TEST REPORT
FASTENER WITHDRAWAL RESISTANCE

Test Protocol TAS 105-11
Florida Building Code 2014

Date: March 8, 2017

Report Prepared For:
Palm Beach State College
4200 Congress Avenue – MS #35
Lake Worth, FL 33461

Project Name: Palm Beach State College
Address: 4200 Congress Avenue
City / State: Lake Worth, FL 33461
Roof: Burt Reynolds Student Center

ACRC #: 17-0116 FW – BRSC
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TESTING LABORATORY

Atlantic & Caribbean Roof Consulting
TESTING & ENGINEERING SERVICES

1839 NW 29th Street
Oakland Park, FL 33311

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MIAMI-DADE TESTING LABORATORY
CERTIFICATION # 16-0811.09

FLORIDA ENGINEERING FIRM
CERTIFICATE OF AUTHORIZATION #9036
TAS 105
ACRC #: 17-0116 FW – BRSC

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ROOF AREA

BUILDING/ROOF SYSTEM INFORMATION:
Nominal Length: 200 FT  Nominal Width: 185 FT  Nominal Area: 305.77 SQ

Parapet: No [ ] Yes [X]

Minimum Parapet Height: 13 INCHES

Maximum Parapet Height: 13 INCHES

Parapet Continuous Around Perimeter: No [ ] Yes [X]

Mean Deck Height: 15 FEET

DECK:
New [ ] Existing [X]

DECK MATERIAL:
Steel [X] LWC [X] Concrete [ ]

Wood [ ] CWF / Tectum [ ] Gypsum [ ] Other: 

COMPONENT TO BE SECURED:
Insulation: [ ]

FASTENER TYPE / MANUFACTURER:
#15 XHD

Pre-Drilled: No [ ] Yes [ ]

Self Driller: No [ ] Yes [X]

Drill Bit Size: __________ " dia

Hole Depth: __________ "

Tool: DeWalt

Speed: 0-1200 rpm's
NUMBER OF SAMPLES:  
N = 25

CALCULATE DEGREES OF FREEDOM:  
V = N - 1  
24

SELECT ESTIMATOR VALUE "t" (TABLE 1)  
(BASED ON STATISTICAL 95% PROBABILITY)

Tvp = 2.064

CALCULATE MEAN: (FM)

FM = 1/N(SUM Fi) = 425.60

CALCULATE STANDARD DEVIATION: (SF)

SF = SQRT(((1/N-1)(SUM(Fi-FM)^2))

SF = 157.675

CHECK % DEVIATION: (PD)

PD = 37.048 %

PER TAS 105-11 (FBC 2114 & FM 1-52)

F2014 = FM - (Tvp)(SF/SQRT N)

F2014 = 360.5

CALCULATE MCRF: (MINIMUM CHARACTERISTIC RESISTANCE FORCE)

MCRF14 = F2014 = 360.5
TEST SUMMARY

FIELD DATA:
Tested Deck Material: Steel
Fastener Type: #15 XHD

Number of Test Samples (N=): 25
Test Apparatus: DMD-2000

TABULATED RESULTS:

<table>
<thead>
<tr>
<th>PLAN IDENTIFIER &amp; SAMPLE #</th>
<th>INITIAL FAILURE LOAD (LBF)</th>
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</table>

TEST RESULTS

MINIMUM CHARACTERISTICS RESISTANCE FORCE (MCRF)  F' = 360.5 LBF

(Minimum Fastener Design Value)
TAS 105

FASTENER WITHDRAWAL RESISTANCE

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PURPOSE

Testing to determine the strength of a deck and the Predicted Design Value for Fastener Pull-Out Resistance. This value is calculated using statistical analysis based on 95% probability. The test procedures used in this TAS-105 provides a means of determining whether a particular mechanical fastener, when used to attach any Roofing Component to a specific substrate, provides sufficient resistance to static uplift force to meet the wind load requirements for this code for a specific building.

OBSERVATIONS

The deck in the sample locations appeared in satisfactory condition.

CONCLUSION

Based on the TAS-105 “Fastener withdrawal testing” this deck has met the requirements for resistance in accordance with the Florida Building Code (2014) and the afore-mentioned TAS-105 protocol.

APPROVED LABORATORY ENGINEER

RANDALL FOWLER, P.E.
No. 51156
ENGINEER
TAS 105

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ROOF PLAN

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KEY
# Full Locations