

**Code Evaluation Research Report**

**Report Holder:**

Vault Structures, Inc.  
3640 Work Drive  
Fort Meyers, Fl 33916  
(239) 332-3270  
[www.vaultstructures.com](http://www.vaultstructures.com)

**3.0 Description:**

**3.1 Model**

DS-450 Customer Unit kiosk

**Evaluation Subject:**

Motor Banking Customer Unit Model DS-450

**3.2 General**

This unit is a steel encased mechanical receiving station for a delivery system using a pneumatic tube system. The system sends a carrier between this unit and the teller station.

**1.0 Evaluation Scope:**

**1.1 Code Evaluation Criteria:**

**1.1.1** 2007 Florida Building Code (2007 FBC) with 2009 supplement.

**3.3 Unit Nominal Overall Dimensions:**

Length: 22" (55.9 cm)  
Width: 8.5" (21.6 cm)  
Height: 61" (154.9 cm)

**1.1.2** Minimum Design Loads for Building and other structures, ASCE 7-05

**1.1.3** Florida Product Rule 9B-72

**3.4 Components:**

**1.2 Properties Evaluated:**

Structural attachment to concrete support.

**3.4.1 Stanchion Unit – Base of unit:**

Material: Steel  
Yield Strength: 50 ksi minimum  
( $3.45 \times 10^8$  n/m<sup>2</sup>m)  
Thickness: 11 Gauge (3.04 mm)  
Length: 16" (40.6 cm)  
Width: 8 5/8" (14.3 cm)  
Height: 36 1/2" (92.7 cm)

**1.3 Quality Assurance Program:**

Quality Assurance program review

**3.4.2 Anchor:**

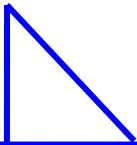
Manufacturer: Hilti Inc. (USA)  
Model: Kwik Bolt III  
Item Number#: 282545  
Material: 304 Stainless Steel  
Diameter: 3/8" (9.5 mm)  
Length: 5" (12.7 cm)  
Miami-Dade NOA#: 06-0813.13

**1.4 Product Approval Scope Analysis**

Determine applicability within scope definitions

**2.0 Evaluated Uses:**

A free standing, exterior, unoccupied, mechanical structure.



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**3.4.3 Concrete Support:**

Material: Concrete  
Compressive Strength  
Minimum : 3000 psi (2.07 x 10<sup>7</sup> n/m<sup>2</sup>)  
Thickness: 6" Minimum (15.2cm)

(Design of concrete support not part of this evaluation)

**4.0 Installation:**

1. The unit shall be attached to the concrete Support with a minimum of Four (4) anchors.
2. Place Stanchion Unit onto concrete covering hole for pneumatic tube and wiring.
3. Drill 3/8" (9.5 mm) Diameter holes in concrete at location of holes in stanchion.
4. Hilti Kwik Bolt III Anchors shall have a minimum embedment of 3 3/4" (9.5 cm) and an minimum edge distance of 2 1/2" (6.4 cm)
5. Clean Drill hole
6. Place Hilti Kwik Bolt III into hole.
7. Tap in place so that six threads are below surface of stanchion.
8. Tighten bolt.

Refer to the Manufacturer's installation instructions for a supplemental guide.

**5.0 Findings:**

**5.1 Structural Properties:**

This unit is designed to be attached to a concrete support.

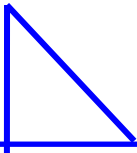
The unit attachment shall comply with 2007 Florida Building Code (with 2009 supplement) Section 1609.1 (Minimum Wind Loads for Structures), and Mechanical Code Section 301.12.

The unit installed per section 5.0 will resist wind loads per the following ASCE 7-05 design criteria:

Basic Wind Speed	150 mph (241.4 kph)
Region:	Hurricane prone zone
Terrain Exposure :	C
Maximum Elevation:	15 feet (4.57 m)
Category:	I
Importance Factor:	0.87
Topographic Factor:	1.0
Directionality Factor:	1.0
Gust Factor:	0.85

**5.2 Quality Assurance Program:**

Vault Structures has a Production Quality Assurance Program that addresses incoming materials documentation, production quality, inspection and unit testing. Shipping documentation is maintained in the job files.



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**5.3 Florida State Product Approval:**

**5.3.1 Florida Product Approval Scope:**

The Florida mandatory Product Approval system is limited to products and systems which comprise the building envelope and structural frame for compliance to the structural requirements of the Florida Building Code per rule 9B-72.005.

**5.3.2 Florida Product Approval Scope Analysis:**

The DS-450 as evaluated for use as a free standing exterior, unoccupied, mechanical structure as listed in section 2.0 of this report and is not integral to the building envelope. This structure is outside of the scope of the Florida Product Approval per Rule 9B-72.005 and does not meet the criteria for a Florida State Product Approval.

**5.3.3 Miami-Dade Notice of Acceptance (NOA) Scope:**

Building Products used in Dade or Broward counties (The Geographically Designated High-Velocity Hurricane Zone) that protect the envelope of the building from being breached must be approved by the Building Code Compliance Office, Product Control Division.

**5.3.4 Miami-Dade Notice of Acceptance (NOA) Findings:**

Model DS-450 Customer Unit as evaluated for use as a free standing structure is not part of the building envelope and therefore as such is outside of the scope of Miami-Dade’s Product Control Division’s criteria. This structure does not meet the criteria for a Miami-Dade Notice of Acceptance product Approval.

**6.0 Conditions of Use:**

**6.1** DS-450 is to be installed in accordance with section 4.0 Installation.

**6.2** DS-450 is evaluated to resist vertical uplift, horizontal sliding, and overturning wind loads.

**6.3** This unit is evaluated to resist the wind pressure criteria at a maximum elevation above ground (measured to the top of the unit) of 15 feet. (4.57 m)

**7.0 Referenced Documents:**

**7.1 Manufacturers Documentation**

**7.1.1** Unit specifications

**7.1.2** Installation Instructions

**7.2 Anchor Documentation**

**7.2.1** Hilti, North American Product Technical guide, 2008 Edition.

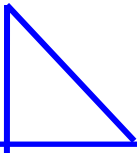
**7.2.2** Miami-Dade Notice of Acceptance #06-0810.13 for Hilti Kwik Bolt III.

**7.3 Engineering Report**

CBUCK Engineering report C07-108-VS

**7.4 Quality Assurance Program Documentation**

Vault Structures Production Quality Assurance Manual



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**8.0 Identification:**

Each Vault Structures, Inc., DS-450 Unit is identified with a metal label bearing the manufacturers name, location, date, model and serial numbers

**9.0 Use of Report for Code Compliance:**

**9.1** 2007 Florida Building Code (FBC) Section 104.11.1 allows Research Reports to provide supporting data for demonstrating code compliance of materials or assemblies.

**9.2** Evaluation of the subject of this Code Evaluation Research Report was performed through approved testing and engineering analysis to demonstrated compliance with the intent of the referenced code sections and standards listed in this report. Building Officials, having jurisdiction, are granted the duty and power through state statue to confer approvals for all material and assemblies through the permit process for specific projects based on the design use of products and methods per FBC Section 104. (Exception: Florida State approved mandatory envelope products that are being used within their limits of use per Rule 9B-72)

**9.3** CBUCK Engineering and James L Buckner, P.E are independent third parties from the Report Holder and do not have or intend to have a financial interest in the Report Holder.

**9.4** Code Evaluation Research Reports shall not be used to infer an endorsement by CBUCK Engineering or James L. Buckner, P.E. of the manufacturer or product.

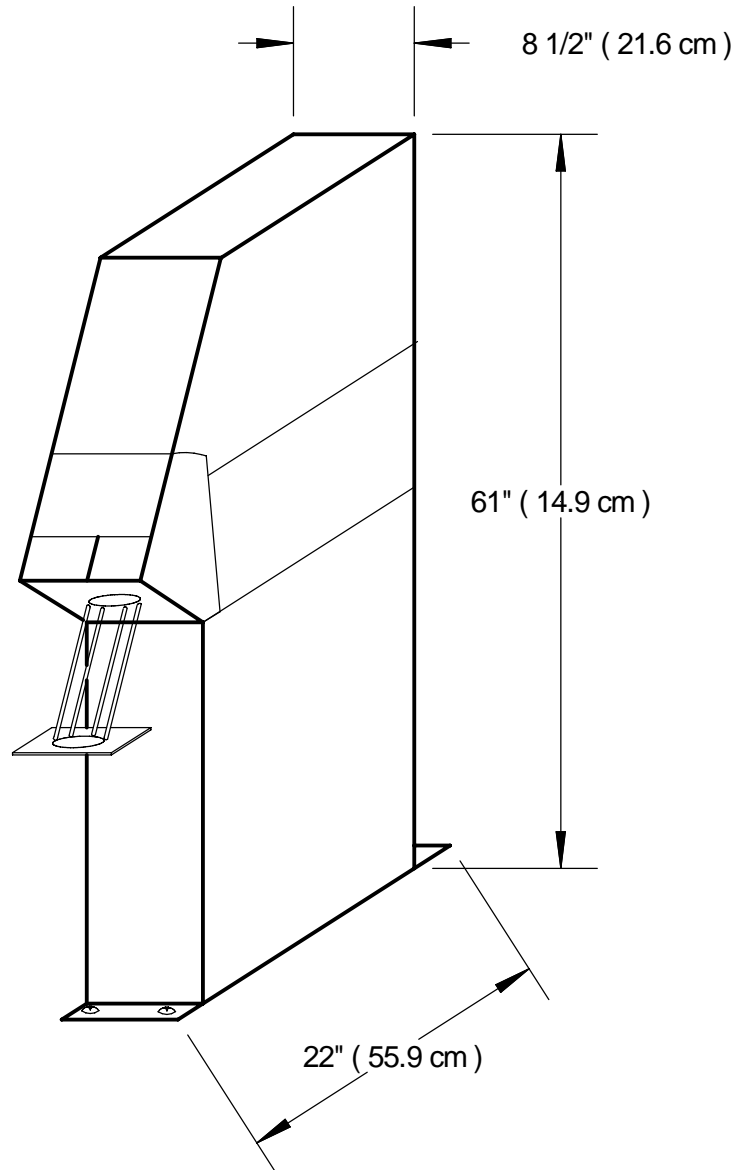
**9.5** Current Code Evaluation Research Reports are posted and viewable on CBUCK Engineering's website at [www.cbuckinc.net](http://www.cbuckinc.net).

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The scope of this certification is limited by the report criteria and conditions.

Board Certified Structural Engineer  
SECB # 1058-0705  
Florida Registered Evaluation Engineer.  
FBC ANE #1916

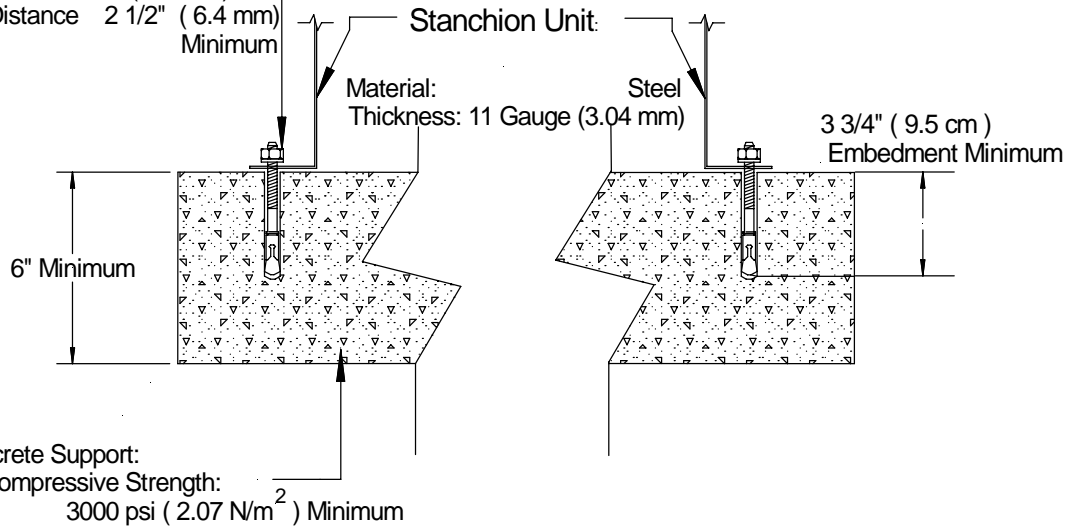
**Vault Structures  
Motor Banking Customer Unit  
Model DS-450**



**Unit Nominal Overall Dimensions  
Vault Structures  
Motor Banking Customer Unit  
Model DS-450**

Anchor:

Manufacturer : Hilti  
Model: Kwik Bolt III  
Item #: 282545  
Diameter: 3/8" (9.5 mm)  
Length: 5" (12.7 cm)  
Edge Distance 2 1/2" (6.4 mm)  
Minimum



**Side Section**