of the supporting steel member as shown in Detail C-1 lacks the capacity to safely resist pullout under design wind loads.

7. The Board has adopted Responsibility Rules of Professional Engineers (Responsibility Rules). These Rules are contained in Chapter 61G15-30 to Chapter 61G15-36, Fla. Administrative Code. Professional Engineers who perform services covered by the Responsibility Rules are required to comply with the Rules. Included in the Responsibility Rules are Rules governing Product Evaluation Documents that are produced by a Professional Engineer.

8. Section 471.033(1)(g), Florida Statutes, provides that an engineer is subject to discipline for engaging in negligence in the practice of engineering. Rule 61G15-19.001(4), Fla. Admin Code, provides that negligence constitutes "failure by a professional engineer to utilize

due care in performing in an engineering capacity or failing to have due regard for acceptable standards of engineering principles.” Rule 61G15-19.001(4) also provides that “[f]ailure to comply with the procedures set forth in the Responsibility Rules as adopted by the Board of Professional Engineers shall be considered as non-compliance with this section unless the deviation or departures therefrom are justified by the specific circumstances of the project in question and the sound professional judgment of the professional engineer.”

9. The Installation Drawings are “Product Evaluation Documents” as that term is defined in Rule 61G15-36.002(2), Florida Administrative Code. Such documents are “[e]ngineering documents that define procedures, materials, devices, fabrication, and methods of construction and installation of a product, or standardized group of products, through product evaluation or rational analysis, with the objective of obtaining approval from the authority having jurisdiction of that product for installation. Product evaluation documents shall be generic and do not include documents prepared for a site specific project.” (Rule 61G15-36.002(2))

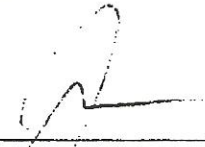
10. Product Evaluation Documents such as the Installation Documents must conform to the General Responsibility standards for such documents which is set out in Rule 61G15-36.001. That Rule requires that the Installation Documents, as Product Evaluation Documents, must describe a product that “...will comply with the building codes listed in the documents when used in accordance with the product evaluation documents.” For the reasons set forth in Paragraphs 2-6 above, the Installation Documents are materially deficient in that (1) the product described thereon does not comply with the Building Codes listed on the Installation Documents by Respondent under all specified loading conditions, and (2) the details on the Installation Documents contain errors and inconsistencies and call out directions that violate the applicable building code.

11. Based on the foregoing, Respondent is charged with violating Section 471.033(1) (g), Florida Statutes, by engaging in negligence in the practice of engineering.

WHEREFORE, the Petitioner respectfully requests the Board of Professional Engineers to enter an order imposing one or more of the following penalties: permanent revocation or suspension of the Respondent's license, restriction of the Respondent's practice, imposition of an administrative fine, issuance of a reprimand, placement of the Respondent on probation, the assessment of costs related to the investigation and prosecution of this case, other than costs associated with an attorney's time, as provided for in Section 455.227(3), Florida Statutes, and/or any other relief that the Board deems appropriate.

SIGNED this 3rd day of June, 2011.

Carrie Flynn
Executive Director


BY: John J. Rimes, III
Prosecuting Attorney

COUNSEL FOR FEMC:

John J. Rimes, III
Prosecuting Attorney
Florida Engineers Management Corporation
2507 Callaway Road, Suite 200
Tallahassee, Florida 32303
Florida Bar No. 212008
JR/sm
PCP DATE: MAY 17, 2011
PCP Members: Rebane & Hahn

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was furnished to Kristina Daugherty, 1117 Covington St, Oviedo, FL 23765, by certified mail, on the 16th of June, 2011.

