



BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 372-6339

**NOTICE OF ACCEPTANCE (NOA)**

[www.miamidade.gov/buildingcode](http://www.miamidade.gov/buildingcode)

**Wej-it Fastening Systems**  
10541 E. Ute  
Tulsa, OK 74116

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

**DESCRIPTION: ANKR-TITE CCAT Wedge Anchor**

**APPROVAL DOCUMENT:** Drawing No.1, titled "CCAT Wedge Anchor", Sheets 1 through 4 of 4, Rev. 3 dated 09/17/09, prepared by Wej-it Fastening Systems, signed and sealed by Lee W. Mattis, P.E., bearing the Miami-Dade County Product Control approval stamp with the Notice of Acceptance (NOA) number and approval date by the Miami-Dade County Product Control Division.

**MISSILE IMPACT RATING: None**

**LABELING:** Each box shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved or MDCPCA", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1, evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**



*[Signature]*  
10/05/09

NOA No: 09-0319.05  
Expiration Date: October 28, 2014  
Approval Date: October 28, 2009  
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**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. Drawing No. 1, titled "CCAT Wedge Anchor", Sheets 1 through 4 of 4, Rev. 3 dated 09/17/09, prepared by Wej-it Fastening Systems, signed and sealed by Lee W. Mattis, P.E.

**B. TESTS**

1. Test report on Tension and Shear Capacity of 1/2", 5/8" and 3/4" diameter ANKR-TITE CCAT Wedge Anchors per ASTM E 488 and ACI 355.2, prepared by CEL Consulting, Test Report No. **8W162** and Supplement No. **8A10**, dated 05/23/09, signed and sealed by Lee W. Mattis, P.E.
2. Test report on Corrosion Resistance of Wej-it Concrete Sleeve Anchors per ASTM G 85, Annex 5 and TAS 114, Appendix E, prepared by Testing Evaluation Laboratories, Inc, Test Report No. **TEL 08-01530003**, dated 02/08/08, signed by Wendell W. Haney, P.E.

**C. CALCULATIONS**

1. None.

**D. MATERIAL CERTIFICATIONS**

1. None.

**E. QUALITY ASSURANCE**

1. Miami Dade Building Code Compliance Office (BCCO)

**F. STATEMENTS**

1. Code Compliance and no financial interest letters issued by CEL Consulting, dated 07/14/09, signed and sealed by Lee W. Mattis, P.E.

  
10/05/09

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Carlos M. Utrera, P.E.  
Product Control Examiner  
NOA No 09-0319.05  
Expiration Date: October 28, 2014  
Approval Date: October 28, 2009



**TABLE 1 - ANKR-TITE CCAT WEDGE ANCHOR INSTALLATION INFORMATION<sup>1</sup>**

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)					
			1/2		5/8		3/4	
<b>Installation Information</b>								
Outside diameter	$d_o$	in.	1/2		5/8		3/4	
Drill bit diameter	$d$	in.	1/2		5/8		3/4	
Installation torque	$T_{inst}$	ft-lbf	75		125		225	
Minimum nominal embedment depth	$h_{nom}$	in.	3 1/4	5 1/2	4	6 3/8	4 1/2	7 3/4
Effective embedment depth	$h_{ef}$	in.	2 3/4	5	3 3/8	5 3/4	3 3/4	7
Critical edge distance	$c_{ac}$	in.	4 1/8	7 1/2	5	8 5/8	7 1/2	10 1/2
Minimum edge distance	$c_{min}$	in.	5 1/2		5		5 5/8	
Minimum spacing	$s_{min}$	in.	8 1/4		9 1/4		5 5/8	
Minimum concrete thickness	$h_{min}$	in.	6	10	6 3/4	11 1/2	7 1/2	14
<b>Anchor Data</b>								
Specified yield strength of anchor steel	$f_{ya}$	psi	88,000		83,000		73,000	
Specified tensile strength of anchor steel	$f_{uta}$	psi	110,000		104,000		91,000	
Effective tensile and shear stress area	$A_{se}$	in <sup>2</sup>	0.116		0.144		0.219	

For SI: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m, 1 psi = 6.89 Pa, 1 in<sup>2</sup> = 645 mm<sup>2</sup>, 1 lb/in = 0.175 N/mm

<sup>1</sup>The information presented in this table is to be used in conjunction with the design criteria of ACI 318 Appendix D.

Approved as complying with the  
 Florida Building Code  
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 Miami Dade Product Control  
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**TABLE 2 - ANKR-TITE CCAT WEDGE ANCHOR CHARACTERISTIC TENSION STRENGTH DESIGN VALUES<sup>1,2,3,6</sup>**

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)					
			1/2		5/8		3/4	
Anchor Category	1, 2, or 3	—	1		1		1	
Effective embedment depth	$h_{ef}$	in.	2 3/4	5	3 3/8	5 3/4	3 3/4	7
<b>Steel Strength in Tension (ACI 318 Section D.5.1)<sup>4</sup></b>								
Tension resistance of steel	$N_{sa}$	lbf	12,760		14,980		19,930	
Strength reduction factor-steel failure	$\Phi_{sa}$	—	0.65					
<b>Concrete Breakout Strength in Tension (ACI 318 Section D.5.2)</b>								
Effectiveness factor-uncracked concrete	$k_{uncr}$	—	24					
Effectiveness factor-cracked concrete	$k_{cr}$	—	17					
Ratio of $k_{uncr}/k_{cr}$	$\chi_{c,N}$	—	1.41					
Strength reduction factor-concrete breakout failure	$\Phi_{cb}$	—	0.65					
<b>Pull-Out Strength in Tension (ACI 318 Section D.5.3)</b>								
Pullout resistance uncracked concrete ( $f'_c = 2,500$ psi)	$N_{pn,cr}$	lbf	4,737	5,115	7,082	12,734	N/A <sup>5</sup>	16,607
Pullout resistance cracked concrete ( $f'_c = 2,500$ psi)	$N_{pn,uncr}$	lbf	2,616	3,584	5,144	6,645	N/A <sup>5</sup>	11,849
Strength reduction factor-pullout failure	$\Phi_p$	—	0.65					
<b>Tension Strength for Seismic Applications (ACI 318 Section D.3.3.3)</b>								
Tension resistance of single anchor for seismic loads ( $f'_c = 2,500$ psi)	$N_{pn,eq}$	lbf	2,616	3,584	5,144	6,645	N/A <sup>5</sup>	11,849
Strength reduction factor-pullout failure	$\Phi_{eq}$	—	0.65					
Axial stiffness in service load range	$\beta$	lb/in	36,694		66,733		94,794	

For SI: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m

<sup>1</sup>The information presented in this table is to be used in conjunction with the design criteria of ACI 318 Appendix D; for anchors resisting seismic load combinations the additional requirements of ACI 318 Section D.3.3 must apply.

<sup>2</sup>Installation must comply with published instructions and details.

<sup>3</sup>All values of  $\Phi$  apply to the load combinations of ACI 318 Section 9.2. If the load combinations of ACI 318 Appendix C are used, the appropriate value of  $\Phi$  must be determined in accordance with ACI 318 D.4.5. For reinforcement that complies with ACI 318 Appendix D requirements for Condition A, the appropriate  $\Phi$  factor must be determined in accordance with ACI 318 D.4.4.

<sup>4</sup>The ANKR-TITE anchor is considered a brittle steel element as defined by ACI 318 D.1.

<sup>5</sup>Pullout strength will not control design of indicated anchors.

<sup>6</sup>The nominal pullout strength in tension of the 5/8"x 5-3/4" and the 3/4"x7" (anchor diameter x embedment depth) anchors in uncracked concrete can be adjusted by:

$$N_{pn,fc} = N_{p,uncr}(f'_c/2500)^{0.2} \text{ (lb, psi)} \text{ or } N_{pn,fc} = N_{p,cr}(f'_c/2500)^{0.2} \text{ (lb, psi)}$$

The nominal pullout strength in tension of all other anchors in uncracked and cracked concrete can be adjusted by:

$$N_{pn,fc} = N_{p,uncr}(f'_c/2500)^{0.5} \text{ (lb, psi)} \text{ or } N_{pn,fc} = N_{p,cr}(f'_c/2500)^{0.5} \text{ (lb, psi)}$$

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Title: CCAT Wedge Anchor  
 Drawing No: 1 Rev. 3  
 9/17/09 By: LM  
 Wej-It Fastening Systems  
 10541 E. Ute  
 Tulsa, OK 74116  
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**TABLE 3 - ANKR-TITE CCAT WEDGE ANCHOR CHARACTERISTIC SHEAR STRENGTH DESIGN VALUES<sup>1,2,3</sup>**

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)					
			1/2		5/8		3/4	
Anchor Category	1, 2, or 3	—	1		1		1	
Effective embedment depth	$h_{ef}$	in.	2 3/4	5	3 3/8	5 3/4	3 3/4	7
$l_e$	—	in.	2 3/4	5	3 3/8	5 3/4	3 3/4	7
$d_o$	—	in.	1/2	1/2	5/8	5/8	3/4	3/4
<b>Steel Strength in Shear (ACI 318 Section D.6.1)<sup>4</sup></b>								
Shear resistance of steel	$V_{sa}$	lbf	7,956		8,986		11,957	
Strength reduction factor-steel failure	$\Phi_{sa}$	—	0.60					
<b>Concrete Breakout Strength in Shear (ACI 318 Section D.6.2)</b>								
Effectiveness factor-uncracked concrete	$k_{uncr}$	—	24					
Effectiveness factor-cracked concrete	$k_{cr}$	—	17					
Ratio of $k_{uncr}/k_{cr}$	$\chi_{c,N}$	—	1.41					
Strength reduction factor-concrete breakout failure	$\Phi_{cb}$	—	0.70					
<b>Shear Resistance</b>								
Shear resistance uncracked concrete ( $f'_c = 2,500$ psi)	$V_{pn,cr}$	lbf	5,804	7,257	7,217	8,986	8,683	11,957
Shear resistance cracked concrete ( $f'_c = 2,500$ psi)	$V_{pn,uncr}$	lbf	3,599	7,159	7,217	8,986	8,683	11,957
Strength reduction factor-pullout failure	$\Phi_p$	—	0.70					
<b>Shear Strength for Seismic Applications (ACI 318 Section D.3.3.3)</b>								
Shear resistance of single anchor for seismic loads ( $f'_c = 2,500$ psi)	$V_{pn,eq}$	lbf	3,239	6,476	5,055	8,154	8,504	11,957
Strength reduction factor-pullout failure	$\Phi_{eq}$	—	0.70					

For **SI**: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m

<sup>1</sup>The information presented in this table is to be used in conjunction with the design criteria of ACI 318 Appendix D; for anchors resisting seismic load combinations the additional requirements of ACI 318 Section D.3.3 must apply.

<sup>2</sup>Installation must comply with published instructions and details.

<sup>3</sup>All values of  $\Phi$  apply to the load combinations of ACI 318 Section 9.2. If the load combinations of ACI 318 Appendix C are used, the appropriate value of  $\Phi$  must be determined in accordance with ACI 318 D.4.5. For reinforcement that complies with ACI 318 Appendix D requirements for Condition A, the appropriate  $\Phi$  factor must be determined in accordance with ACI 318 D.4.4.

<sup>4</sup>The ANKR-TITE anchor is considered a brittle steel element as defined by ACI 318 D.1. Refer to ACI 318 Appendix D for design requirements.

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