



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

MKT Fastening, LLC
1 Gunnebo Drive
Lonoke, AR 72086

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section 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 Section (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. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section 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: Sup-R-Stud+ Wedge Anchor

APPROVAL DOCUMENT: Drawing No. 1, titled "Sup-R-Stud+", sheets 1 through 4 of 4, dated 12/16/2010, prepared by MKT Fastening, LLC, signed and sealed by Lee W. Mattis, P.E. on 09/22/2016, bearing the Miami-Dade County Product Control renewal stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

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 **renews NOA # 10-0928.01** and 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.**

CMU
10/24/16

NOA No: 16-0203.03
Expiration Date:
Approval Date:
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. 1, titled "Sup-R-Stud+", sheets 1 through 4 of 4, dated 12/16/2010, prepared by MKT Fastening, LLC, signed and sealed by Lee W. Mattis, P.E. on 09/22/2016.

B. TESTS *"Submitted under NOA # 10-0928.01"*

1. Test report on Tension and Shear Strength Design Values of 3/8", 1/2" and 5/8" diameter Sup-R-Stud+ Wedge Anchors per ACI 355.2 and ASTM E 488, prepared by CEL Consulting, Test Report No. **10M195**, dated 08/31/2010, signed and sealed by Lee W. Mattis, P.E.
2. Test report on Corrosion Resistance of Sup-R-Stud+ Wedge Anchors per ASTM G 85, Annex 5 and TAS 114, Appendix E, prepared by Sub-Tropical Testing Service, Inc, Test Report No. **STTS-11001**, dated 01/16/2011, signed by Mark Mosbat, P.E.

C. CALCULATIONS

1. None.

D. MATERIAL CERTIFICATIONS

1. None.

E. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

F. STATEMENTS

1. Statement letter of code conformance to the 5th edition (2014) FBC issued by CEL Consulting, dated 01/07/2016, signed and sealed by Lee W. Mattis, P.E.

"Submitted under NOA # 10-0928.01"

2. Statement letter of conformance to the FBC 2007 and no financial interest issued by CEL Consulting, dated 11/24/10, signed and sealed by Lee W. Mattis, P.E.

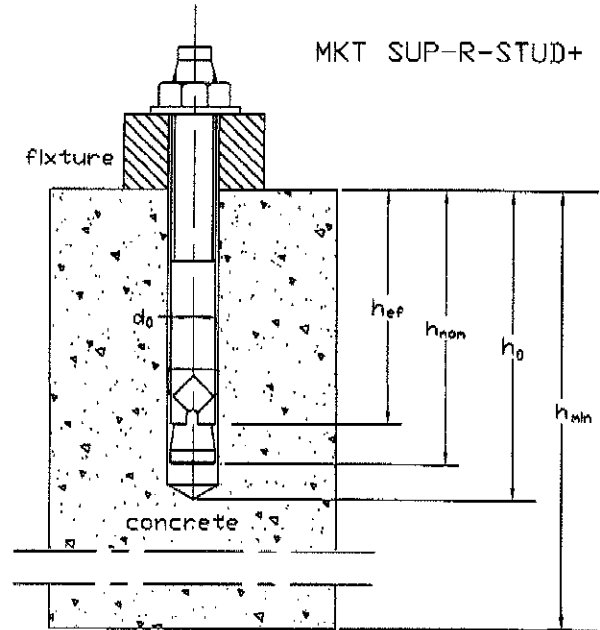
CMU
10/24/16

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No 16-0203.03
Expiration Date:
Approval Date:

MKT Sup-R-Stud+

Description: The Sup-R-Stud+ anchor is a wedge type anchor designed for use in uncracked concrete. It consists of a threaded steel stud with a cone mandrel at the embedded end. A clip expander is fitted on the mandrel. The anchor is installed by driving into a hole drilled with a carbide bit of the same nominal diameter as the anchor. The anchor is set by tightening the nut against an attached fixture, forcing the clip outward against the concrete hole wall with increasing pressure as the cone mandrel is drawn upwards. Resistance to withdrawal is developed by a combination of friction and local crushing of the concrete hole wall.

Anchors bodies are made from UNS G10180 – G10220 with an electroplated zinc coating in conformance to ASTM B633, Type III, Class Fe/Zn 5, SC-1. The expansion clips are made from UNS S30400 stainless steel.

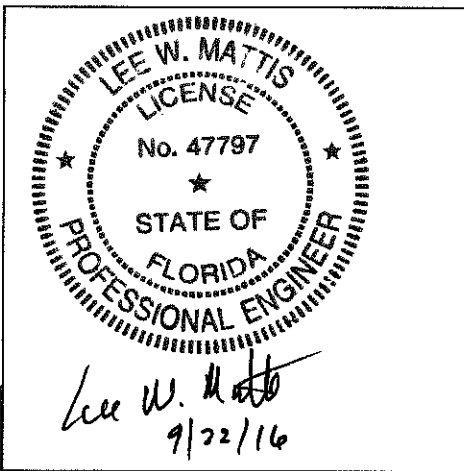


h_{eff}=effective embedment
h_{nom}=nominal embedment
h₀=min. hole depth
h_{min}=min. concrete thickness
d_a=anchor diameter

INSTALLATION INSTRUCTIONS

- 1 Drill the hole perpendicular to the surface with a carbide tipped bit that meets ANSI B212.15 specification using a rotary hammer drill with percussion. The drill bit size will be the same as the anchor diameter that is being installed. To assure full holding power do not ream the hole or allow the bit to wobble.
- 2 Drill the hole a minimum of 1/2" to 1" deeper than the specified embedment but not closer than two diameters to the bottom (opposite) surface of the concrete.
- 3 Blow out the hole with oil free compressed air. A clean hole is necessary for proper performance of the anchor.
- 4 Assemble the nut and washer so that the anchor extends above the nut slightly. Install/hammer the anchor through the material to be fastened.
- 5 Setting the Sup-R-Stud+ anchors with a torque wrench is recommended for optimum performance.
- 6 Follow installation instructions. If there is any confusion, contact us prior to installation of this product at 800-336-1640

Model Number	Size (inches)	Model Number	Size (inches)
2638214	3/8 x 2 1/4	2658312	5/8 x 3 1/2
2638234	3/8 x 2 3/4	2658412	5/8 x 4 1/2
2638300	3/8 x 3	2658500	5/8 x 5
2638334	3/8 x 3 3/4	2658600	5/8 x 6
2638500	3/8 x 5	2658700	5/8 x 7
		2658812	5/8 x 8 1/2
2612234	1/2 x 2 3/4	2658100	5/8 x 10
2612334	1/2 x 3 3/4		
2612414	1/2 x 4 1/4		
2612512	1/2 x 5 1/2		
2612700	1/2 x 7		



Lee W. Mattis, No. 47797

Title: Sup-R-Stud+
Drawing No: 1
12/16/10 By: LM

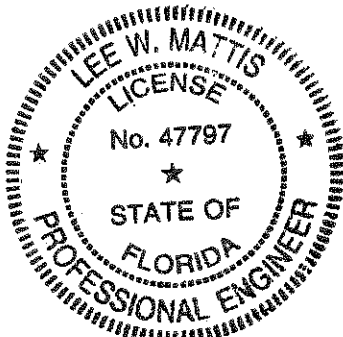
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TABLE 1 – SUP-R-STUD+ ANCHOR INSTALLATION INFORMATION¹

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)		
			3/8	1/2	5/8
Installation Information					
Outside diameter	d_o	in.	3/8	1/2	5/8
Nominal drill bit diameter	d	in.	3/8	1/2	5/8
Installation torque	T_{inst}	ft-lbf	20	40	60
Minimum nominal embedment depth	h_{nom}	in.	2-7/16	2-9/16	3-3/8
Effective embedment depth	h_{ef}	in.	2	2	2-3/4
Critical edge distance	c_{ac}	in.	4-1/2	4-7/8	7-1/2
Minimum edge distance	c_{min}	in.	2	2-1/2	2-1/4
Minimum spacing	s_{min}	in.	2-7/8	3	5-1/4
Minimum concrete thickness	h_{min}	in.	4	5	5
Anchor Data					
Specified yield strength of anchor steel	f_{ya}	psi	89,580	85,600	86,680
Specified tensile strength of anchor steel	f_{uta}	psi	96,030	89,770	90,470
Effective tensile stress area	$A_{se,N}$	in ²	0.056	0.109	0.173
Effective shear stress area	$A_{se,V}$	in ²	0.085	0.155	0.247

For SI: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m, 1 psi = 6.89 Pa, 1 in² = 645 mm², 1 lb/in = 0.175 N/mm

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



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TABLE 2 – SUP-R-STUD+ ANCHOR CHARACTERISTIC TENSION STRENGTH DESIGN VALUES^{1,2,3}

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)		
			3/8	1/2	5/8
Anchor Category	1, 2, or 3	—	1	1	1
Effective embedment depth	h_{ef}	in.	2	2	2-3/4
Steel Strength in Tension (ACI 318 Section D.5.1)⁴					
Tension resistance of steel	N_{sa}	lbf	5377	9784	15,651
Strength reduction factor-steel failure	ϕ	—	0.75		
Concrete Breakout Strength in Tension (ACI 318 Section D.5.2)					
Effectiveness factor-uncracked concrete	k_{un-cr}	—	24	30	30
Strength reduction factor-concrete breakout failure	ϕ	—	0.65 (Condition B)		
Pull-Out Strength in Tension (ACI 318 Section D.5.3)					
Pullout resistance uncracked concrete ($f_c = 2,500$ psi)	$N_{pn,un-cr}$	lbf	See Note 5		
Strength reduction factor-pullout failure	ϕ	—			

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

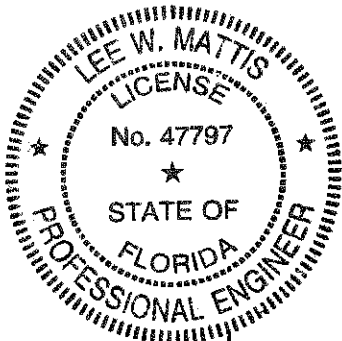
¹The information presented in this table is to be used in conjunction with the design criteria of ACI 318 Appendix D.

²Installation must comply with published instructions and details.

³All values of ϕ 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 ϕ 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 ϕ factor must be determined in accordance with ACI 318 D.4.4.

⁴The Sup-R-Stud+ anchor is considered a ductile steel element as defined by ACI 318 D.1.

⁵Pullout strength does not control design



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TABLE 3 – SUP-R-STUD+ ANCHOR CHARACTERISTIC SHEAR STRENGTH DESIGN VALUES^{1,2,3}

Characteristic	Symbol	Units	Nominal Anchor Diameter (inch)		
			3/8	1/2	5/8
Anchor Category	1, 2, or 3	—	1	1	1
Effective embedment depth	h_{ef}	in.	2	2	2-3/4
l_e	—	in.	2	2	2-3/4
d_a	—	in.	3/8	1/2	5/8
Steel Strength in Shear (ACI 318 Section D.6.1)^{4,5}					
Shear resistance uncracked concrete ($f_c = 2,500$ psi)	V_{sa}	lbf	3462	5564	10,239
Strength reduction factor	ϕ	—	0.65		
Concrete Breakout Strength in Shear (ACI 318 Section D.6.2)					
Strength reduction factor-concrete breakout failure	ϕ	—	0.70 (Condition B)		

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

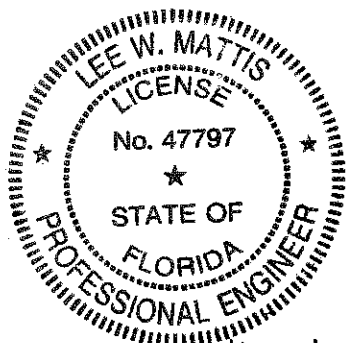
¹The information presented in this table is to be used in conjunction with the design criteria of ACI 318 Appendix D.

²Installation must comply with published instructions and details.

³All values of ϕ 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 ϕ 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 ϕ factor must be determined in accordance with ACI 318 D.4.4.

⁴The Sup-R-Stud+ anchor is considered a ductile steel element as defined by ACI 318 D.1. Refer to ACI 318 Appendix D for design requirements.

⁵Tabulated values for steel strength in shear must be used for design. These tabulated values are lower than calculated results using equation D-20 in ACI 318-08 (ACI 318-05) and ACI 318 D.6.1.2.



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