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(Subject to Renew January 1, 2026 or next code cycle)

**EVALUATION SUBJECT: PANELIZED SPLIT SYSTEMS****TER-22-55953****REPORT HOLDER:**NORTEK GLOBAL HVAC  
8000 PHOENIX PARKWAY  
O'FALLON, MO 63368 USA  
(800) 422-4328 | NORTEK.COM**SCOPE OF EVALUATION (compliance with the following codes):**

**THIS IS A STRUCTURAL (WIND) PERFORMANCE EVALUATION ONLY. NO ELECTRICAL OR TEMPERATURE PERFORMANCE RATINGS OR CERTIFICATIONS ARE OFFERED OR IMPLIED HEREIN. UNDER NO CIRCUMSTANCE DOES THIS PERFORMANCE EVALUATION GUARANTEE, IMPLY, OR STATE PERFORMANCE OF THE UNIT IS MAINTAINED DURING OR AFTER A DESIGN EVENT.**

This Product Evaluation Report is being issued in accordance with the requirements of the **Florida Building Code Eighth Edition (2023)** per ASCE 7, FBC Building Ch. 16, FBC Building Sections 104.11 & 1522.2, FBC Existing Building Sections 707.1 & 707.2, FBC Mechanical 301.15, FBC Residential M1202.1 & M1301.1, FS 471.025, and Broward County Administrative Provisions 107.3.4. This report is also in accordance with the **International Building & Residential Codes (2012, 2015, 2018, & 2021)**. The product noted in this report has been tested and/or evaluated as summarized herein.

**IN ACCORDANCE WITH THESE CODES EACH OF THESE REPORTS MUST BEAR THE ORIGINAL SIGNATURE & RAISED SEAL OR DIGITAL SEAL OF THE EVALUATING ENGINEER.**

**SUBSTANTIATING DATA:****• Product Evaluation Documents**

Substantiating documentation has been submitted to provide this TER and is summarized in the sections below.

**• Structural Engineering Calculations**

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

- Max. allowable lateral & uplift wind pressures certified herein
- Max. allowable sliding forces, uplift forces, & overturning moments (see Unit Reactions from Wind Guide on last page)
- Tie-down configuration and anchor capacity for concrete, aluminum, and steel host substrates (host by others).
- Unit panel wind pressure connection integrity

Calculation summary is included in this TER and appears herein.

**LIMITATIONS & CONDITIONS OF USE:**

Use of the product(s) listed herein shall be in strict accordance with this TER as noted herein and manufacturer-provided model specifications. Installation shall conform to the minimum standards stated in the referenced building code(s) in addition to the specifications and limitations stated herein. See herein for complete limitations & conditions of use.

**OPTIONS:**

This evaluation is valid for the NORTEK models described herein. The critical unit designs have been determined and used in this evaluation. Any structural changes outside of the design as described herein would void this certification.

**UNIT CASING MATERIALS:**

20ga galvanized steel sheet equivalent to ASTM A653 EDDS cold rolled steel for removable top panel. 30% Talc reinforced polypropylene for base pan. 24ga galvanized steel sheet ASTM A653 for side protector panels, secured with #12-14 C1016-C1024 at base pan and #10-16 C1016-C1024 sheet metal screws into top. Contact Report Holder for further unit construction information.

**NOTE: THE GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER IN APPEARANCE.**

**STRUCTURAL PERFORMANCE:**

Models referenced herein are subject to the following design limitations:

Maximum Rated Wind Pressures\*:  
**± 118 psf Lateral, 93 psf Uplift**

- Required design wind pressures shall be determined according to the guide provided in the Appendix (see last page of this report) or on a site-specific basis in accordance with ASCE 7 and applicable sections of the building code(s) being referenced in accordance with ASD methodology.
- Required design wind pressures shall be less than or equal to the maximum pressures listed herein.
- \*Maximum Rated ASD Wind Pressures indicate the maximum pressures that all units listed herein are approved for. Valid for at-grade and rooftop applications. See limitations herein.
- Valid for use inside and outside the High-Velocity Hurricane Zone (HVHZ).
- Site-specific wind analysis may produce alternate limitations provided that the maximum rated wind pressures stated herein are not exceeded.

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**FRANK BENNARDO PE0046549 CA-9885**

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MODEL INFORMATION (CONTINUED ON FOLLOWING PAGE)

Model Number	Unit Dimensions (in)			Cabinet
	Height	Width	Depth	
*SA1BD4M1SN18K	24.5	23.75	23.75	A
*SA1BD4M1SN24K	24.5	23.75	23.75	A
*SA1BD4M1SN30K	28.5	23.75	23.75	A
*SA1BD4M1SN36K	28.5	23.75	23.75	A
*SA1BD4M1SN42K	29.25	31.75	31.75	B
*SA1BD4M1SN48K	29.25	31.75	31.75	B
*SA1BD4M1SN60K	33.25	31.75	31.75	B
*SA1BE4M1RN18K	32.5	23.75	23.75	A
*SA1BE4M1RN24K	32.5	23.75	23.75	A
*SA1BE4M1RN30K	29.25	31.75	31.75	B
*SA1BE4M1SN18K	28.5	23.75	23.75	A
*SA1BE4M1SN24K	32.5	23.75	23.75	A
*SA1BE4M1SN30K	29.25	31.75	31.75	B
*SA1BE4M1SN36K	37.25	31.75	31.75	B
*SA1BE4M1SN42K	41.25	31.75	31.75	B
*SA1BE4M1SN48K	41.25	31.75	31.75	B
*SA1BE4M1SN60K	45.25	31.75	31.75	B
*SA1BF4M1SN24K	36.5	23.75	23.75	A
*SA1BF4M1SN30K	29.25	31.75	31.75	B
*SA1BF4M1SN36K	41.25	31.75	31.75	B
*SA1BF4M1SN42K	45.25	31.75	31.75	B
*SA1BF4M1SN48K	45.25	31.75	31.75	B
*SA1BF4M2SN24K	36.5	23.75	23.75	A
*SA1BF4M2SN36K	37.25	31.75	31.75	B
*SA1BF4M2SN48K	41.25	31.75	31.75	B
*SA1BF4M2SN60K	45.25	31.75	31.75	B
*SA1BG4MVRN24K	36.5	23.75	23.75	A
*SA1BG4MVRN36K	37.25	31.75	31.75	B
*SA1BG4MVRN48K	45.25	31.75	31.75	B
*SA1BG4MVRN60K	45.25	31.75	31.75	B
*SA1QD4M1RN24K	28.5	23.75	23.75	A
*SA1QD4M1RN24KA	28.5	23.75	23.75	A
*SA1QD4M1RN30K	28.5	23.75	23.75	A
*SA1QD4M1RN30KA	28.5	23.75	23.75	A
*SA1QD4M1RN36K	36.5	23.75	23.75	A
*SA1QD4M1RN36KA	36.5	23.75	23.75	A
*SA1QD4M1SN24K	24.5	23.75	23.75	A
*SA1QD4M1SN30K	28.5	23.75	23.75	A
*SA1QD4M1SN36K	28.5	23.75	23.75	A
*SA1QD4M1SN42K	29.25	31.75	31.75	B
*SA1QD4M1SN48K	29.25	31.75	31.75	B
*SA1QD4M1SN60K	33.25	31.75	31.75	B
*SA1QE4M1RN24K	32.5	23.75	23.75	A
*SA1QE4M1RN30K	29.25	31.75	31.75	B
*SA1QE4M1SN24K	32.5	23.75	23.75	A
*SA1QE4M1SN30K	29.25	31.75	31.75	B
*SA1QE4M1SN36K	37.25	31.75	31.75	B

Model Number	Unit Dimensions (in)			Cabinet
	Height	Width	Depth	
*SA1QE4M1SN42K	41.25	31.75	31.75	B
*SA1QE4M1SN48K	41.25	31.75	31.75	B
*SA1QE4M1SN60K	45.25	31.75	31.75	B
*SA3BD4M1SN18K	24.5	23.75	23.75	A
*SA3BD4M1SN24K	32.5	23.75	23.75	A
*SA3BD4M1SN30K	29.25	31.5	31.5	B
*SA3BD4M1SN36K	29.25	31.5	31.5	B
*SA3BD4M1SN42K	33.25	31.5	31.5	B
*SA3BD4M1SN48K	37.25	31.5	31.5	B
*SA3BD4M2SN60K	45.25	31.5	31.5	B
*SA3BE4M1SN18K	29.25	31.5	31.5	B
*SA3BE4M1SN24K	29.25	31.5	31.5	B
*SA3BE4M1SN30K	29.25	31.5	31.5	B
*SA3BE4M1SN36K	41.25	31.5	31.5	B
*SA3BE4M1SN42K	45.25	31.5	31.5	B
*SA3BE4M1SN48K	45.25	31.5	31.5	B
*SA3BE4M2SN60K	45.25	31.5	31.5	B
*SA3BE4M2SN60KA	45.25	31.5	31.5	B
*SA3BF4M2SN24K	29.25	31.5	31.5	B
*SA3BF4M2SN36K	45.25	31.5	31.5	B
*SA3BF4M2SN48K	45.25	31.5	31.5	B
*SA3BF4M2SN60K	45.25	31.5	31.5	B
*SA3BG4MVRN24K	36.5	23.75	23.75	A
*SA3BG4MVRN36K	37.25	31.5	31.5	B
*SA3BG4MVRN48K	45.25	31.5	31.5	B
*SA3BG4MVRN60K	45.25	31.5	31.5	B
*SA3MD4M1RN24K	28.5	23.75	23.75	A
*SA3MD4M1RN30K	36.5	23.75	23.75	A
*SA3MD4M1SN36K	36.5	23.75	23.75	A
*SA3MD4M1SN42K	29.25	31.5	31.5	B
*SA3MD4M1SN48K	33.25	31.5	31.5	B
*SA3ME4M1RN24K	29.25	31.5	31.5	B
*SA3ME4M1RN30K	33.25	31.5	31.5	B
*SA3ME4M1SN36K	33.25	31.5	31.5	B
*SA3ME4M1SN42K	41.25	31.5	31.5	B
*SA3ME4M1SN48K	41.25	31.5	31.5	B
*SA3ME4M1SN60K	45.25	31.5	31.5	B
*SA3QD4M1RN24K	28.5	23.75	23.75	A
*SA3QD4M1RN30K	36.5	23.75	23.75	A
*SA3QD4M1SN36K	36.5	23.75	23.75	A
*SA3QD4M1SN42K	29.25	31.5	31.5	B
*SA3QD4M1SN48K	33.25	31.5	31.5	B
*SA3QE4M1RN24K	29.25	31.5	31.5	B
*SA3QE4M1RN30K	33.25	31.5	31.5	B
*SA3QE4M1SN36K	33.25	31.5	31.5	B
*SA3QE4M1SN42K	41.25	31.5	31.5	B
*SA3QE4M1SN48K	41.25	31.5	31.5	B

MODEL INFORMATION CONTINUED (Continued from previous page)

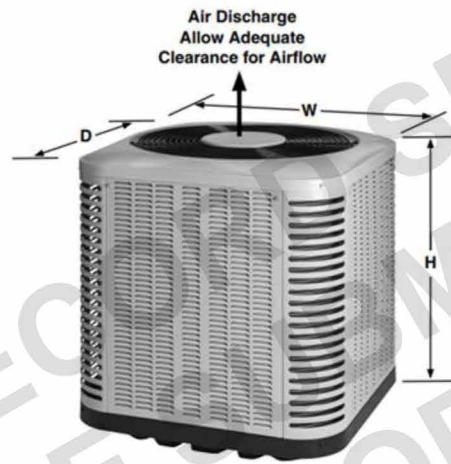
Model Number	Unit Dimensions (in)			Cabinet
	Height	Width	Depth	
*SA4BE5M1SN18K	32.5	23.75	23.75	A
*SA4BE5M1SN24K	29.25	31.75	31.75	B
*SA4BE5M1SN30K	29.25	31.75	31.75	B
*SA4BE5M1SN36K	41.25	31.75	31.75	B
*SA4BE5M1SN42K	37.25	31.75	31.75	B
*SA4BE5M1SN48K	45.25	31.75	31.75	B
*SA4BE5M1SN60K	45.25	31.75	31.75	B
*SA4BD5M1SN18K	24.5	23.75	23.75	A
*SA4BD5M1SN24K	28.5	23.75	23.75	A
*SA4BD5M1SN30K	29.25	31.75	31.75	B
*SA4BD5M1SN36K	29.25	31.75	31.75	B
*SA4BD5M1SN42K	33.25	31.75	31.75	B
*SA4BD5M1SN48K	37.25	31.75	31.75	B
*SA4BD5M1SN60K	45.25	31.75	31.75	B
*SA4BF5M2SN24K	32.5	23.75	23.75	A
*SA4BF5M2SN36K	45.25	31.75	31.75	B
*SA4BF5M2SN48K	45.25	31.75	31.75	B
*SA4BF5M2SN60K	45.25	31.75	31.75	B
*SA4MD5M1SN24K	28.5	23.75	23.75	A
*SA4MD5M1SN30K	36.5	23.75	23.75	A
*SA4MD5M1SN36K	36.5	23.75	23.75	A
*SA4MD5M1SN42K	33.25	31.75	31.75	B
*SA4MD5M1SN48K	33.25	31.75	31.75	B
*SA4ME5M1SN24K	29.25	31.75	31.75	B
*SA4ME5M1SN30K	29.25	31.75	31.75	B
*SA4ME5M1SN36K	37.25	31.75	31.75	B
*SA4ME5M1SN42K	45.25	31.75	31.75	B
*SA4ME5M1SN48K	45.25	31.75	31.75	B
*SA4ME5M1SN60K	45.25	31.75	31.75	B
*SH1BE4M1SP18K	33.25	31.75	31.75	B
*SH1BE4M1SP24K	33.25	31.75	31.75	B
*SH1BE4M1SP30K	41.25	31.75	31.75	B
*SH1BE4M1SP36K	45.25	31.75	31.75	B
*SH1BE4M1SP42K	45.25	31.75	31.75	B
*SH1BE4M1SP48K	45.25	31.75	31.75	B
*SH1BE4M1SP60K	45.25	31.75	31.75	B
*SH1BE4M1SP60KA	45.25	31.75	31.75	B
*SH1BF4M1SP24K	37.25	31.75	31.75	B
*SH1BF4M1SP30K	37.25	31.75	31.75	B
*SH1BF4M1SP36K	45.25	31.75	31.75	B
*SH1BF4M1SP42K	45.25	31.75	31.75	B
*SH1BF4M1SP48K	45.25	31.75	31.75	B
*SH1BF4M2SX24K	37.25	31.75	31.75	B
*SH1BF4M2SX36K	45.25	31.75	31.75	B
*SH1BF4M2SX48K	45.25	31.75	31.75	B
*SH1BF4M2SX60K	45.25	31.75	31.75	B
*SH1BG4CVRX24K	37.25	31.75	31.75	B
*SH1BG4CVRX36K	41.25	31.75	31.75	B

Model Number	Unit Dimensions (in)			Cabinet
	Height	Width	Depth	
*SH1BG4CVRX48K	41.25	31.75	31.75	B
*SH1BG4CVRX60K	45.25	31.75	31.75	B
*SH1QE4M1SP24K	33.25	31.75	31.75	B
*SH1QE4M1SP30K	41.25	31.75	31.75	B
*SH1QE4M1SP36K	45.25	31.75	31.75	B
*SH1QE4M1SP42K	45.25	31.75	31.75	B
*SH1QE4M1SP48K	45.25	31.75	31.75	B
*SH3BE4M1SP18K	33.25	31.5	31.5	B
*SH3BE4M1SP24K	37.25	31.5	31.5	B
*SH3BE4M1SP30K	41.25	31.5	31.5	B
*SH3BE4M1SP36K	45.25	31.5	31.5	B
*SH3BE4M1SP42K	45.25	31.5	31.5	B
*SH3BE4M1SP48K	45.25	31.5	31.5	B
*SH3BE4M2SX60K	45.25	31.5	31.5	B
*SH3BF4M2SX24K	37.25	31.5	31.5	B
*SH3BF4M2SX36K	45.25	31.5	31.5	B
*SH3BF4M2SX48K	45.25	31.5	31.5	B
*SH3BF4M2SX60K	45.25	31.5	31.5	B
*SH3BG4CVRX24K	37.25	31.5	31.5	B
*SH3BG4CVRX36K	41.25	31.5	31.5	B
*SH3BG4CVRX48K	41.25	31.5	31.5	B
*SH3BG4CVRX60K	45.25	31.5	31.5	B
*SH3ME4M1RP24K	37.25	31.5	31.5	B
*SH3ME4M1RP30K	45.25	31.5	31.5	B
*SH3ME4M1SP36K	45.25	31.5	31.5	B
*SH3ME4M1SP42K	45.25	31.5	31.5	B
*SH3ME4M1SP48K	45.25	31.5	31.5	B
*SH3QE4M1RP24K	37.25	31.5	31.5	B
*SH3QE4M1RP30K	45.25	31.5	31.5	B
*SH3QE4M1SP36K	45.25	31.5	31.5	B
*SH3QE4M1SP42K	45.25	31.5	31.5	B
*SH3QE4M1SP48K	45.25	31.5	31.5	B
*SH4BE5M1SP18K	33.25	31.75	31.75	B
*SH4BE5M1SP24K	37.25	31.75	31.75	B
*SH4BE5M1SP30K	41.25	31.75	31.75	B
*SH4BE5M1SP36K	45.25	31.75	31.75	B
*SH4BE5M1SP42K	45.25	31.75	31.75	B
*SH4BE5M1SP48K	45.25	31.75	31.75	B
*SH4BE5M2SX60K	45.25	31.75	31.75	B
*SH4BF5M2SX24K	37.25	31.75	31.75	B
*SH4BF5M2SX36K	45.25	31.75	31.75	B
*SH4BF5M2SX48K	45.25	31.75	31.75	B
*SH4BF5M2SX60K	45.25	31.75	31.75	B
*SH4ME5M1SP24K	37.25	31.75	31.75	B
*SH4ME5M1SP30K	45.25	31.75	31.75	B
*SH4ME5M1SP36K	45.25	31.75	31.75	B
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*SH4ME5M1SP48K	45.25	31.75	31.75	B

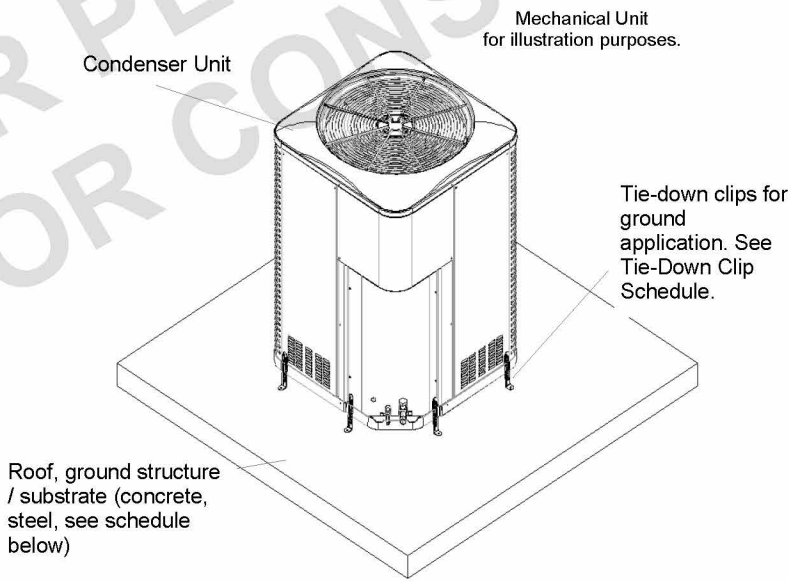


MODEL INFORMATION NOTES

Unit dimensions listed above are unit net dimensions (as opposed to packing/shipping dimensions). Unit net weights shall be between 70 lb and 330 lb, typ. Model information listed herein is based on information provided by the client. See detail below for definitions of unit dimensions and panel designations (related to the Panel Integrity evaluation summarized herein). In the detail, "W" is short for unit width, "D" for unit depth, and "H" for unit height. Unit appearance may vary. Please contact Report Holder for more information.

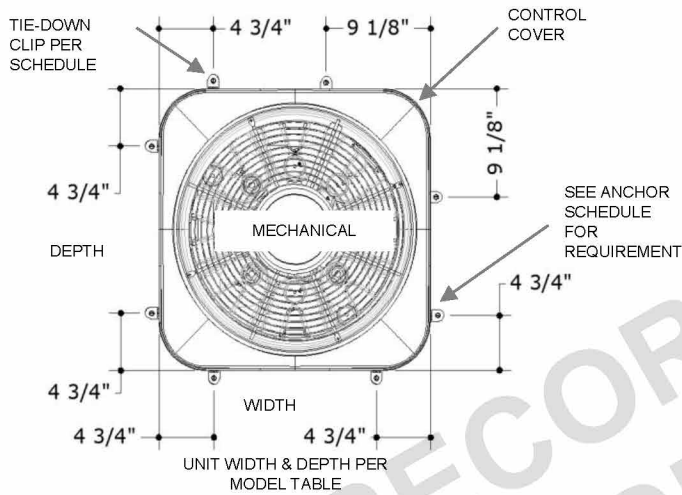


PRODUCT INSTALLATION



PRODUCT INSTALLATION CONTINUED

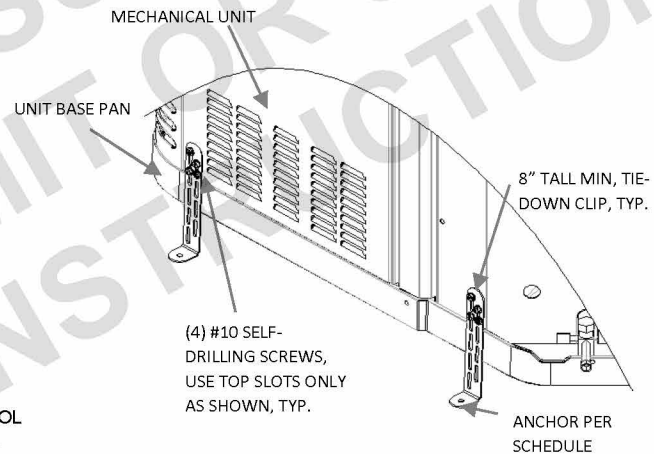
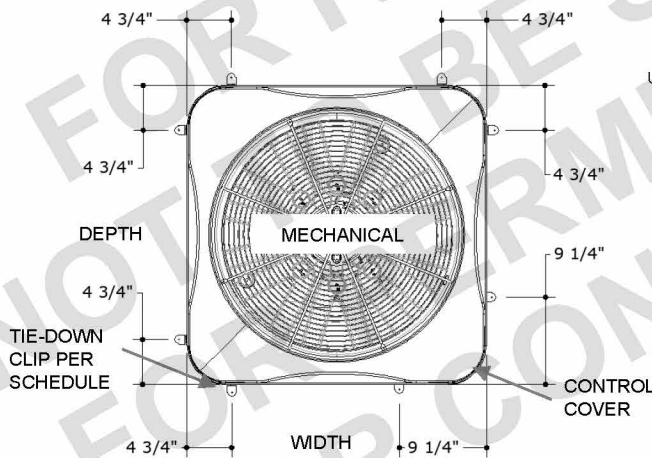
ANCHOR LAYOUT AT GRADE LEVEL CABINET A



**TIE-DOWN CLIP (GROUND APPLICATION)**

Miami Tech CUTD 1" wide and 8" long min ASTM A653 galvanized steel 0.07" thick for all cabinets tied down at ground; fasten clip to host structure using anchor from Anchor Schedule to Host Structure Table and (4) #10-16 x 1/2" SS316 min self-drilling screw to fasten clip to unit. MIAMI-TECH KIT #NCUTD8KG

ANCHOR LAYOUT AT GRADE LEVEL CABINET B



TIE-DOWN CLIP DETAIL

ANCHOR SCHEDULE TO HOST STRUCTURE

Installation Condition	Max. ASD Wind Pressures Lateral (Uplift)	Anchor Schedule to Host Structure By Others			# of Tie-Down Clips
		f'c = 3 ksi min. Regular-Weight Concrete Host	1/8" min. thick UTS = 58 ksi min. Steel Host	1/8" min. thick 6061-T6 Aluminum Host	
At-Grade	± 54 psf (0 psf)	A	N/A	N/A	8
Rooftop	± 118 psf (93 psf)	N/A	B	B	12

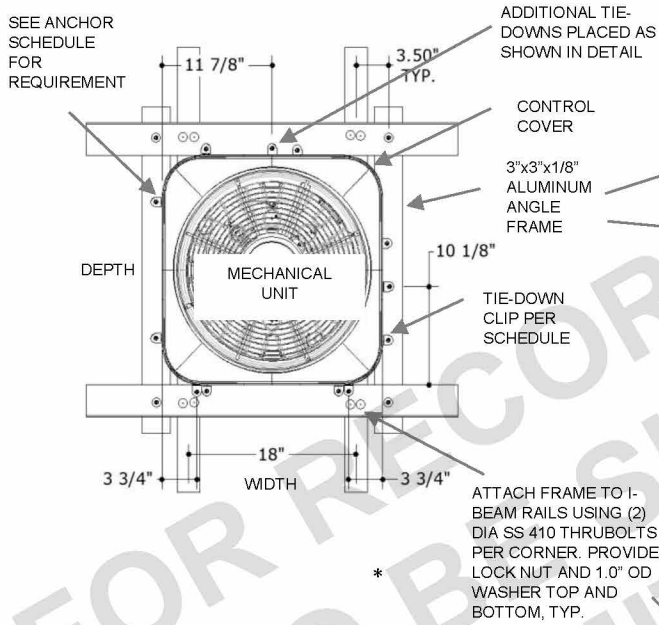
**Note:** Anchor Schedule is applicable for all unit models and cabinet types listed herein.

**Anchor Types to Host Structure:**

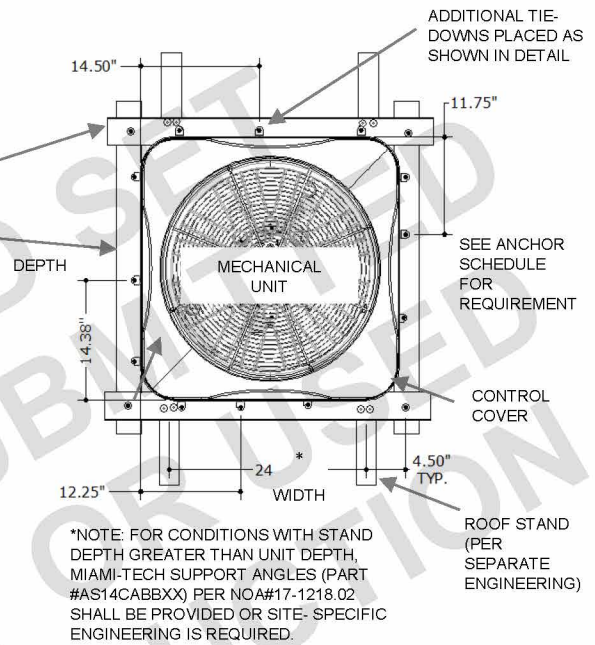
- A. - 1/4" HILTI KBV Expansion Anchor embedded 2" in 4,000 psi concrete. 4" from edge minimum.
- B. - 1/4" UNC SS 410 bolt minimum 1/2" from edges with nut and washer specified for installation at roof level.
- NA. - NOT APPLICABLE

PRODUCT INSTALLATION CONTINUED

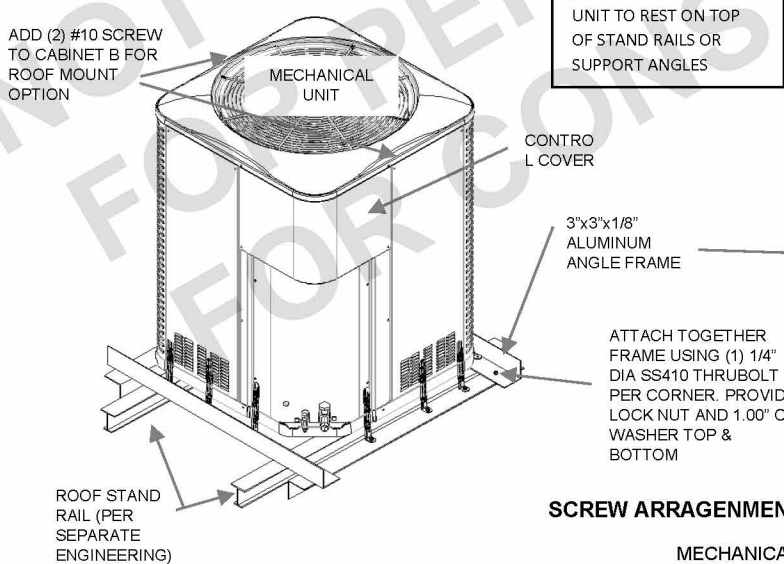
**ANCHOR LAYOUT AT ROOF LEVEL CABINET A  
MIAMI-TECH KIT #NCUTD30KR**



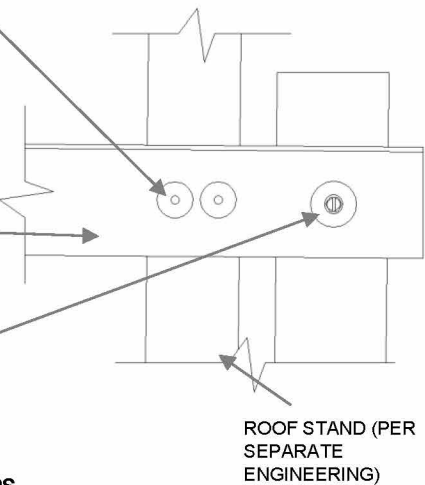
**ANCHOR LAYOUT AT ROOF LEVEL CABINET B  
MIAMI-TECH KIT #NCUTD38KR**



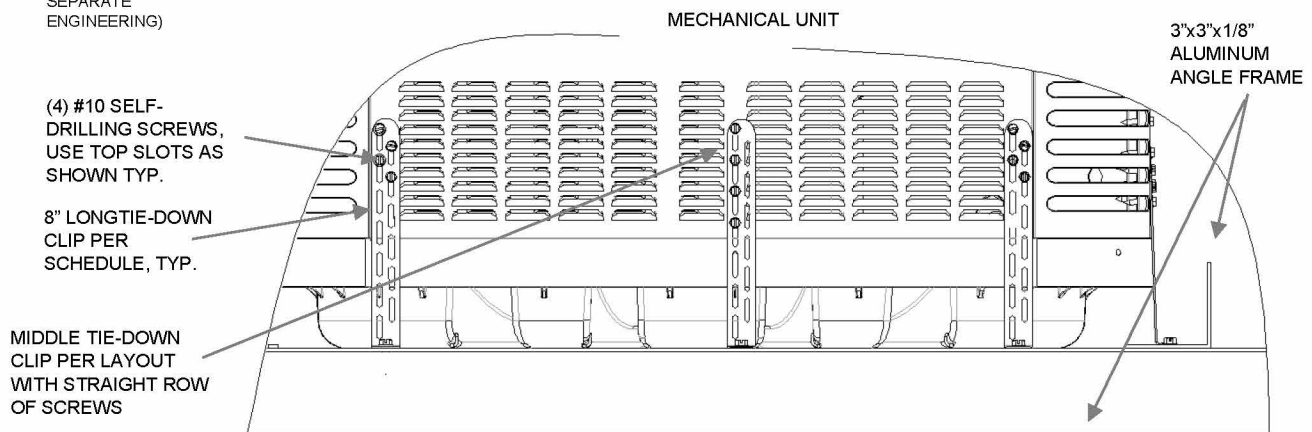
**MECHANICAL UNIT ROOF MOUNTED**



**FRAME TYPICAL CONNECTIONS**



**SCREW ARRANGEMENT IN CLIPS**



**PANEL INTEGRITY SUMMARY**

Cabinet	Installation Condition	Max. ASD Wind Pressures Lateral (Uplift)	Additional Reinforcement Beyond Original Manufactured Cabinet
A	At-Grade	± 54 psf (0 psf)	Tie-down Clips shown herein.
	Rooftop	± 118 psf (93 psf)	Tie-down Clips shown herein.
B	At-Grade	± 54 psf (0 psf)	Tie-down Clips shown herein.
	Rooftop	± 118 psf (93 psf)	Tie-down Clips shown herein plus (2) addtl. Screws at top of panel.

**PANEL INTEGRITY SUMMARY NOTES**

Notes:

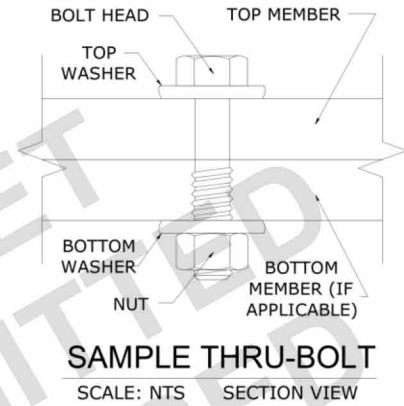
1. Panel Integrity Summary applies to all unit models listed herein. See corresponding Cabinet designation and installation Condition for specifications.
2. Calculations performed according to the information provided by the client.
3. Screw quantities were checked to reinforce unit panels as needed. Validate that the screw joins the panel with the supporting element.
4. Additional screw shall be at least #10 x 1/2" long Gr 2.
5. Installer shall insulate dissimilar metals if needed.
6. See screw location on detail page.

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TERMINOLOGY, CONTINUED

The following abbreviations may appear in this report: "Addtl." for "additional", "AHJ" for "Authority Having Jurisdiction", "alum" for "aluminum", "ASCE" for "American Society of Civil Engineers", "ASD" for "Allowable Stress Design", "ASTM" for "American Society for Testing and Materials", "EA." for "each", "E.D." for edge distance, "EDDS" for "extra deep drawing steel", "e.g." for "exempli gratia" or "for example", "equiv." for "equivalent", "FBC" for "Florida Building Code", "FEA" for "Finite Element Analysis", "FLCA" for "Florida Certificate of Authorization", "FS" for "Florida Statutes", "Fu" for "ultimate tensile strength" or "ultimate tensile stress", "Fy" for "yield strength" or "yield stress" "GA" for "gauge", "GR." or "Gr." for "grade", "HVAC" for "heating, ventilation, and air conditioning", "HVHZ" for "High-Velocity Hurricane Zone", "i.e." for "id est" or "in other words", "in" for "inch", "lb" for "pound (force)", "max." for "maximum", "min." for "minimum", "mm" for "millimeter", "NTS" for "not to scale", "O.C." for "on center", "OD" for "outer diameter", "PE" for "Professional Engineer", "qty" for "quantity", "SAE" for "Society of Automotive Engineering", "SMS" for "sheet metal screws", "SS" for "stainless steel", "TER" for "Technical Evaluation Report", "typ." for "typical", "U.N.O." for "unless noted otherwise", "UTS" for "ultimate tensile strength" or "ultimate tensile stress", "WLL" for "working load limit", "w/o" for "without", "YS" for "yield strength" or "yield stress", "#" for "number", "&" for "and", and "Ø" for "diameter". Please visit [ecalx.io/glossary](http://ecalx.io/glossary) for additional abbreviation clarifications.



Note: The term "Thru-Bolt" or through bolt, if used herein, refers to a bolt passing through the member(s) in contact and is fastened by a nut at the end opposite the screw head. Nut shall be equivalent to or exceed the strength of the bolt U.N.O. Nut shall be sized to accommodate the same nominal diameter as the bolt U.N.O. See diagram above-right for a sample thru-bolt configuration.

Note: For instances herein which list material specifications as "[material type] or stronger". U.N.O. herein, the term "stronger" refers to a material with a UTS value equal to or greater than the UTS value of the stated material type. Consult appropriate literature for established material UTS values.

Note: Equivalent steel gauge thicknesses as used in this evaluation, U.N.O., are as follows: 22 GA (.030"), 20 GA (.036"), 18 GA (.048"), 16 GA (.060"), 14 GA (.075"), 12 GA (.098").

LIMITATIONS & CONDITIONS OF USE, CONTINUED

**Use of this product shall be in strict accordance with this TER as noted herein.** The supporting host structure shall be designed to resist all superimposed loads as determined by others on a site-specific basis as may be required by the authority having jurisdiction. Host structure conditions that are not accounted for in this product's respective anchor schedule shall be designed for on a site-specific basis by a registered Professional Engineer. No evaluation is offered for the host supporting structure by use of this document. Adjustment factors noted herein and the applicable building codes must be considered, where applicable. Product components shall be of the material(s) specified in the manufacturer-provided product specifications. All supporting components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times. All fasteners and anchors shall be installed in accordance with the applicable provisions specified herein in addition to the anchor/fastener manufacturers' published installation instructions. Fasteners must penetrate the supporting members such that the full length of the threaded portion is embedded within the main member.

All of the wind-resisting exterior panels (with accompanying retrofits) individually meet or exceed their capacity to resist the design wind loads as stated in the calculations as required by the codes and standards stated herein. Due to the indeterminate nature of these units, distortion, deflection, and material deformation cannot be accurately evaluated, but with the diaphragm action of external components and internal stiffeners, the base unit (with accompanying retrofits stated herein as applicable) has the capacity to withstand the design wind loads without detaching from the unit and becoming flying debris.

**Survivability:** Evaluation reports are valid for a newly installed unit and do not include certification of the product beyond a design event or if impacted by any debris. Inspections shall be implemented annually by the end user and after every named storm. All fasteners and cabinet components are to be verified, and all damaged, loose, corroded and/or broken fasteners and cabinet components shall be replaced to ensure structural integrity against hurricane wind forces. Contact this office for any reevaluation needs or as designated by the Authority Having Jurisdiction.

**Durability:** Components or component assemblies shall not deteriorate, crack, fail, or lose functionality due to galvanic corrosion or weathering. All supporting components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times. Each component or component assembly shall be supported and oriented in its intended installation position. All exposed plastic components shall be certified to resist sunlight exposure as specified by ASTM B117, or ASTM G155 in Broward or Miami-Dade counties.

**Extent of Certification:** Certification pertains to the overall structural integrity of the unit components listed within the evaluation as required by code, subject to the limitations and criteria stated herein. Operability during or after a design event is not included in this certification. Water infiltration is outside the bounds of this certification. No other certifications are intended other than as described herein. This evaluation alone does not offer any evaluation for large missile impact debris or cyclic wind requirements unless specifically stated herein.

Proj. #	Remarks	By	Checked	Date	Proj. #	Remarks	By	Checked	Date
19-8163.1	Initial issue	LAO	LAO	2019	22-55953	Add models	MRT	EPR	03/22/2023
22-55953	Add models, 2020 FBC update	MRT	EPR	10/04/2022	22-55953	Add models	MARH	RWN	08/28/2024



APPENDIX A: DESIGN WIND PRESSURE GUIDE

Max. Ult. Wind Speed (V <sub>ult</sub> )	Max. MRH (Roof Height)	Exposure Category	Required Design Wind Pressures (ASD)	
			Lateral Pressure	Uplift Pressure
140 mph	At-Grade (0 ft)	C	± 26 psf	0* psf
		D	± 31 psf	0* psf
	100 ft	C	± 63 psf	50 psf
		D	± 71 psf	56 psf
	200 ft	C	± 72 psf	57 psf
		D	± 80 psf	63 psf
175 mph	At-Grade (0 ft)	C	± 40 psf	0* psf
		D	± 49 psf	0* psf
	100 ft	C	± 98 psf	77 psf
		D	± 111 psf	87 psf
	200 ft	C	± 113 psf	89 psf
		D	<del>± 124 psf</del>	<del>98 psf</del>
186 mph	At-Grade (0 ft)	C	± 46 psf	0* psf
		D	± 54 psf	0* psf
	100 ft	C	± 111 psf	87 psf
		D	<del>± 125 psf</del>	<del>99 psf</del>
	200 ft	C	<del>± 127 psf</del>	<del>100 psf</del>
		D	<del>± 140 psf</del>	<del>111 psf</del>

~~± 100 psf~~

Note: Any table values with the format shown left, if present, indicate design wind pressures and site conditions that are **not approved for use** by this evaluation. Seek additional engineering or contact this firm for design solutions.

**DIRECTIVE:** This design pressure guide is for reference only and shall be approved for use by the Authority Having Jurisdiction (AHJ). If the design pressures listed in this guide are not used, required design pressures shall be calculated separately. For site-specific scenarios classified as Exposure Category B, the required design pressures stated for Exposure Category C in the above guide shall be used or design pressures shall be calculated separately. For heights and parameters beyond the parameters listed in this guide, visit our Online Calculator via the website link (<https://ecalc.io/forces>) or QR Code below, or obtain calculations separately by others.

The required ASD design pressures listed in this guide were calculated per the table's listed corresponding site conditions. The project design professional or permitting contractor shall verify that the site-specific conditions are equal to or less than the approved design parameters listed in the guide. Per the note below table: any values shown as "~~XX psf~~", indicate wind pressures and corresponding site conditions that are **not valid for use** with this evaluation (exceeds the max. rated pressures).

\*Note: Per the codes and standards referenced herein, uplift is not required for mechanical equipment at-grade. If uplift at-grade is required by the AHJ, contact this firm for a site-specific evaluation.

**At-Grade (0 ft MRH) Required Design Pressures:**

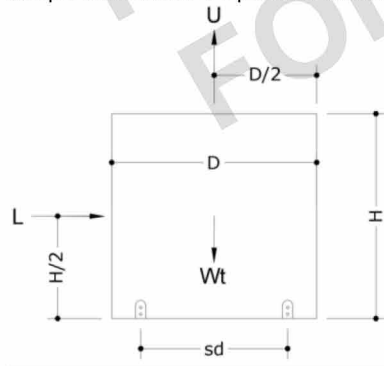
- ASCE 7 "Design Wind Loads: Other Structures"
- Structure Shape = Square, flat terrain
- Height of structure (unit + stand or curb, if used) = 6 ft max.
- Width of unit = 1 ft min., Depth of unit = 11 in min.

**Rooftop (>15 ft MRH) Required Design Pressures:**

- ASCE 7 "Design Wind Loads: Other Structures: Rooftop Structures and Equipment for Buildings"
- Structure Shape = Square, flat terrain
- z = up to 7 ft, where z = height of stand or curb + ½ unit height
- Lateral GC<sub>r</sub> = 1.90; Uplift GC<sub>r</sub> = 1.50

UNIT REACTIONS FROM WIND GUIDE

**DIRECTIVE:** This guide is intended for use by a design professional. Design parameters shall abide all specifications and limitations stated in this report. Design professional shall consider all forces, including seismic and snow loads, per the governing building code. Unit reactions obtained from this guide shall be verified by a registered Professional Engineer. Reactions are applicable for unit-to-host connections only. Sample calculations are provided below.



**Design Parameters:**

- Lateral Wind Pressure, P<sub>lat</sub>
- Unit Height, H
- Unit Width, W
- Support Spacing across Depth, sd
- Uplift Wind Pressure, P<sub>up</sub>
- Unit Depth, D
- Unit Weight, Wt
- Support Spacing across Width, sw

**Unit Reaction Equations:**

**Long Side (Width x Height):**

- Sliding Force, L = P<sub>lat</sub> x W x H
- Uplift Force, U = P<sub>up</sub> x W x D
- Total Tension per Long Side = ( L x H/2 + U x sd/2 - Wt x 0.6 x sd/2 ) / sd

**Short Side (Depth x Height):**

- Sliding Force, L = P<sub>lat</sub> x D x H
- Uplift Force, U = P<sub>up</sub> x W x D
- Total Tension per Short Side = ( L x H/2 + U x sw/2 - Wt x 0.6 x sw/2 ) / sw

**Example:** A (48" W x 36" D x 42" H), 250 lb net weight unit at wind pressures of 120 psf lateral and 95 psf uplift, on a 24" wide roof stand, shall have the following unit reactions:

**Long Side (Width x Height):**

1. Sliding Force, L = P<sub>lat</sub> x W x H = (120 psf) x (48 in) x (42 in) x (1 in<sup>2</sup> / 144 ft<sup>2</sup>) = **1680 lb**
2. Uplift Force, U = P<sub>up</sub> x W x D = (95 psf) x (48 in) x (36 in) x (1 in<sup>2</sup> / 144 ft<sup>2</sup>) = **1140 lb**
3. Total Tension per Long Side = ( L x H/2 + U x sd/2 - Wt x 0.6 x sd/2 ) / sd = ( (1680 lb x 42/2 in) + (1140 lb x 24/2 in) - (250 lb x 0.6 x 24/2 in) ) / 24 in = **1965 lb**

**Short Side (Depth x Height):**

1. Sliding Force, L = P<sub>lat</sub> x D x H = (120 psf) x (36 in) x (42 in) x (1 in<sup>2</sup> / 144 ft<sup>2</sup>) = **1260 lb**
2. Uplift Force, U = P<sub>up</sub> x W x D = (95 psf) x (48 in) x (36 in) x (1 in<sup>2</sup> / 144 ft<sup>2</sup>) = **1140 lb**
3. Total Tension per Short Side = ( L x H/2 + U x sw/2 - Wt x 0.6 x sw/2 ) / sw = ( (1260 lb x 42/2 in) + (1140 lb x 48/2 in) - (250 lb x 0.6 x 48/2 in) ) / 48 in = **1046 lb**

**IN ALL CONDITIONS IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO ENSURE THE HOST STRUCTURE IS CAPABLE OF WITHSTANDING THE RATED GRAVITY, LATERAL, AND UPLIFT FORCES BY SITE-SPECIFIC DESIGN. NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS OFFERED BY ENGINEERING EXPRESS AS TO THE INTEGRITY OF THE HOST STRUCTURE TO CARRY DESIGN FORCE LOADS INCURRED BY THIS UNIT.**