CATEGORY 1

- Seismic Zone Qualification
- Tension Zone
- Cracked Concrete

ICC ES
ICC-ES 3981

ESR-3981 - LABC - LARC
ESR-3981 - CBC - CRC
ESR-3981 - FBC

MIAMI-DADE COUNTY APPROVED
NOA 18-0403.04

BRIGHTON-BEST INTERNATIONAL

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082019

U.S. ANCHOR PRODUCTS are manufactured to the highest standards for construction and industrial applications. Our flagship ULTRAWEDGE™+ is manufactured from 1035 cold rolled steel.

It earned the coveted ICC-ES approval (ESR #3981) for cracked and un-cracked concrete. The Ultrawedge™+ anchor is approved by Miami-Dade County, Florida Building Code, Los Angeles Building and Residential Codes and California Building and Residential Codes.

The U.S. ANCHOR LINE includes a full line of light/ medium and heavy duty selections. This broad offering is backed up by a strong inventory commitment via 20+ national warehouses and a trained inside and outside salesforce. Additional testing of our products is ongoing with our in-house QC department as well as bi-annual ICC-ES supervised audits at our Ultrawedge™+ factory.

ANCHOR PRODUCT LINES

WEDGE ANCHORS ULTRAWEDGE™+
- Carbon Steel (BBI# 157)
- Hot Dipped Galvanized (BBI# 158)
- Acoustical (BBI# 279)
- Stainless Steel 304 (BBI# 616)
- Stainless Steel 316 (BBI# 617)

WEDGE ANCHORS
- Carbon Steel (Bulk) (BBI# 279)

SLEEVE ANCHORS
- Acorn Nut Carbon Steel (BBI# 276)
- Hex Nut Carbon Steel (BBI# 278)
- Flat Head Carbon Steel (BBI# 277)
- Round Head Carbon (BBI# 426)
- Hex Nut 303 Stainless (BBI# 618)

SLEEVE ANCHORS ROD HANGER TYPE
- Carbon Steel (BBI# R17)

DROP-IN ANCHORS
- Carbon Steel-US Anchor (BBI# 268)
- Carbon Steel-Shorty Version (BBI# 268)
- Carbon Steel-Commercial (Bulk) (BBI# 269)
- Carbon Steel-Commercial Shorty Version (BBI# 269)
- 304 Stainless-US Anchor (BBI# 618)

MACHINE SCREW ANCHORS
- Setting Tools (BBI# R06)

TAP-KING CONCRETE SCREWS HEX & FLAT HEAD RUSTPERT COATING (Pkg) (BBI# 660)

CONCRETE SCREWS (Bulk)
- Commercial Hex & Flat Head (BBI# 685)

DRILL BITS (SDS, STRAIGHT) FOR CONCRETE SCREWS (BBI# R62)

TOGGLE BOLTS
- Zinc (BBI# 893)
- Acoustical Zinc (BBI# 143)

TOGGLE WINGS (BBI# 262)

HAMMER DRIVE ANCHORS
- Mushroom Head with Zinc Nails (BBI# 266)
- Mushroom Head with 304 Nails (BBI# 265)

HOLLOW WALL ANCHORS
- Combo (Phil/Slot) Pan (BBI# 267)
- Drive Anchor Combo (Phil/Slot) Pan (BBI# 272)
- Setting Tool (BBI# R05)

LAG SCREW EXPANSION SHIELDS
- Short Zinc Alloy (BBI# 273)
- Long Zinc Alloy (BBI# 274)

SINGLE EXPANSION SHIELDS (BBI# 264)

DOUBLE EXPANSION SHIELDS (BBI# 263)

SPLIT FAST ANCHOR (Flat & Round Head) (BBI# 159)

CONICAL PLASTIC ANCHORS (BBI# 078)

CONICAL PLASTIC ANCHOR KIT (BBI# 079)

NYLON NAIL ANCHORS (BBI# R14)

EYECOUPLINGS (BBI# R37)

MUNGO
- Nylon Plug (BBI# 156 / R12)
- Universal Plug (BBI# R13)
- Jet Plug Kits (BBI# R11)

FRAMING ANCHORS (BBI# R08)

HAMMER SCREWS (BBI# R10)

L SHAPED ANCHOR BOLT WITH NUT & WASHER HDG (BBI# 432)

WOOD SCREW ANCHOR LEAD ALLOY (BBI# 280)

PROFERRED® CARBIDE (BBI# C10)
- SDS+
- SDS Max
- Straight Shank
- Concrete Screw Bits
- Specialty Bits

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ULTRAWEDGE™ ANCHOR

ULTRAWEDGE™+ CRACKED CONCRETE APPROVED	
Part #	**Size**
157060	3/8”X2 1/4”
157070	3/8”X2 3/4”
157080	3/8”-16X3”
157090	3/8”-16X3 3/4”
157100	3/8”-16X5”
157110	3/8”-16X6 1/2”
157180	1/2”X2 3/4”
157190	1/2”-13X3 3/4”
157200	1/2”-13X4 1/4”
157210	1/2”-13X4 1/2”
157220	1/2”-13X5 1/2”
157230	1/2”-13X7”
157240	1/2”-13X8 1/2”
157250	1/2”-13X10”
157260	1/2”-13X12”
157300	5/8”X3 1/2”
157310	5/8”-11X4 1/2”
157320	5/8”-11X5”
157330	5/8”-11X6”
157340	5/8”-11X7”
157350	5/8”-11X8 1/2”
157360	5/8”-11X10”
157370	5/8”-11X12”
157380	3/4”-10X4 1/4”
157390	3/4”-10X4 3/4”
157400	3/4”-10X5 1/2”
157410	3/4”-10X6 1/4”
157420	3/4”-10X7”
157430	3/4”-10X8 1/2”
157440	3/4”-10X10”
157450	3/4”-10X12”

Select anchor length to achieve minimum embedment which will depend on the thickness of the fixture being attached.

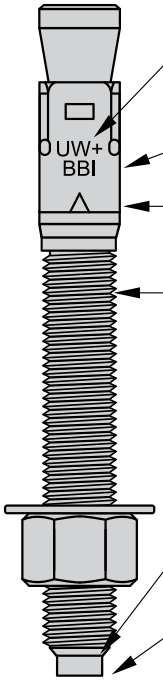
(SEE ESR# 3981 REPORT FOR MINIMUM EMBEDMENTS & OTHER REQUIREMENTS)

ULTRAWEDGE™ 304 STAINLESS	
Part #	**Size**
616010	1/4”-20X1 3/4”
616020	1/4”-20X2 1/4”
616030	1/4”-20X3 1/4”
616040	3/8”-16X2 1/4”
616050	3/8”-16X2 3/4”
616060	3/8”-16X3”
616070	3/8”-16X3 3/4”
616080	3/8”-16X5”
616090	3/8”-16X6 1/2”
616100	1/2”-13X2 3/4”
616110	1/2”-13X3 3/4”
616120	1/2”-13X4 1/4”
616130	1/2”-13X5 1/2”
616140	1/2”-13X7”
616150	1/2”-13X8 1/2”
616160	1/2”-13X10”
616170	1/2”-13X12”
616180	5/8”-11X3 1/2”
616190	5/8”-11X4 1/2”
616200	5/8”-11X5”
616210	5/8”-11X6”
616220	5/8”-11X7”
616230	5/8”-11X8 1/2”
616240	5/8”-11X10”
616250	5/8”-11X12”
616260	3/4”-10X4 1/4”
616270	3/4”-10X4 3/4”
616280	3/4”-10X5 1/2”
616290	3/4”-10X7”
616300	3/4”-10X8 1/2”
616310	3/4”-10X10”
616320	3/4”-10X12”
616330	3/4”-10X6 1/4”
616340	7/8”-9X6”
616350	7/8”-9X8”
616360	1”-8X6”
616370	1”-8X9”
616380	1”-8X12”

ULTRAWEDGE™ 316 STAINLESS	
Part #	**Size**
617010	1/4”-20X1 3/4”
617020	1/4”-20X2 1/4”
617030	1/4”-20X3 1/4”
617040	3/8”-16X2 3/4”
617050	3/8”-16X3”
617060	3/8”-16X3 3/4”
617070	3/8”-16X5”
617080	1/2”-13X2 3/4”
617090	1/2”-13X3 3/4”
617100	1/2”-13X4 1/4”
617110	1/2”-13X5 1/2”
617120	1/2”-13X7”
617130	5/8”-11X3 1/2”
617140	5/8”-11X4 1/2”
617150	5/8”-11X5”
617160	5/8”-11X6”
617170	5/8”-11X7”
617180	5/8”-11X8 1/2”
617190	3/4”-10X4 1/4”
617200	3/4”-10X4 3/4”
617210	3/4”-10X5 1/2”
617220	3/4”-10X6 1/4”
617230	3/4”-10X7”
617240	3/4”-10X8 1/2”

ULTRAWEDGE™ HOT DIP GALV.	
Part #	**Size**
158010	3/8”-16X3 1/2”
158100	1/2”-13X2 3/4”
158110	1/2”-13X3 3/4”
158120	1/2”-13X4 1/4”
158130	1/2”-13X5 1/2”
158140	1/2”-13X7”
158150	1/2”-13X8 1/2”
158160	1/2”-13X10”
158200	5/8”-11X3 1/2”
158210	5/8”-11X5”
158220	5/8”-11X6”
158230	5/8”-11X7”
158240	5/8”-11X8 1/2”
158250	5/8”-11X10”
158300	3/4”-10X4 3/4”
158310	3/4”-10X5 1/2”
158320	3/4”-10X6 1/4”
158330	3/4”-10X8 1/2”
158340	3/4”-10X10”
158400	7/8”-9X6”
158410	7/8”-9X8”
158500	1”-8X6”
158510	1”-8X9”

The newly improved Ultrawedge™+ anchor has been designed for heavy duty applications with impressive performance characteristics. The advanced design of the collar allows for anchoring in the most demanding requirements.



TRADEMARKED
Indicates proprietary product insuring consistent quality.

360 DEGREE COLLAR

1035 COLD ROLLED STEEL

LONGER THREAD LENGTH
Gives greater versatility in anchor embedment depth with one anchor.

IMPRESSIVE PERFORMANCE
Cracked & Un-cracked approved.

BULL NOSE HEAD
Helps to ensure that threads won't be damaged during installation.

HEAD STAMPED
Helps determine length of anchor after installation.

ICC ES

ICC-ES 3981

ESR-3981 - LABC - LARC
ESR-3981 - CBC - CRC
ESR-3981 - FBC

MIAMI-DADE COUNTY APPROVED

NOA 18-0403.04

SLEEVE ANCHOR

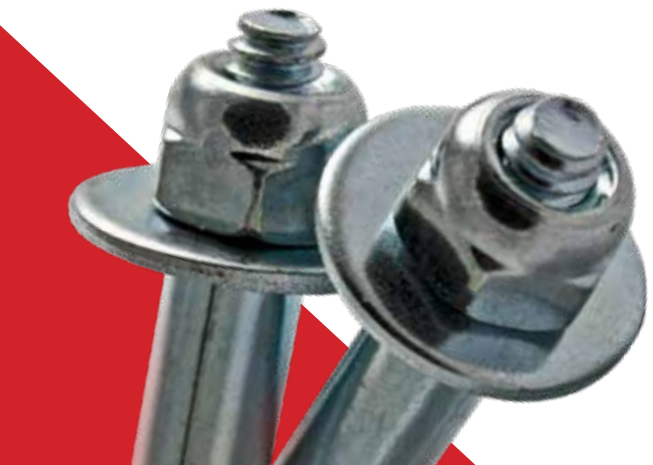
MEDIUM DUTY SLEEVE ANCHOR PROGRAM

SLEEVE ANCHOR - ACORN HEAD

Part #	Pack	VD	Size
276015	100PCS	PR	**1/4”-20 X 7/8”**
276020	100PCS	PR	**1/4”-20 X 1 3/8”**
276030	100PCS	PR	**1/4”-20 X 2 1/4”**

SLEEVE ANCHOR - HEX NUT

Part #	Pack	VD	Size
278030	100PCS	PR	**5/16” X 1 1/2”**
278040	100PCS	PR	**5/16” X 2 1/2”**
278050	50PCS	PR	**3/8” X 1 7/8”**
278060	50PCS	PR	**3/8” X 3”**
278070	50PCS	PR	**3/8” X 4”**
278080	25PCS	PR	**1/2” X 2 1/4”**
278090	25PCS	PR	**1/2” X 3”**
278100	25PCS	PR	**1/2” X 4”**
278110	25PCS	PR	**1/2” X 6”**
278120	25PCS	PR	**5/8” X 2 1/4”**
278130	25PCS	PR	**5/8” X 3”**
278135	10PCS	PR	**5/8” X 3 7/8”**
278140	10PCS	PR	**5/8” X 4 1/4”**
278150	10PCS	PR	**5/8” X 6”**
278160	10PCS	PR	**3/4” X 2 1/2”**
278180	5PCS	PR	**3/4” X 4 1/4”**
278190	5PCS	PR	**3/4” X 6 1/4”**



SLEEVE ANCHOR - FLAT HEAD

Part #	Pack	VD	Size
277220	100PCS	PR	**1/4” X 2” Threshold**

SLEEVE ANCHOR - ROUND HEAD COMBO

Part #	Pack	VD	Size
426005	100PCS	PR	**1/4” X 1 1/4”**

SLEEVE ANCHOR - ROUND HEAD

Part #	Pack	VD	Size
426010	100PCS	PR	**1/4” X 2”**
426022	100PCS	PR	**1/4” X 2 3/4”**
426020	50PCS	PR	**3/8” X 2 1/2”**
426030	50PCS	PR	**3/8” X 3 3/4”**
426040	50PCS	PR	**3/8” X 4 3/4”**

SLEEVE TYPE ROD HANGERS

Part #	Pack	VD	Size
R17003	50PCS	PR	**5/16” X 1 1/2”**
R17002	50PCS	PR	**3/8” X 1 7/8”**
R17001	25PCS	PR	**1/2” X 2 1/4”**
R17004	20PCS	PR	**5/8” X 2 1/4”**

TAPKING™

STANDARD TAPKING™ CONCRETE SCREWS

TAPKING™ CONCRETE SCREWS - HEX HEAD

Part #	Size
660010	3/16" X 1 1/4"
660015	3/16" X 1 3/4"
660020	3/16" X 2 1/4"
660025	3/16" X 2 3/4"
660030	3/16" X 3 1/4"
660035	3/16" X 4"
660050	1/4" X 1 1/4"
660055	1/4" X 1 3/4"
660060	1/4" X 2 1/4"
660070	1/4" X 2 3/4"
660080	1/4" X 3 1/4"
660090	1/4" X 4"
660100	1/4" X 5"
660110	1/4" X 6"

TAPKING™ CONCRETE SCREWS - FLAT HEAD

Part #	Size
660200	3/16" X 1 1/4"
660210	3/16" X 1 3/4"
660220	3/16" X 2 1/4"
660230	3/16" X 2 3/4"
660240	3/16" X 3 1/4"
660250	3/16" X 4"
660260	1/4" X 1 1/4"
660270	1/4" X 1 3/4"
660280	1/4" X 2 1/4"
660290	1/4" X 2 3/4"
660300	1/4" X 3 1/4"
660310	1/4" X 4"
660320	1/4" X 5"
660330	1/4" X 6"

MIAMI-DADE COUNTY APPROVED

NOA 19.0326.03

SUITABLE FOR STANDARD CONCRETE BITS AND SDS-HEX ROTARY HAMMER DRILL BITS

Concrete Screw	Length	Drill Bit	Part#
3/16"	1-1/4", 1-3/4"	5/32" x 3-1/2"	R62004
3/16"	2-1/4", 2-3/4"	5/32" x 4-1/2"	R62005
3/16"	3-1/4", 3-3/4", 4"	5/32" x 5-1/2"	R62006
1/4"	1-1/4", 1-3/4"	3/16" x 3-1/2"	R62008
1/4"	2-1/4", 2-3/4"	3/16" x 4-1/2"	R62003
1/4"	3-1/4", 3-3/4", 4"	3/16" x 5-1/2"	R62001
1/4"	5"	3/16" x 6-3/4"	R62002

To Insert Drill Bit

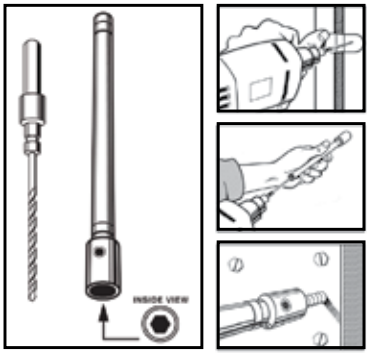
Loosen set screw on side of drill adapter with 1/8" hex key. Do not remove completely. Align flat side of concrete drill bit with set screw and tighten screw.

To Drill

Place drill adapter into 3/8" or 1/2" chuck of standard hammer drill. Place drill bit in drill adapter and tighten set screw. Drill hole minimum of 1/4" deeper than TAPKING™ anchor or concrete screw is to be embedded.

To Drive

Slide sleeve over drill bit and snap onto drill adapter. Snap proper socket into end of sleeve. Insert head of TAPKING™ anchor or concrete screw into socket. Drive until anchor is fully embedded.



DROP IN ANCHOR

DROP IN ANCHOR - CARBON STEEL
(INCLUDES FREE SETTING TOOL IN BOX)

Part #	Size
268010	1/4”
268020	3/8”
268030	1/2”
268040	5/8”
268050	3/4”

DROP IN ANCHOR - 304 STAINLESS
(INCLUDES FREE SETTING TOOL IN BOX)

Part #	Size
619010	1/4”
619020	3/8”
619030	1/2”
619040	5/8”
619050	3/4”

SHORTY DROP IN
(INCLUDES FREE SETTING TOOL IN BOX)

Part #	Size
268220	3/8”

ICC-ES Evaluation Report

ESR-3981

Reissued October 2018

This report is subject to renewal October 2020.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-Installed Concrete Anchors

REPORT HOLDER:

BRIGHTON BEST INTERNATIONAL, INC.

EVALUATION SUBJECT:

US ANCHOR ULTRAWEDGE+ WEDGE ANCHORS IN CRACKED AND UNCRACKED CONCRETE

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015, 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2015, 2012, 2009 and 2006 *International Residential Code®* (IRC)

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see ESR-3981 LABC and LARC Supplement

Property evaluated:

Structural

2.0 USES

US Anchor Ultrawedge+ Wedge Anchors are used as anchorage in cracked and uncracked normalweight concrete and lightweight concrete having a specified compressive strength, f'_c, of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa) to resist static, wind, seismic tension and shear loads.

The US Anchor Ultrawedge+ Wedge Anchors comply with anchors as described in Section 1901.3 of 2015 IBC, Section 1909 of the 2012 IBC, and Section 1912 of the 2009 and 2006 IBC. The anchors are alternatives to cast-in-place anchors described in Section 1908 of the 2012 IBC and Section 1911 of the 2009 and 2006 IBC. The anchors may also be used under the IRC where an engineered design is submitted in accordance with Section R301.1.3.

3.0 DESCRIPTION

3.1 US Anchor Ultrawedge+ Wedge Anchors:

The US Anchor Ultrawedge+ Wedge Anchors are torque-controlled, mechanical expansion anchors. The anchors consist of a stud (anchor body), nut, washer, and expander wedge (clip) as illustrated in Figure 1 of this report. The stud for all sizes is manufactured from cold-drawn carbon steel meeting the requirements of UNS G10350 and is partially threaded with one end terminating in a flared mandrel. The expander wedge (clip) is manufactured from Chinese steel standard GB/T3522 Grade 50 steel subsequently through hardened to Rockwell HRC 28-32 and is formed around the stud mandrel so it is able to move freely. The clip movement is restrained by the mandrel taper and by a collar. The anchor is installed in a predrilled hole with a hammer. When torque is applied to the nut of the installed anchor, the mandrel is drawn into the expansion element, which is in turn expanded against the wall of the drilled hole. All components, including nuts and washers, are zinc-coated in accordance with ASTM B633 classification SC1, Type III. Installation information and dimensions are set forth in Section 4.3 and Table 1 and Table 2 of this report.

3.2 Concrete:

Normalweight and lightweight concrete must comply with Sections 1903 and 1905 of the IBC, as applicable.

4.0 DESIGN AND INSTALLATION

4.1 Strength Design:

4.1.1 General: Design strength of anchors complying with the 2015 IBC, as well as Section R301.1.3 of the 2015 IRC must be determined in accordance with ACI 318-14 Chapter 17 and this report.

Design strength of anchors complying with the 2012 IBC, as well as Section R301.1.3 of the 2012 IRC, must be determined in accordance with ACI 318-11 Appendix D and this report.

Design strength of anchors complying with the 2009 IBC, as well as Section R301.1.3 of the 2009 IRC, must be determined in accordance with ACI 318-08 Appendix D and this report.

Design strength of anchors complying with the 2006 IBC and Section R301.1.3 of the 2006 IRC must be determined in accordance with ACI 318-05 Appendix D and this report.

The strength design of anchors must comply with ACI 318-14 17.3.1 or ACI 318 (-11, -08, -05) D.4.1, as applicable. Strength reduction factors, ϕ, as given in ACI 318-14 17.3.3 or ACI 318-11 D.4.3 or ACI 318 (-08, -05) D.4.4, as applicable, and noted in Table 1 of this report, must be used for load combinations calculated in accordance with Section 1605.2 of the IBC, Section 5.3 of ACI 318-14 and Section 9.2 of ACI 318 (-11, -08, -05), as applicable. Strength reduction factors, ϕ, given in ACI 318-11 D.4.4 or ACI 318 (-08, -05) D.4.5 must be used for load combinations calculated in accordance with ACI 318 (-11, -08, -05), Appendix C. The value of f'_c, used

in calculations must be limited to a maximum of 8,000 psi (55.2 MPa), in accordance with ACI 318-14 17.2.7 or ACI 318-11 D.3.7, as applicable.

4.1.2 Requirements for Static Steel Strength in Tension, N_{sa}: The nominal steel strength of a single anchor in tension, N_{sa}, calculated in accordance with ACI 318-14 17.4.1.2 or ACI 318 (-11, -08, -05) D.5.1.2, as applicable, must be calculated based on the information given in Table 1 and must be used for design. The strength reduction factor, ϕ, corresponding to a ductile steel element may be used.

4.1.3 Requirements for Static Concrete Breakout Strength in Tension, N_{cb} or N_{cbg}: The nominal concrete breakout strength of a single anchor or a group of anchors in tension (N_{cb} and N_{cbg}, respectively), must be calculated in accordance with ACI 318-14 17.4.2 or ACI 318 (-11, -08, -05) D.5.2, as applicable, with modifications as described in this section. The basic concrete breakout strength in tension, N_b, must be calculated in accordance with ACI 318-14 17.4.2.2 or ACI 318 (-11, -08, -05) D.5.2.2, as applicable, using the values of h_{ef}, k_{cr} and k_{uncr} as given in Table 1 of this report. The nominal concrete breakout strength in tension in regions of concrete where analysis indicates no cracking at service loads must be calculated in accordance with ACI 318-14 17.4.2.6 or ACI 318 (-11, -08, -05) D.5.2.6, as applicable, with $\Psi_{c,N}$ = 1.0 and k_{uncr} as given in Table 1. The value of f'_c used in the calculations must be limited to 8,000 psi (55.2 MPa), in accordance with ACI 318-14 17.2.7 or ACI 318-11 D.3.7, as applicable.

4.1.4 Requirements for Pullout Strength in Tension, N_{pn}: The nominal pullout strength of a single anchor in tension in accordance with ACI 318-14 17.4.3 or ACI 318 (-11, -08, -05) D.5.3, as applicable, in cracked and uncracked concrete, $N_{p,cr}$ *and* $N_{p,uncr}$, respectively, is given in Table 1. In lieu of ACI 318-14 17.4.3.6 or ACI 318 (-11, -08, -05) D.5.3.6, as applicable, $\psi_{c,P}$ = 1.0 for all design cases. In accordance with ACI 318-14 17.4.3 or ACI 318 -11, -08, -05) D.5.3, as applicable the nominal pullout strength in cracked concrete may be calculated in accordance with the following equation:

$$N_{p,f'_c} = N_{p,cr}\sqrt{\frac{f'_c}{2{,}500}} \quad \text{(lb, psi)} \qquad \text{(Eq-1)}$$

$$N_{p,f'_c} = N_{p,cr}\sqrt{\frac{f'_c}{17.2}} \quad \text{(N, MPa)}$$

In regions where analysis indicates no cracking in accordance with ACI 318-14 17.4.3.6 or ACI 318 (-11, -08, -05) D5.3.6 as applicable, the nominal pullout strength in tension may be calculated in accordance with the following equation:

$$N_{p,f'_c} = N_{p,uncr}\sqrt{\frac{f'_c}{2{,}500}} \quad \text{(lb, psi)} \qquad \text{(Eq-2)}$$

$$N_{p,f'_c} = N_{p,uncr}\sqrt{\frac{f'_c}{17.2}} \quad \text{(N, MPa)}$$

Where values for $N_{p,cr}$ or $N_{p,uncr}$ are not provided in Table 1 of this report, the pullout strength in tension need not be evaluated.

4.1.5 Requirements for Static Steel Strength in shear, V_{sa}: The nominal steel strength in shear, V_{sa}, of a single anchor in accordance with ACI 318-14 17.5.1.2 or ACI 318 (-11, -08, -05) D.6.1.2, as applicable, is given in Table 1 of this report and must be used in lieu of the values derived by calculation from ACI 318-14 Eq. 17.5.1.2b or ACI 318 (-11, -08, -05) Eq. D-29, as applicable. The strength reduction factor, ϕ, corresponding to a ductile steel element may be used.

4.1.6 Requirements for Static Concrete Breakout Strength in Shear, V_{cb} or V_{cbg}: The nominal concrete breakout strength of a single anchor or group of anchors in shear (V_{cb} or V_{cbg}, respectively), must be calculated in accordance with ACI 318-14 17.5.2 or ACI 318 (-11, -08, -05) D.6.2, as applicable, with modifications as described in this section. The basic concrete breakout strength in shear, V_b, must be calculated in accordance with ACI 318-14 17.5.2.2 or ACI 318 (-11, -08, -05) D.6.2.2, as applicable, based on the values provided in Table 1 of this report and using the value of l_e according to Table 1 of this report.

4.1.7 Requirements for Static Concrete Pryout Strength of Anchor in Shear, V_{cp} or V_{cpg}: The nominal concrete pryout strength of a single anchor or group of anchors (V_{cp} or V_{cpg}, respectively), must be calculated in accordance with ACI 318-14 17.5.3 or ACI 318 (-11, -08, -05) D.6.3, as applicable, modified by using the value of k_{cp} provided in Table 1 and the value of N_{cb} or N_{cbg} as calculated in Section 4.1.3 of this report.

4.1.8 Requirements for Seismic Design:

4.1.8.1 General: For load combinations including seismic, the design must be performed in accordance with ACI 318-14 17.2.3 or ACI 318 (-11, -08, -05) D.3.3, as applicable. Modifications to ACI 318-14 17.2.3 shall be applied under Section 1905.1.8 of the 2015 IBC. For the 2012 IBC, Section 1905.1.9 shall be omitted. Modifications to ACI 318 (-08, -05) D.3.3 shall be applied under Section 1908.1.9 of the 2009 IBC, or Section 1908.1.16 of the 2006 IBC, as applicable.

The anchors must comply with ACI 318-14 2.3 or ACI 318-11 D.1, as applicable, as ductile steel elements and must be designed in accordance with ACI 318-14 17.2.3.4, 17.2.3.5, 17.2.3.6 or 17.2.3.7; or ACI 318-11 D.3.3.4, D.3.3.5, D.3.3.6 or D.3.3.7; ACI 318-08 D.3.3.4, D.3.3.5 or D.3.3.6; or ACI 318-05 D.3.3.4 or D.3.3.5, as applicable. Strength reduction factors, ϕ, are given in Table 1 of this report. The anchors may be installed in Seismic Design Categories A through F of the IBC.

4.1.8.2 Seismic Tension: The nominal steel strength and nominal concrete breakout strength for anchors in tension must be calculated in accordance with ACI 318-14 17.4.1 and 17.4.2 or ACI 318-11 D.5.1 and D.5.2, as applicable, as described in Sections 4.1.2 and 4.1.3 of this report. In accordance with ACI 318-14 17.4.3.2 or ACI 318-11 D.5.3.2, as applicable, the appropriate pullout strength in tension for seismic loads, $N_{p,eq}$, described in Table 1 must be used in lieu of N_p, as applicable. The value of $N_{p,eq}$ may be adjusted by calculation for concrete strength in accordance with Eq-1 and Section 4.1.4 of this report. If no values for $N_{p,eq}$ are given in Table 1, the static design strength values govern.

4.1.8.3 Seismic Shear: The nominal concrete breakout strength and pryout strength in shear must be calculated in accordance with ACI 318-14 17.5.2 and 17.5.3 or ACI 318-11 D.6.2 and D.6.3, respectively, as applicable, as described in Sections 4.1.6 and 4.1.7 of this report. In accordance with ACI 318-14 17.5.1.2 or ACI 318-11 D.6.1.2, as applicable, the appropriate value for nominal steel strength for seismic loads, $V_{sa,eq}$ described in Table 1 must be used in lieu of V_{sa}, as applicable.

4.1.9 Requirements for Interaction of Tensile and Shear Forces: For anchors or groups of anchors that are

subjected to the effects of combined tensile and shear forces, the design must be determined in accordance with ACI 318-14 17.6 or ACI 318 (-11, -08, -05) D.7, as applicable.

4.1.10 Requirements for Critical Edge Distance: In applications where the installed edge distance $c < c_{ac}$ and supplemental reinforcement to control splitting of the concrete is not present, the concrete breakout strength for the anchors loaded in tension for uncracked concrete, calculated in accordance with ACI 318-14 17.4.2 or ACI 318 (-11, -08, -05) D.5.2, as applicable, must be further multiplied by the factor $\Psi_{cp,N}$ as given by Eq-3:

$$\Psi_{cp,N}=\frac{c}{c_{ac}} \quad \textit{(Eq-3)}$$

where the factor $\Psi_{cp,N}$ need not be taken as less than $\frac{1.5h_{ef}}{c_{ac}}$.

For all other cases, $\Psi_{cp,N}$ = 1.0. In lieu of using ACI 318-14 17.7.6 or ACI 318 (-11, -08, -05) D.8.6, as applicable, values of c_{ac} must be taken from Table 1. In all cases, c must not be less than c_{min} described in Table 1 of this report.

4.1.11 Requirements for Minimum Member Thickness, Minimum Anchor Spacing and Minimum Edge Distance: In lieu of using ACI 318-14 17.7.1 and 17.7.3 or ACI 318 (-11, -08, -05) D.8.1 and D.8.3, as applicable, values of s_{min} and c_{min} as given in Table 1 of this report must be used. In lieu of using ACI 318-14 17.7.5 or ACI 318 (-11 -08, -05) D.8.5, as applicable, minimum member thicknesses h_{min} as given in Table 1 of this report must be used.

4.1.12 Lightweight Concrete: For the use of anchors in lightweight concrete, the modification factor λ_a equal to 0.8λ is applied to all values of $\sqrt{f'_c}$ affecting N_n and V_n.

For ACI 318-14 (2015 IBC), ACI 318-11 (2012 IBC) and ACI 318-08 (2009 IBC), λ shall be determined in accordance with the corresponding version of ACI 318.

For ACI 318-05 (2006 IBC), λ shall be taken as 0.75 for all lightweight concrete and 0.85 for sand-lightweight concrete. Linear interpolation shall be permitted if partial sand replacement is used. In addition, the pullout strengths $N_{p,uncr}$, $N_{p,cr}$ and $N_{p,eq}$ shall be multiplied by the modification factor, λ_a, as applicable.

4.2 Allowable Stress Design (ASD):

4.2.1 General: Design values for use with allowable stress design (working stress design) load combinations, calculated in accordance with Section 1605.3 of the IBC, must be established in accordance with the following equations:

$$T_{allowable,ASD} = \frac{\phi N_n}{\alpha}$$

$$V_{allowable,ASD} = \frac{\phi V_n}{\alpha}$$

where:

$T_{allowable,ASD}$ = Allowable tension load (lbf or kN)

$V_{allowable,ASD}$ = Allowable shear load (lbf or kN)

ϕN_n = Lowest design strength of an anchor or anchor group in tension as determined in accordance with ACI 318-14 Chapter 17 and 2015 IBC Section 1905.1.8, ACI 318-11 Appendix D, ACI 318-08 Appendix D and 2009 IBC Section 1908.1.9, ACI 318-05 Appendix D and 2006 IBC Section 1908.1.16, and Section 4.1 of this report as applicable. (lbf or kN).

ϕV_n = Lowest design strength of an anchor or anchor group in shear as determined in accordance with ACI 318-14 Chapter 17 and 2015 IBC Section 1905.1.8, ACI 318-11 Appendix D, ACI 318-08 Appendix D and 2009 IBC Section 1908.1.9, ACI 318-05 Appendix D and 2006 IBC Section 1908.1.16, and Section 4.1 of this report as applicable. (lbf or kN).

α = Conversion factor calculated as a weighted average of the load factors for the controlling load combination. In addition, α must include all applicable factors to account for nonductile failure modes and required over-strength.

The requirements for member thickness, edge distance and spacing, described in this report, must apply. An example of allowable stress design values for illustrative purposes is provided in Table 3 of this report.

4.2.2 Interaction of Tensile and Shear Forces: The interaction must be calculated and consistent with ACI 318-14 17.6 or ACI 318 (-11, -08, -05) D.7, as applicable, as follows:

For shear loads $V_{applied} \le 0.2V_{allowable,ASD}$, the full allowable load in tension must be permitted.

For tension loads $T_{applied} \le 0.2T_{allowable,ASD}$, the full allowable load in shear must be permitted.

For all other cases:

$$\frac{T_{applied}}{T_{allowable,ASD}}+\frac{V_{applied}}{V_{allowable,ASD}} \le 1.2 \quad \textit{(Eq-4)}$$

4.3 Installation:

Installation parameters such as embedment, spacing, edge distance, and concrete requirements, are provided in Table 1 and Figure 2.

Anchor locations must comply with this report, and plans and specifications approved by the code official. US Anchor Ultrawedge+ Wedge Anchors must be installed in accordance with the manufacturer's published installation instructions and this report (see installation instructions at the end of this report). In case of conflict, this report governs.

4.4 Special Inspection:

Periodic special inspection is required in accordance with Section 1705.1.1 and Table 1705.3 of the 2015 IBC and 2012 IBC, Section 1704.15 and Table 1704.4 of the 2009 IBC, or Section 1704.13 of the 2006 IBC, as applicable. The special inspector must make periodic inspections during anchor installation to verify anchor type, anchor dimensions, concrete type, concrete compressive strength, drill bit type, hole dimensions, hole cleaning procedure, concrete member thickness, anchor embedment, anchor spacing, edge distances, tightening torque and adherence to the manufacturer's printed installation instructions. The special inspector must be present as often as required in accordance with the "statement of special inspection." Under the IBC, additional requirements as set forth in Sections 1705, 1706 and 1707 must be observed, when applicable.

5.0 CONDITIONS OF USE

The US Anchor Ultrawedge+ Wedge Anchors described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The anchors must be installed in accordance with the manufacturer's published installation instructions and this report. In case of a conflict, this report governs.

5.2 The anchors must be limited to use in cracked and uncracked normal-weight concrete and lightweight concrete having a specified compressive strength, f'_c, of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa).

5.3 Anchor sizes, dimensions, minimum embedment depths, and other installation parameters are as set forth in this report.

5.4 The values of f'_c used for calculation purposes must not exceed 8,000 psi (55.1 MPa).

5.5 The concrete shall have attained its minimum design strength prior to the installation of the anchors.

5.6 Strength design values must be established in accordance with Section 4.1 of this report.

5.7 Allowable stress design values must be established in accordance with Section 4.2.

5.8 Anchor spacing(s) and edge distance(s) as well as minimum member thickness must comply with Table 1.

5.9 Prior to installation, calculations and details demonstrating compliance with this report must be submitted to the code official. The calculations and details must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

5.10 Since an ICC-ES acceptance criteria for evaluating data to determine the performance of anchors subjected to fatigue or shock loading is unavailable at this time, the use of these anchors under such conditions is beyond the scope of this report.

5.11 Anchors may be installed in regions of concrete where cracking has occurred or where analysis indicates cracking may occur ($f_t > f_r$), subject to the conditions of this report.

5.12 The anchors may be used to resist short-term loading due to wind or seismic forces in locations designated as Seismic Design Categories A through F of the IBC, subject to the conditions of this report.

5.13 Where not otherwise prohibited in the code, US Anchor Ultrawedge+ Wedge Anchors are permitted for use with fire-resistance-rated construction provided that at least one of the following conditions is fulfilled:

- The anchors are used to resist wind forces only.
- Anchors that support a fire-resistance-rated envelope or a fire-resistance-rated membrane are protected by approved fire-resistance-rated materials, or have been evaluated for resistance to fire exposure in accordance with recognized standards.
- Anchors are used to support nonstructural elements.

5.14 Use of the anchors is limited to dry, interior locations.

5.15 Special inspection must be provided as set forth in Section 4.4 of this report.

5.16 Anchors are manufactured for Brighton Best International, Inc. under an approved quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Mechanical Anchors in Concrete Elements (AC193), dated October 2015; which incorporates requirements in ACI 355.2-07, for use in cracked and uncracked concrete; including tests 18 and 19 of Table 4.2 of Annex A of AC193 for seismic tension and shear, and quality control documentation.

7.0 IDENTIFICATION

7.1 The anchors are identified by packaging labeled with the company name (Brighton Best), product name, anchor diameter and length, part number, production lot number and the evaluation report number (ESR-3981).

7.2 The report holder's contact information is the following:

BRIGHTON BEST INTERNATIONAL, INC.
12801 LEFFINGWELL AVENUE
SANTE FE SPRINGS, CALIFORNIA 90670
(562) 483-2740
www.brightonbest.com

TABLE 1—DATA FOR US ANCHOR ULTRAWEDGE+ WEDGE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE [1,2]

CHARACTERISTIC	SYMBOL	UNITS	Nominal Anchor Diameter			
			$^3/_8$ inch	$^1/_2$ inch	$^5/_8$ inch	$^3/_4$ inch
Installation Information						
Anchor diameter	d_a (d_o)[3]	in.	$^3/_8$	$^1/_2$	$^5/_8$	$^3/_4$
Minimum diameter of hole clearance in fixture	d_h	in.	$^7/_{16}$	$^9/_{16}$	$^{11}/_{16}$	$^{13}/_{16}$
Nominal drill bit diameter	d_{bit}	in.	$^3/_8$	$^1/_2$	$^5/_8$	$^3/_4$
Minimum nominal embedment depth	h_{nom}	in.	$2^3/_8$	$2^1/_2$	$3^9/_{16}$	$4^1/_8$
Minimum effective embedment depth	h_{ef}	in.	2	2	3	$3^1/_2$
Minimum hole depth	h_o	in.	$2^3/_4$	$2^3/_4$	$3^3/_4$	$4^1/_2$
Installation torque	T_{inst}	ft-lb	35	50	90	125
Minimum edge distance	c_{min}	in.	4	7	6	7
Minimum spacing	s_{min}	in.	6	12	8	9
Minimum concrete thickness	h_{min}	in.	$4^1/_2$	$6^1/_2$		
Critical edge distance	c_{ac}	in.	8	10	13	11
Anchor Design Data						
Category number	1, 2 or 3	–	1	1	1	1
Yield strength of anchor steel	f_{ya}	lb/in^2	87,200	84,000	81,600	81,600
Ultimate strength of anchor steel	f_{uta}	lb/in^2	109,000	105,000	102,000	102,000
Tension						
Effective tensile stress area (neck)	$A_{se,N}$	in^2	0.056	0.103	0.164	0.238
Steel strength in tension	N_{sa}	lb.	6,104	10,815	16,728	24,276
Reduction factor for steel failure modes [5]	ϕ	-	0.75			
Effectiveness factor for concrete breakout, cracked	k_{cr}	-	17	21	21	24
Effectiveness factor for concrete breakout, uncracked	k_{uncr}	-	24	24	27	27
Reduction factor for concrete breakout [6]	ϕ	-	0.65 (Condition B)			
Pull-out resistance, cracked concrete [4]	$N_{p,cr}$	lb.	N/A	N/A	4,037	N/A
Pull-out resistance, uncracked concrete [4]	$N_{p,uncr}$	lb.	3,013	N/A	N/A	N/A
Pull-out resistance, seismic loads [4]	$N_{p,eq}$	lb.	N/A	N/A	4,037	N/A
Reduction factor for pull-out [6]	ϕ	-	0.65 (Condition B)			
Axial stiffness in service load range (cracked)	β_{cr}	lb/in	37,300	44,600	40,300	55,800
Axial stiffness in service load range (uncracked)	β_{uncr}	lb/in	277,400	230,400	105,700	401,200
Shear						
Effective shear stress area (threads)	$A_{se,V}$	in^2	0.078	0.142	0.226	0.334
Load-bearing length of anchor	ℓ_e	in.	2	2	3	$3^1/_2$
Reduction factor for concrete breakout or pryout [6]	ϕ	-	0.70 (Condition B)			
Coefficient for pryout strength	k_{cp}	-	1.0		2.0	
Steel strength in shear, non-seismic [7]	V_{sa}	lb.	2,508	5,500	9,923	18,317
Steel strength in shear, seismic	$V_{sa,eq}$	lb.	2,006	4,400	7,938	16,485
Reduction factor for steel failure [5]	ϕ	-	0.65			

For **SI:** 1 in = 25.4 mm, 1 in^2 = 6.451×10^{-4} m, 1 ft-lb = 1.356 Nm, 1 lb/in^2 = 6.895 Pa.

[1]The information presented in this table must be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318 Appendix D, as applicable.
[2]Installation must comply with the manufacturer's published installation instructions.
[3]The notation in parentheses is for the 2006 IBC.
[4]See Section 4.1.4 of this report. N/A (not applicable) denotes that this value does not control for design.
[5]Anchors are considered to be manufactured using ductile steel in accordance with ACI 318-14 2.3 or ACI 318 (-11, -08, -05) D.1. Strength reduction factors are for use with the load combinations of ACI 318-14 Section 5.3, ACI 318 (-11, -08, -05) Section 9.2 or IBC Section 1605.2, as applicable.
[6]Condition B applies where supplementary reinforcement in conformance with ACI 318-14 17.3.3(c) or ACI 318-11 D.4.3(c) or ACI 318 (-08, -05) D.4.4(c) is not provided, or where pull-out or pry-out strength governs. For cases where supplementary reinforcement can be verified, the strength reduction factors associated with Condition A may be used. Strength reduction factors are for use with the load combinations of ACI 318-14 Section 5.3, ACI 318 (-11, -08, -05) Section 9.2 or IBC Section 1605.2.
[7]Tabulated values must be used for design, since these values are lower than those calculated with ACI 318-14 Eq. (17.5.1.2b), ACI 318-11 Eq. (D-29), or ACI 318-08 and ACI 318-05 Eq. (D-20), as applicable.

TABLE 2—US ANCHOR ULTRAWEDGE+ WEDGE ANCHOR LENGTH CODE IDENTIFICATION SYSTEM

Length ID marking on threaded stud head		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**
Overall anchor length, ℓ_{anch}, (inches)	From	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	11
	Up to but not including	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	11	12

For **SI**: 1 inch = 25.4 mm.

INSTALLATION INSTRUCTIONS

1. Use a rotary hammer drill in the percussion mode with the correct size carbide drill bit meeting the requirements of ANSI Standard B212-15 to drill the hole perpendicular to the concrete surface and to the required depth.
2. Use a hand pump, compressed air or vacuum to remove debris and dust from the drilling operation.
3. If installation is through a fixture, position the fixture over the hole and install the anchor through the hole in the fixture. Using a hammer, drive the anchor into the hole, insuring that it is installed to the minimum required embedment depth, h_{nom}.
4. Install the washer and nut on the projecting thread, and tighten the nut to the required installation torque value, T_{inst}, using a torque wrench.

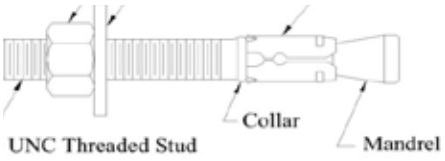

FIGURE 1—US ANCHOR ULTRAWEDGE+ WEDGE ANCHOR COMPONENTS

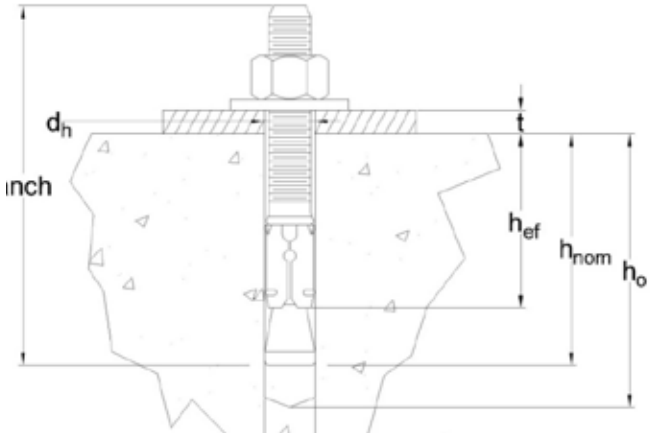

FIGURE 2—US ANCHOR ULTRAWEDGE+ WEDGE ANCHOR INSTALLATION

TABLE 3—EXAMPLE OF ALLOWABLE STRESS DESIGN VALUES FOR ILLUSTRATIVE PURPOSES [1, 2, 3, 4, 5, 6, 7, 8]

Nominal Anchor Diameter, d_a (d_o) (in.)	**Nominal Embedment Depth, h_{nom} (in.)**	**Effective Embedment Depth, h_{ef} (in.)**	**Allowable Tension Load, uncracked (lbs.)**
3/8	2 3/8	2	1323
1/2	2 1/2	2	1491
5/8	3 9/16	3	3081
3/4	4 1/8	3 1/2	3882

[1]Single anchor with static tension only
[2]Concrete determined to remain uncracked for the life of the anchorage
[3]Load combinations from ACI 318-14 Section 5.3 or ACI 318 (-11, -08, -05) Section. 9.2, as applicable and strength reduction factors from ACI 318 Condition B (supplementary reinforcement not provided)
[4]Controlling load combination 30% dead and 70% live loads, 1.2D+1.6L
[5]Calculation of weighted average α =1.2(0.3) + 1.6(0.7) = 1.48
[6]Normalweight concrete with f'_c = 2,500 psi
[7]$c_{a1} = c_{a2} \geq c_{ac}$
[8]$h \geq h_{min}$

ICC-ES Evaluation Report

ESR-3981 LABC and LARC Supplement

Reissued October 2018

This report is subject to renewal October 2020.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-Installed Concrete Anchors

REPORT HOLDER:

BRIGHTON BEST INTERNATIONAL, INC.

EVALUATION SUBJECT:

US ANCHOR ULTRAWEDGE+ WEDGE ANCHORS IN CRACKED AND UNCRACKED CONCRETE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete, described in ICC-ES master evaluation report ESR-3981, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2017 *City of Los Angeles Building Code* (LABC)
- 2017 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3981, comply with the LABC Chapter 19, and the LARC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the master evaluation report ESR-3981.
- The design, installation, conditions of use and identification of the anchors are in accordance with the 2015 *International Building Code®* (2015 IBC) provisions noted in the master evaluation report ESR-3981.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.
- The allowable and strength design values listed in the master evaluation report and tables are for the connection of the anchors to the concrete. The connection between the anchors and the connected members shall be checked for capacity (which may govern).

This supplement expires concurrently with the master report, reissued October 2018.

ICC-ES Evaluation Report

ESR-3981 FBC Supplement

Reissued October 2018

This report is subject to renewal October 2020.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-Installed Concrete Anchors

REPORT HOLDER:

BRIGHTON BEST INTERNATIONAL, INC.

EVALUATION SUBJECT:

US ANCHOR ULTRAWEDGE+ WEDGE ANCHORS IN CRACKED AND UNCRACKED CONCRETE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Brighton Best International, Inc. US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete, recognized in ICC-ES master evaluation report ESR-3981, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2014 *Florida Building Code—Building*
- 2014 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Brighton Best International, Inc. US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete, described in master evaluation report ESR-3981, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, when designed and installed in accordance with the 2012 *International Building Code®* provisions noted in the master report, and under the following conditions:

- Design wind loads must be based on Section 1609 of the *Florida Building Code—Building* or Section 301.2.1.1 of the *Florida Building Code—Residential*, as applicable.
- Load combinations must be in accordance with Section 1605.2 or Section 1605.3 of the *Florida Building Code—Building*, as applicable.

Use of the Brighton Best International, Inc. US Anchor Ultrawedge+ Wedge Anchors in cracked and uncracked concrete has also been found to be in compliance with the High-Velocity Hurricane Zone (HVHZ) provisions of the *Florida Building Code—Building* and *Florida Building Code—Residential,* provided that the design wind loads for use of the anchors in the HVHZ are based on Section 1620 of the *Florida Building Code—Building*.

For products falling under Florida Rule 9N-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report, reissued October 2018.

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

Brighton Best International, Inc.
12801 Leffingwell Avenue
Santa Fe Springs, CA 90670

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: US Anchor Ultrawedge & Ultrawedge+ Anchor

APPROVAL DOCUMENT: Drawing No. **1**, titled "US Anchor Ultrawedge & Ultrawedge+ Anchor", sheets 1 through 5 of 5, prepared by manufacturer, dated on 05/03/2018, signed and sealed by Lee W. Mattis, P.E., bearing the Miami-Dade County Product Control revision 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, Ningbo City, Zhejiang Province, China 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 **revises NOA # 14-0902.09** and consists of this page 1, evidence pages E-1 and E-2, as well as approval document mentioned above.

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

MIAMI-DADE COUNTY APPROVED

06/06/2018

NOA No: 18-0403.04
Expiration Date: February 25, 2021
Approval Date: June 14, 2018
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA'S

A. DRAWINGS *"Submitted under NOA # 14-0902.09"*

1. Drawing No. **1**, titled "US Anchor Ultrawedge Anchor", sheets 1 through 3 of 3, dated 11/17/2015, prepared by manufacture, signed and sealed by Lee W. Mattis, P.E.

B. TESTS *"Submitted under NOA # 14-0902.09"*

1. Test report on Tension and Shear Strength Design Values of 1/2", 5/8" and ¾" diameters US Anchor Ultrawedge Anchors per AC193, ACI 355.2 and ASTM E 488, prepared by CEL Consulting, Inc., Test Report No. **15B269**, dated 03/06/2015, revised on 04/03/2015, signed and sealed by Lee W. Mattis, P.E.
2. Test report on Tension and Shear Strength Design Values of 3/8" diameter US Anchor Ultrawedge Anchors per AC193, ACI 355.2 and ASTM E 488, prepared by CEL Consulting, Inc., Test Report No. **14B256A**, dated 12/08/2014, revised on 12/15/2014 signed and sealed by Lee W. Mattis, P.E.
3. Test report on Corrosion Resistance of 5/8" Ultrawedge Anchors per ASTM G 85, Annex 5 and TAS 114, Appendix E, prepared by Element Materials Technology, Test Report No. **ESP020309P**, dated 07/31/2015, signed by Thomas A. Kolden, P.E.
4. Test report on Corrosion Resistance of 3/8", ½" and ¾" Ultrawedge Anchors per ASTM G 85, Annex 5 and TAS 114, Appendix E, prepared by Element Materials Technology, Test Report No. **ESP019482P**, dated 04/21/2015, signed by Thomas A. Kolden, 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 *"Submitted under NOA # 14-0902.09"*

1. Statement letter of code conformance to the 5th edition (2014) FBC and no financial interest issued by CEL Consulting, Inc., dated 11/17/2015, signed and sealed by Lee W. Mattis, P.E.
2. Articles of incorporation of Brighton Best International, Inc., dated 07/19/2010, signed by Glenn Kurosaki.
3. Distributor agreement dated 12/02/2015.

06/06/2018

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No: 18-0403.04
Expiration Date: February 25, 2021
Approval Date: June 14, 2018

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **1**, titled "US Anchor Ultrawedge & Ultrawedge+ Anchors", sheets 1 through 5 of 5, dated 05/03/2018, prepared by manufacturer, signed and sealed by Lee W. Mattis, P.E.

B. TESTS

1. Test report on Tension and Shear Strength Design Values of 3/8", 1/2", 5/8" and 3/4" diameters US Anchor Ultrawedge+ Wedge Anchors per AC193, ACI 355.2 and ASTM E 488, prepared by CEL Consulting, Inc., Test Report No. **17B353**, dated 06/16/2017, signed and sealed by Lee W. Mattis, P.E.
2. Test report on Tension and Shear Strength Design Values of 3/8", 1/2", 5/8" and 3/4" diameters US Anchor Ultrawedge+ Wedge Anchors per AC193, ACI 355.2 and ASTM E 488, prepared by CEL Consulting, Inc., Test Report No. **17B353 Supplement**, dated 09/01/2017, revised on 09/18/2017 signed and sealed by Lee W. Mattis, P.E.
3. Test report drawings of 3/8", 1/2", 5/8" and 3/4" diameters US Anchor Ultrawedge+ Wedge Anchors, prepared by CEL Consulting, Inc., Test Report No. **17B353 Supplement**, dated 09/29/2017, signed and sealed by Lee W. Mattis, P.E.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

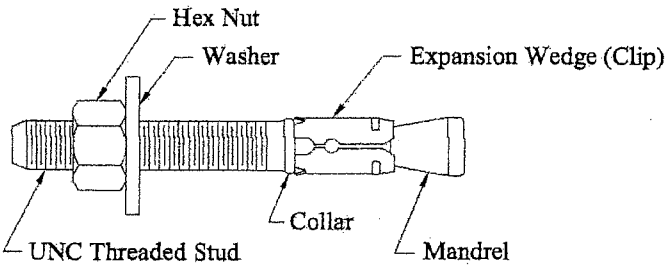
1. Statement letter of code conformance to the 6th edition (2017) FBC and of no financial interest, issued, dated 05/03/2018, signed and sealed by Lee W. Mattis, P.E.

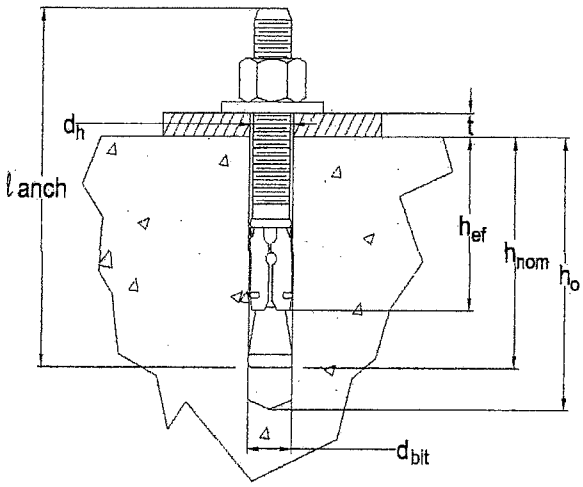
06/04/2018

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No: 18-0403.04
Expiration Date: February 25, 2021
Approval Date: June 14, 2018

US Anchor Ultrawedge Anchor

Description: The Ultrawedge Wedge Anchor is a torque-controller wedge anchor consisting 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. The anchor bodies are manufactured from UNS G10350 steel. The clip for the 3/8" size is manufactured from UNS G001005 steel. The clips for the 1/2" 5/8" and 3/4" sizes are manufactured from UNS G001050 steel. All steels are Chinese-sourced meeting the AISI requirements. The anchor bodies and clips have an electroplated zinc coating in conformance to ASTM B633, SC1, Type III.

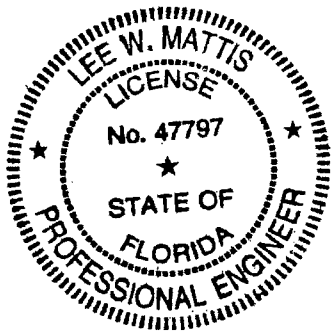




INSTALLATION INSTRUCTIONS

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.
2. Drill the hole a minimum of 1/2" deeper than the specified nominal embedment, h_{nom}
3. Blow out the hole with compressed air or a blow-out bulb
4. Assemble the nut and washer on the anchor and insert through the hole in the material to be fastened
5. Drive the anchor into the drilled hole with a hammer to at least the required nominal embedment, h_{nom}
6. Torque to the specified installation torque

Part #	Size x Length (inches)	Part #	Size x Length (inches)
157060	3/8 x 2 1/4	157300	5/8 x 3 1/2
157070	3/8 x 2 3/4	157310	5/8 x 4 1/2
157080	3/8 x 3	157320	5/8 x 5
157090	3/8 x 3 3/4	157330	5/8 x 6
157100	3/8 x 5	157340	5/8 x 7
157180	1/2 x 2 3/4	157380	3/4 x 4 1/4
157190	1/2 x 3 3/4	157390	3/4 x 4 3/4
157200	1/2 x 4 1/4	157400	3/4 x 5 1/2
157210	1/2 x 4 1/2	157410	3/4 x 6 1/4
157220	1/2 x 5 1/2	157420	3/4 x 7
157230	1/2 x 7		



Lee W. Mattis
5/3/18

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-0403.04
Expiration Date 02/25/2021
By
Miami-Dade Product Control

	Title: US Anchor Ultrawedge Anchor	Brighton Best International, Inc.
	Drawing No: 1	12801 Leffingwell Avenue
	5/3/18 By: LM	Santa Fe Springs, California 90670
		Sheet 1 of 5

TABLE 1—DATA FOR US ANCHOR ULTRAWEDGE ANCHORS FOR USE IN UNCRACKED CONCRETE [1,2]

CHARACTERISTIC	SYMBOL	UNITS	Nominal Anchor Diameter			
			3/8 inch	1/2 inch	5/8 inch	3/4 inch
Installation Information						
Anchor diameter	d_a (d_o)[3]	in.	3/8	1/2	5/8	3/4
Minimum diameter of hole clearance in fixture	d_h	in.	7/16	9/16	11/16	13/16
Nominal drill bit diameter	d_{bit}	in.	3/8	1/2	5/8	3/4
Minimum nominal embedment depth	h_{nom}	In	2 3/8	2 1/2	3 9/16	4 1/8
Minimum effective embedment depth	h_{ef}	In	2	2	3	3 1/2
Minimum hole depth	h_o	In	2 3/4	3	4	4 1/2
Installation torque	T_{inst}	ft-lb	30	40	60	110
Minimum edge distance	c_{min}	in.	3	7	7	7
Minimum spacing	s_{min}	in.	4	7	7	7
Minimum concrete thickness	h_{min}	in.	4	6	6	8
Critical edge distance	c_{ac}	in.	7	9	9	12
Anchor Design Data						
Category number	1, 2 or 3	–	1	1	1	1
Yield strength of anchor steel	f_{ya}	lb/in^2	105,000	92,200	91,200	93,400
Ultimate strength of anchor steel	f_{uta}	lb/in^2	119,200	103,700	102,650	105,000
Tension						
Effective tensile stress area (neck)	$A_{se,N}$	in^2	0.056	0.110	0.173	0.262
Steel strength in tension	N_{sa}	lb.	6675	11,400	17,760	27,510
Reduction factor for steel failure modes [5]	ϕ	-	0.75			
Effectiveness factor for concrete breakout	k_{uncr}	–	24	24	24	24
Reduction factor for concrete breakout [6]	ϕ	-	0.65 (Condition B)			
Pull-out resistance [4]	$N_{p,uncr}$	lb.	3125	3225	N/A [8]	N/A [8]
Reduction factor for pull-out [6]	ϕ	-	0.65 (Condition B)			
Axial stiffness in service load range	β	lb/in	113,890	363,730	443,850	649,470
Shear						
Effective shear stress area (threads)	$A_{se,V}$	in^2	0.078	0.142	0.226	0.334
Load-bearing length of anchor	ℓ_e	in.	2	2	3	3 1/2
Reduction factor for concrete breakout or pryout [6]	ϕ	-	0.70 (Condition B)			
Coefficient for pryout strength	k_{cp}	-	1.0		2.0	
Steel strength in shear [7]	V_{sa}	lb.	3052	4954	9296	14,573
Reduction factor for steel failure [5]	ϕ	-	0.65			

For **SI:** 1 in = 25.4 mm, 1 in^2 = 6.451×10^{-4} m, 1 ft-lb = 1.356 Nm, 1 lb/in^2 = 6.895 Pa.

PRODUCT REVISED
as complying with the Florida Building Code
NOA No. 18-0403.04
Expiration Date 02/25/2021
By
Miami-Dade Product Control

[1] The information presented in this table must be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318 Appendix D as applicable.

[2] Installation must comply with the manufacturer's published installation instructions

[3] The notation in parentheses is for the 2006 IBC.

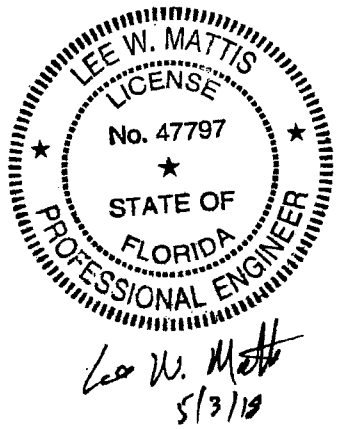
[4] Adjust pullout resistance for concrete strengths greater than 2500 psi using the square root of the actual concrete strength divided by 2500.

[5] Anchors are considered to be manufactured using ductile steel in accordance with applicable ACI 318 provisions. Strength reduction factors are for use with the load combinations of applicable ACI 318 provisions or IBC Section 1605.2.

[6] Condition B applies where supplementary reinforcement in conformance with applicable ACI 318 provisions is not provided, or where pull-out or pry-out strength governs. For cases where supplementary reinforcement can be verified, the strength reduction factors associated with Condition A may be used. Strength reduction factors are for use with the load combinations of applicable ACI 318 provisions or IBC Section 1605.2.

[7] Tabulated values must be used for design since these values are lower than those calculated with applicable ACI 318 provisions.

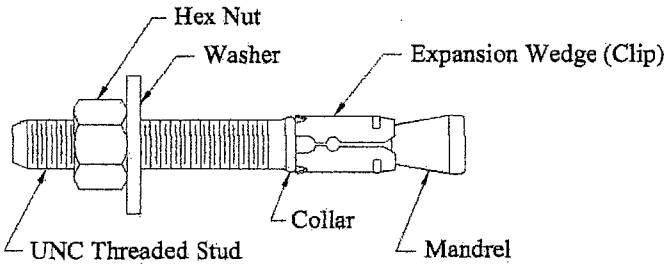
[8] N/A denotes that pullout resistance is not applicable for these sizes and concrete breakout calculations per ACI 318 are applicable.

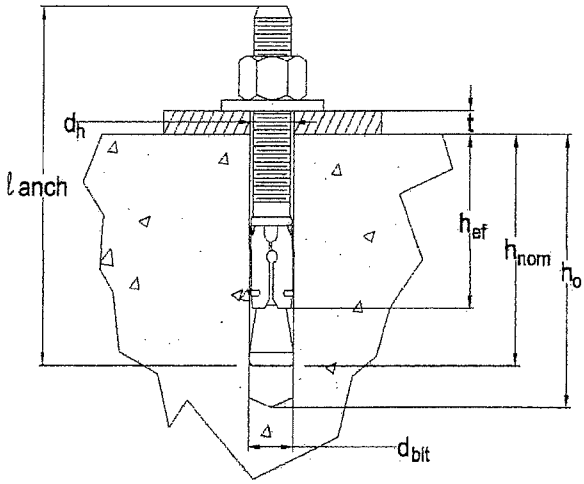


Lee W. Mattis
5/3/18

US Anchor Ultrawedge+ Anchor

Description: The Ultrawedge+ Wedge Anchor is a torque-controller wedge anchor consisting 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. The anchor bodies are manufactured from UNS G10350 steel. The clips are manufactured from Chinese steel standard GB/T3522 Grade 50 (UNS G001050) steel. All steels are Chinese-sourced meeting the AISI requirements. The anchor bodies and clips have an electroplated zinc coating in conformance to ASTM B633, SC1, Type III.





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.
2. Drill the hole deeper than the specified nominal embedment, h_{nom} as specified in Table 2 on Sheet 4.
3. Blow out the hole with compressed air or a blow-out bulb
4. Assemble the nut and washer on the anchor and insert through the hole in the material to be fastened
5. Drive the anchor into the drilled hole with a hammer to at least the required nominal embedment, h_{nom}
6. Torque to the specified installation torque

Part #	Size x Length (inches)	Part #	Size x Length (inches)
157060	3/8 x 2 1/4	157300	5/8 x 3 1/2
157070	3/8 x 2 3/4	157310	5/8 x 4 1/2
157080	3/8 x 3	157320	5/8 x 5
157090	3/8 x 3 3/4	157330	5/8 x 6
157100	3/8 x 5	157340	5/8 x 7
157180	1/2 x 2 3/4	157380	3/4 x 4 1/4
157190	1/2 x 3 3/4	157390	3/4 x 4 3/4
157200	1/2 x 4 1/4	157400	3/4 x 5 1/2
157210	1/2 x 4 1/2	157410	3/4 x 6 1/4
157220	1/2 x 5 1/2	157420	3/4 x 7
157230	1/2 x 7		

LEE W. MATTIS LICENSE No. 47797 STATE OF FLORIDA PROFESSIONAL ENGINEER

Lee W. Mattis
5/3/18

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-0403.04
Expiration Date 02/25/2021
By
Miami-Dade Product Control

	Title: US Anchor Ultrawedge+ Anchor	Brighton Best International, Inc.
	Drawing No: 1	12801 Leffingwell Avenue
	5/3/18 By: LM	Santa Fe Springs, California 90670
		Sheet 3 of 5

TABLE 2—DATA FOR US ANCHOR ULTRAWEDGE+ ANCHORS FOR USE IN CRACKED & UNCRACKED CONCRETE [1,2]

Characteristic	Symbol	Units	Nominal Anchor Diameters			
			3/8	1/2	5/8	3/4
Installation Information						
Anchor diameter	$d_a(d_o)$[3]	in.	3/8	1/2	5/8	3/4
Clearance hole dia.	d_h	in.	7/16	9/16	11/16	13/16
Nominal bit dia.	d_{bit}	in.	3/8	1/2	5/8	3/4
Nominal embedment [9]	h_{nom}	in.	2 3/8	2 1/2	3 9/16	4 1/8
Effective embedment [9]	h_{ef}	in.	2	2	3	3 1/2
Minimum hole depth	h_o	in.	2 3/4	2 3/4	3 3/4	4 1/2
Installation torque	T_{inst}	ft-lbs	35	50	90	125
Minimum edge distance	c_{min}	in.	4	7	6	7
Minimum spacing	s_{min}	in.	6	12	8	9
Minimum concrete thickness	h_{min}	in.	4 1/2	6 1/2		
Critical edge distance	c_{cr}	in.	8	10	13	11
Anchor Design Data						
Category number	1,2,or 3	—	1	1	1	1
Yield strength of anchor steel	f_{ya}	psi	87,200	84,000	81,600	81,600
Ultimate strength of anchor steel	f_{uta}	psi	109,000	105,000	102,000	102,000
Tension						
Effective tensile stress area (neck)	$A_{se,N}$	in^2	0.056	0.103	0.164	0.238
Steel strength in tension	N_{sa}	lb.	6104	10,815	16,728	24,276
Reduction factor for steel failure modes [5]	Φ	-	0.75			
Effectiveness factor for concrete breakout, cracked	k_{cr}	-	17	21	21	24
Effectiveness factor for concrete breakout, uncracked	k_{uncr}	-	24	24	27	27
Reduction factor for concrete breakout [6]	Φ	-	0.65 (Condition B)			
Pull-out resistance, cracked concrete [4]	$N_{p,cr}$	lb.	N/A	N/A	4037	N/A
Pull-out resistance, uncracked concrete [4]	$N_{p,uncr}$	lb.	3013	N/A	N/A	N/A
Pull-out resistance, seismic loads [4]	$N_{p,eq}$	lb.	N/A	N/A	4037	N/A
Reduction factor for pull-out [6]	Φ	-	0.65 (Condition B)			
Axial stiffness in service load range-cracked	β_{cr}	lb/in	37,300	44,600	40,300	55,800
Axial stiffness in service load range-uncracked	β_{uncr}	lb/in	277,400	230,400	105,700	401,200
Shear						
Effective shear stress area (threads)	$A_{se,V}$	in^2	0.078	0.142	0.226	0.334
Load-bearing length of anchor	l_e	in.	2	2	3	3 1/2
Reduction factor for concrete breakout or pryout	Φ	-	0.70 (Condition B)			
Coefficient for pryout strength	k_{cp}	-	1.0		2.0	
Steel strength in shear, non-seismic [7]	V_{sa}	lb.	2508	5500	9923	18,317
Steel strength in shear, seismic [7]	$V_{sa,eq}$	lb.	2006	4400	7938	16,485
Reduction factor for steel failure [5]	Φ	-	0.65			

For SI: 1 in = 25.4 mm, 1 in^2 = 6.451×10^{-4} m, 1 ft-lb = 1.356 Nm, 1 lb/in^2 = 6.895 Pa.

PRODUCT REVISED as complying with the Florida Building Code
NOA No. 18-0403.04
Expiration Date 02/25/2021
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Miami-Dade Product Control

LEE W. MATTIS LICENSE No. 47797 STATE OF FLORIDA PROFESSIONAL ENGINEER

Lee W. Mattis
5/3/18

[1] The information presented in this table must be used in conjunction with the design criteria of ACI 318-14 Chapter 17 or ACI 318 Appendix D as applicable.

[2] Installation must comply with the manufacturer's published installation instructions

[3] The notation in parentheses is for the 2006 IBC.

[4] N/A denotes that pullout resistance is not applicable for these sizes and concrete breakout calculations per ACI 318 are applicable.

[5] Anchors are considered to be manufactured using ductile steel in accordance with applicable ACI 318 provisions. Strength reduction factors are for use with the load combinations of applicable ACI 318 or FBC provisions as applicable.

[6] Condition B applies where supplementary reinforcement in conformance with applicable ACI 318 provisions is not provided, or where pull-out or pry-out strength governs. For cases where supplementary reinforcement can be verified, the strength reduction factors associated with Condition A may be used. Strength reduction factors are for use with the load combinations of applicable ACI 318 or FBC provisions.

[7] Tabulated values must be used for design since these values are lower than those calculated with applicable ACI 318 or FBC provisions.

[8] Adjust pullout resistance for concrete strengths greater than 2500 psi using the square root of the actual concrete strength divided by 2500.

[9] Select overall anchor length to achieve minimum embedment which will depend on the thickness of the fixture being attached..

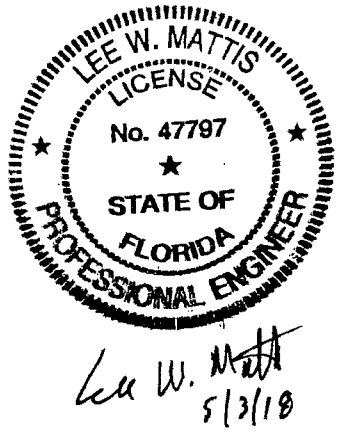
Title: US Anchor Ultrawedge+ Anchor
Drawing No: 1
5/3/18 By: LM

Brighton Best International, Inc.
12801 Leffingwell Avenue
Santa Fe Springs, California 90670

TABLE 3—US ANCHOR ULTRAWEDGE & ULTRAWEDGE+ ANCHOR LENGTH CODE IDENTIFICATION SYSTEM

Length ID marking on threaded stud head		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**
Overall anchor length, ℓ_{anch}, (inches)	From	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	11
	Up to but not including	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	11	12

For SI: 1 inch = 25.4 mm.



Lee W. Mattis
5/3/18

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-0403.04
Expiration Date 02/25/2021
By
Miami-Dade Product Control

Title: US Anchor Ultrawedge & Ultrawedge+ Anchors
Drawing No: 1
5/3/18 By: LM

Brighton Best International, Inc.
12801 Leffingwell Avenue
Santa Fe Springs, California 90670
Sheet 5 of 5

MIAMI-DADE COUNTY
DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

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

NOTICE OF ACCEPTANCE (NOA)

Brighton Best International, Inc.
12801 Leffingwell Avenue
Santa Fe Springs, CA 90670

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: Tapking SD Concrete and Masonry Screws

APPROVAL DOCUMENT: Drawing No. **AD19-11**, titled "Tapking SD Concrete/Masonry Screws", sheet 1 of 1, prepared by the manufacturer, dated on 04/06/2018, signed and sealed by Yiping Wang, P.E. on 06/05/2019, bearing the Miami-Dade County Product Control approval stamp with the Notice of Acceptance number and approval 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, Taikyu, Taiwan 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.**

MIAMI-DADE COUNTY APPROVED

06/21/2019

NOA No: 19-0326.03
Expiration Date: June 27, 2024
Approval Date: June 27, 2019
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **AD19-11**, titled "Tapking SD Concrete/Masonry Screws", sheet 1 of 1, prepared by the manufacturer, dated on 04/06/2018, signed and sealed by Yiping Wang, P.E. on 06/05/2019.

B. TESTS

	Test Report No.	Standard	Date	Signature
1.	HETI-18-A1079	ASTM E488-15	02/28/19	Rafael E. Droz-Seda, P.E.
2.	HETI-18-A1004	ASTM E488-15/ACI 355.2-07	04/12/19	Rafael E. Droz-Seda, P.E.
3.	HETI-18-A1091	ASTM E488-15	02/28/19	Rafael E. Droz-Seda, P.E.
4.	HETI-17-A1017	ASTM E488-15/ACI 355.2-07	04/12/19	Rafael E. Droz-Seda, P.E.
5.	HETI-18-C103	ASTM C39-18	02/28/19	Rafael E. Droz-Seda, P.E.
6.	HETI-18-C104	ASTM C39-18	02/28/19	Rafael E. Droz-Seda, P.E.
7.	HETI-18-S317	ASTM G85-11	02/28/19	Rafael E. Droz-Seda, P.E.
8.	HETI-18-S320	ASTM G85-11	02/28/19	Rafael E. Droz-Seda, P.E.
9.	HETI-19-M502	ASTM F606-16	04/05/19	Rafael E. Droz-Seda, P.E.
10.	HETI-19-M503	ASTM F606-16	02/28/19	Rafael E. Droz-Seda, P.E.

C. CALCULATIONS

1. Anchor capacity calculations prepared by MCY Engineering, Inc., dated 04/16/2019, signed and sealed by Yiping Wang, P.E.

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 6th edition (2017) FBC issued by MCY Engineering, Inc., dated 04/16/2019, signed and sealed by Yiping Wang, P.E.
2. Statement letter of no financial interest issued by MCY Engineering, Inc., dated 04/16/2019, signed and sealed by Yiping Wang, P.E.
3. Distributor agreement dated 05/28/2019.

06/21/2019

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No: 19-0326.03
Expiration Date: June 27, 2024
Approval Date: June 27, 2019

BRIGHTON BEST INTERNATIONAL
TAPKING SD CONCRETE / MASONRY SCREWS

COMPLIANCE SUMMARY
CODE: 2017 FLORIDA BUILDING CODE COMPLIANT
HVHZ: HVHZ COMPLIANT
MATERIALS: SAE1018 OR SAE1021 STEEL
BASE COAT: GALVANIZED (EXCEEDS G60/ASTM A653M)
TOP COAT: ORGANIC COATING
COLOR: BLUE, WHITE, BRONZE AND SILVER

1/4" TAPKING SD
SCREW ULTIMATE STRENGTH: Fu = 167 ksi
SCREW YIELD STRENGTH: Fy = 151 ksi

3/16" TAPKING SD
SCREW ULTIMATE STRENGTH: Fu = 192 ksi
SCREW YIELD STRENGTH: Fy = 179 ksi

GENERAL NOTES
1 - ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATION.

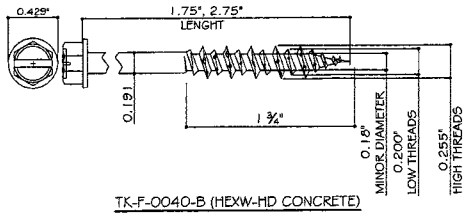
2 - ANCHOR EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.

3 - ALLOWABLE DESIGN LOAD CAPACITIES ARE BASED ON ULTIMATE LOAD DIVIDED BY SAFETY FACTOR AS FOLLOWS:
- CONCRETE: SAFETY FACTOR = 4
- MASONRY: SAFETY FACTOR = 5

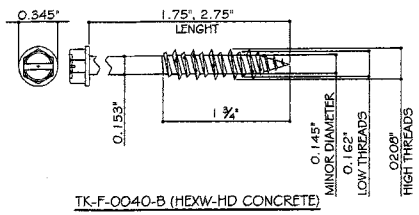
4 - SUBSTRATES SHALL CONFORM TO:
- CONCRETE: ACI 318
- MASONRY: ASTM C-90

5 - ANCHORS SHALL NOT BE INSTALLED INTO CRACKED CONCRETE AS DEFINED IN ACI 355.2.

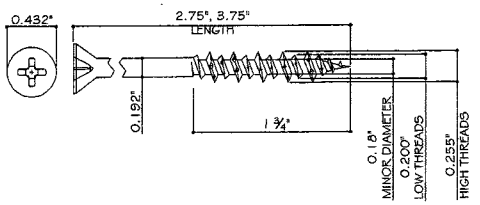
6 - THIS PRODUCT EVALUATION DOCUMENT IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE-SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THE APPROVAL AND APPLY FOR MIAMI-DADE COUNTY PRODUCT CONTROL ONE-TIME NOTICE OF ACCEPTANCE.



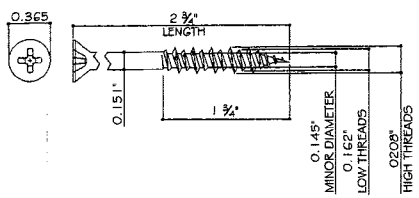
TK-F-0040-B (HEXW-HD CONCRETE)



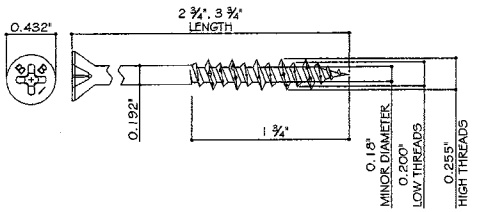
TK-F-0040-B (HEXW-HD CONCRETE)



TK-F-0038-B (PHILIPS FLAT HEAD CONCRETE)



TK-F-0038-B (PHILIPS FLAT HEAD CONCRETE)



TK-F-0041-D (TRIM HEAD CONCRETE ANCHOR)

(1/1) 3/16" CONCRETE & MASONRY SCREWS
- BIT SIZE : 5/32" TYP.
- PILOT HOLE DEPTH: 1/4" DEEPER THAN EMBEDMENT

(2/1) 1/4 " CONCRETE & MASONRY SCREWS
- BIT SIZE : 3/16" TYP.
- PILOT HOLE DEPTH: 1/4" DEEPER THAN EMBEDMENT

CONCRETE (f'c = 2700 PSI) SUBSTRATE
ALLOWABLE CAPACITIES PER ANCHOR

ANCHOR DIAMETER	MINIMUM SPACING	MINIMUM EMBEDMENT	MINIMUM EDGE DIST.	TENSION (LB)	SHEAR (LB)
3/16"	1"	1-3/4"	1"	252	-
			2-1/2"	283	242
	2-1/4"	1-3/4"	1"	231	151
	3"	1"	1"	93	154
			2-1/2"	90	226
		1-3/8"	1"	149	134
			2-1/2"	146	246
	4"	1-1/2"	2"	-	175
	6"	1-3/4"	3"	303	-
1/4"	1-1/2"	1-3/4"	2-1/2"	431	405
	3"	1-3/4"	1"	305	130
			2-1/2"	429	418
	4"	1"	1"	137	98
			2-1/2"	188	259
		1-3/8"	1"	277	136
			2-1/2"	324	280
		1-1/2"	2"	-	384
		1-3/4"	1"	375	-
			2-1/2"	444	389
	6"	1-3/4"	3"	421	-

GROUT FILLED MASONRY SUBSTRATE
ALLOWABLE CAPACITIES PER ANCHOR

ANCHOR DIAMETER	SPACING	EMBEDMENT	EDGE DIST.	TENSION (LB)	SHEAR (LB)
3/16"	3-9/16"	1-3/4"	2-1/2"	288	170
	4"	1-1/2"	2"	223	156
	4-1/2"	2-1/4"	2-1/2"	314	291
1/4"	4"	1-1/2"	2"	312	276
		1-3/4"	2-1/2"	300	389
	4-1/2"	2-1/4"	2-1/2"	377	535

HOLLOW MASONRY SUBSTRATE
ALLOWABLE CAPACITIES PER ANCHOR

ANCHOR DIAMETER	SPACING	EMBEDMENT	EDGE DIST.	TENSION (LB)	SHEAR (LB)
3/16"	1-1/8"	1-1/4"	2-1/2"	172	196
	2-1/4"	1-1/4"	2-1/2"	168	202
	4"	1-1/4"	2"	161	168
	6"	1-1/4"	1"	165	109
1/4"	1-1/2"	1-1/4"	2-1/2"	195	324
	3"	1-1/4"	2-1/2"	200	263
	4"	1-1/4"	2"	168	196
	6"	1-1/4"	1"	166	103

MIAMI-DADE COUNTY
PRODUCT APPROVED
as complying with the Florida Building Code
NOA-No. 19-0326.03
Approval Date 06/27/2019
By Miami-Dade Product Control

TAPING WANG, P.E.
FLORIDA REGISTRATION
FL #55983
STATE OF FLORIDA
PROFESSIONAL ENGINEER

MCY ENGINEERING, INC.
GLAZING CONSULTANTS
8501 SW 124Ave.Ste.205A MIAMI, FL. 33183
P: 305.271.0117
P: 786.360.2786
www.MCYEngineering.com mcy@mcyengineering.com

TAPKING SD CONCRETE / MASONRY SCREWS
BRIGHTON BEST INTERNATIONAL
5855 OBISPO AVE. LONG BEACH
CALIFORNIA 90805
TEL. (305) 885-3252

Rev. No.	Date	Drawn By	Description

Drawn Date 04/16/2018
Scale AS SHOWN
DRAWING NO. AD19-11
1
Sheet No. 01 OF 01

JUN 05 2019

BRIGHTON BEST, INC.
ULTRAWEDGE+ ANCHOR - ENGINEERING DATA SHEET
Allowable Stress Values for Anchorages to Normal-Weight Concrete

ESR-3981 provides design information for load factor and resistance design (LRFD), however allowable stress design (ASD) is still in use by some users. Translation of LRFD to ASD values is possible, however it is dependent on the levels of dead load and live load. Dead load is defined in the ACI 318 Building Code Requirements for Structural Concrete as "the weights of members, supported structure and permanent attachments that are likely to be present on a structure in service". Live load is defined in ACI 318-14 as "load that is not permanently applied to a structure, but is likely to occur during the service life of the structure (excluding environmental loads)". Examples of live loads are traffic on a walkway and nonpermanent loads associated with usage of a structure. Live load values are stipulated in the building code for various loading conditions and parts of structures.

To facilitate the translation of LRFD design values to ASD design values, two scenarios of dead load and live load levels are used to conservatively address the most common applications as follows:

- 100% Dead Load
- 10% Dead Load and 90% Live Load

For 100% dead load, ACI 318-14 Table 5.3 Equation (5.3.1a) provides a conversion factor of 1.4 which is divided into the LRFD design loads and multiplied by a ϕ factor of 0.65 to determine an equivalent ASD load.

For 10% dead and 90% live load, ACI 318-14 Equation (5.3.1b) provides a conversion factor of 1.56 which is divided into the LRFD design loads and multiplied by a ϕ factor of 0.65 to determine an equivalent ASD load.

It is the responsibility of the user to select the appropriate ASD values based on the example loadings shown in this document or alternative dead versus live loading that may be applicable to the specific design.

The ASD values are provided in the following tables for tension and shear for each load scenario. Other installation and design provisions in ESR-3981 must be followed.

BRIGHTON BEST, INC.
ULTRAWEDGE+ ANCHOR - ENGINEERING DATA SHEET

Allowable Stress Values for Attachments to Normal-Weight Concrete

ALLOWABLE TENSION LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN UNCRACKED NORMAL-WEIGHT CONCRETE – 100% DEAD LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi				
		2500	3000	4000	5000	6000
3/8	2-3/8	1399	1532	1769	1978	2167
½	2-1/2	1576	1726	1993	2229	2441
5/8	3-9/16	3257	3568	4120	4606	5046
¾	4-1/8	4104	4496	5191	5804	6358

ALLOWABLE NON-SEISMIC SHEAR LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN NORMAL-WEIGHT CONCRETE – 100% DEAD LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi
		2500
3/8	2-3/8	1164
1/2	2-1/2	2554
5/8	3-9/16	4607
3/4	4-1/8	8504

ALLOWABLE TENSION LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN UNCRACKED NORMAL-WEIGHT CONCRETE – 10% DEAD LOAD, 90% LIVE LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi				
		2500	3000	4000	5000	6000
3/8	2-3/8	1255	1375	1588	1775	1945
1/2	2-1/2	1414	1549	1789	2000	2191
5/8	3-9/16	2923	3202	3697	4134	4528
3/4	4-1/8	3683	4035	4659	5209	5706

ALLOWABLE NON-SEISMIC SHEAR LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN NORMAL-WEIGHT CONCRETE – 10% DEAD LOAD, 90% LIVE LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi
		2500
3/8	2-3/8	1045
1/2	2-1/2	2292
5/8	3-9/16	4135
3/4	4-1/8	7632

Notes to all tables:

[1] Based on ESR-3981 LRFD values

[2] The tabulated values are for anchors installed in normal-weight concrete that has reached the minimum designated compressive strength at the time of installation.

[3] Other installation and other design provisions in ESR-3981 must be followed

[4] Measured from the concrete surface to the embedded end of the anchor (nominal embedment)

BRIGHTON BEST, INC.
ULTRAWEDGE+ ANCHOR - ENGINEERING DATA SHEET
Allowable Stress Values for Attachments to Normal-Weight Concrete

ALLOWABLE TENSION LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN CRACKED NORMAL-WEIGHT CONCRETE – 100% DEAD LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi				
		2500	3000	4000	5000	6000
3/8	2-3/8	1116	1223	1412	1579	1729
1/2	2-1/2	1379	1510	1744	1950	2136
5/8	3-9/16	1874	2053	2371	2651	2904
3/4	4-1/8	3648	3996	4615	5159	5652

ALLOWABLE SEISMIC SHEAR LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN NORMAL-WEIGHT CONCRETE – 100% DEAD LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi
		2500
3/8	2-3/8	931
1/2	2-1/2	2043
5/8	3-9/16	3686
3/4	4-1/8	7654

ALLOWABLE TENSION LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN CRACKED NORMAL-WEIGHT CONCRETE – 10% DEAD LOAD, 90% LIVE LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi				
		2500	3000	4000	5000	6000
3/8	2-3/8	1002	1097	1267	1417	1552
1/2	2-1/2	1237	1356	1565	1750	1917
5/8	3-9/16	1682	1843	2128	2379	2606
3/4	4-1/8	3274	3586	4141	4630	5072

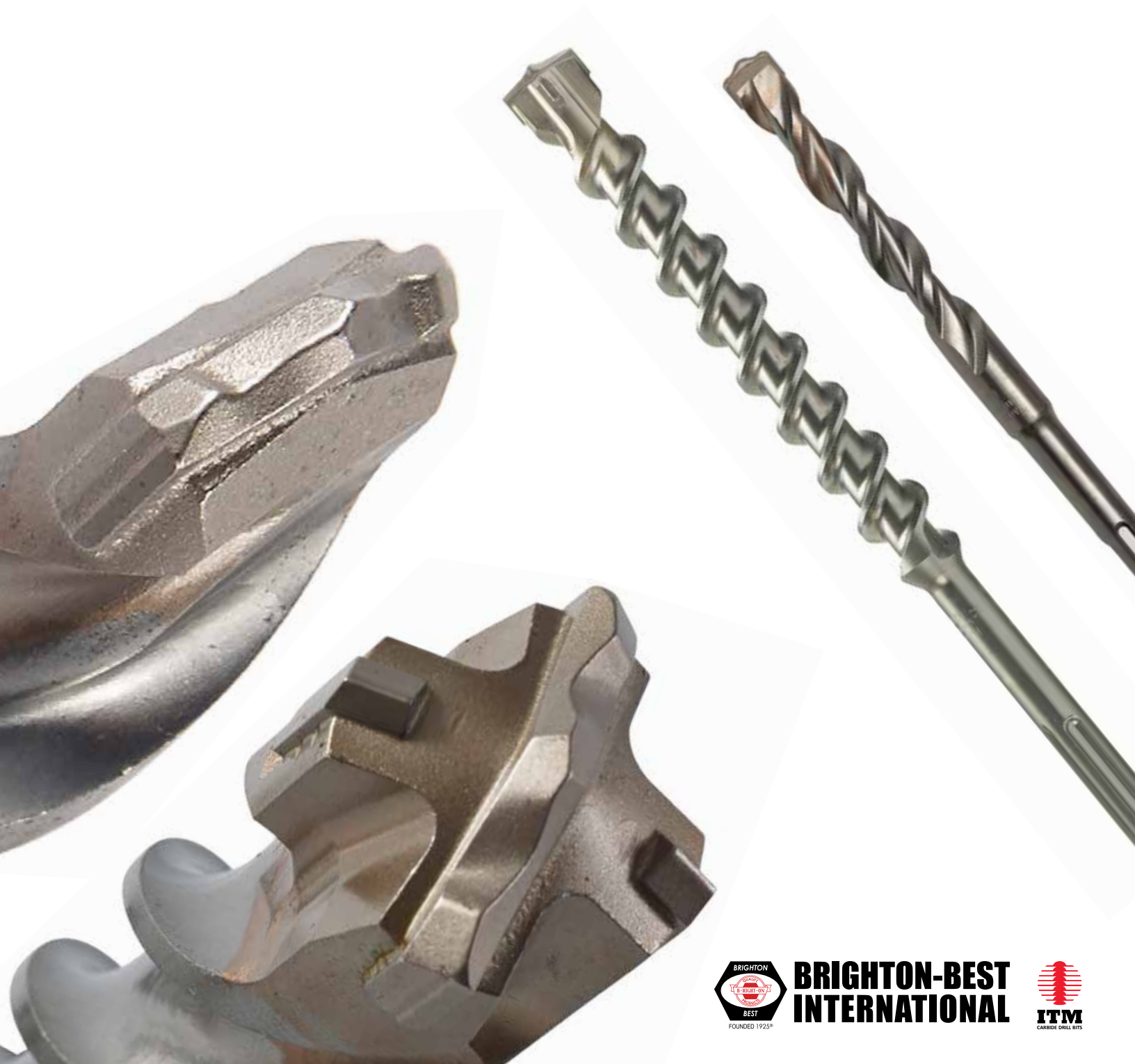
ALLOWABLE SEISMIC SHEAR LOADS FOR ULTRAWEDGE+ ANCHORS INSTALLED IN NORMAL-WEIGHT CONCRETE – 10% DEAD LOAD, 90% LIVE LOAD (Pounds)[1,2,3]

ANCHOR DIAMETER (inches)	MINIMUM NOMINAL EMBEDMENT (inches) [4]	MINIMUM CONCRETE COMPRESSIVE STRENGTH, f_c', psi
		2500
3/8	2-3/8	836
1/2	2-1/2	1833
5/8	3-9/16	3308
3/4	4-1/8	6869

Notes to all tables:
[1] Based on ESR-3981 LRFD values
[2] The tabulated values are for anchors installed in normal-weight concrete that has reached the minimum designated compressive strength at the time of installation.
[3] Other installation and other design provisions in ESR-3981 must be followed
[4] Measured from the concrete surface to the embedded end of the anchor (nominal embedment)

Proferred®

CARBIDE



BRIGHTON-BEST INTERNATIONAL

ITM CARBIDE DRILL BITS

Proferred®
CARBIDE

ITM
CARBIDE DRILL BITS

- Rotary Hammer Drill
- Serrated Head Geometry
- Self Centering Chisel Point
- ANSI Specification
- Tungsten Carbide Tip
- Copper / Silver Brazing
- Fastest Dust Removal
- Fastest Drilling Speeds
- Clean Round Holes
- Less Vibration
- Polished Finish
- Industrial Quality

SDS PLUS

- **Concrete**
- **Brick**
- **Stone**
- **Masonry**
- **Aggregates**

GERMANY

ANSI

SOLD INDIVIDUALLY. 1 PER CLIP.

SDS-PLUS Rotary Hammer Drills

Part #	Size	X	OAL	Drilling	Head	Qty.
C10009	**5/32”**	X	**4-1/4”**	2”	4-PLUS	1
C10010	**5/32”**	X	**6-1/4”**	4”	4-PLUS	1
C10020	**3/16”**	X	**4-1/2”**	2”	4-PLUS	1
C10030	**3/16”**	X	**6-1/2”**	4”	4-PLUS	1
C10031	**3/16”**	X	**8-1/2”**	6”	4-PLUS	1
C10032	**3/16”**	X	**12-1/2”**	10”	4-PLUS	1
C10033	**7/32”**	X	**6-1/2”**	4”	4-PLUS	1
C10034	**7/32”**	X	**8-1/2”**	6”	4-PLUS	1
C10035	**7/32”**	X	**10-1/2”**	8”	4-PLUS	1
C10036	**7/32”**	X	**16”**	14”	4-PLUS	1
C10040	**1/4”**	X	**4-1/2”**	2”	4-PLUS	1
C10050	**1/4”**	X	**6-1/2”**	4”	4-PLUS	1
C10051	**1/4”**	X	**8-1/2”**	6”	4-PLUS	1
C10052	**1/4”**	X	**10-1/2”**	8”	4-PLUS	1
C10053	**1/4”**	X	**14”**	12”	4-PLUS	1
C10054	**1/4”**	X	**16”**	14”	4-PLUS	1
C10060	**5/16”**	X	**6-1/2”**	4”	4-PLUS	1
C10070	**5/16”**	X	**12-1/2”**	10”	4-PLUS	1
C10080	**3/8”**	X	**6-1/2”**	4”	4-PLUS	1
C10090	**3/8”**	X	**10-1/2”**	8”	4-PLUS	1
C10100	**3/8”**	X	**12-1/2”**	10”	4-PLUS	1
C10101	**3/8”**	X	**18”**	16”	4-PLUS	1
C10102	**3/8”**	X	**24”**	22”	4-PLUS	1
C10110	**7/16”**	X	**6-1/2”**	4”	4-PLUS	1
C10111	**7/16”**	X	**12-1/2”**	10”	4-PLUS	1
C10120	**1/2”**	X	**6-1/2”**	4”	4-PLUS	1
C10130	**1/2”**	X	**10-1/2”**	8”	4-PLUS	1
C10140	**1/2”**	X	**12-1/2”**	10”	4-PLUS	1
C10141	**1/2”**	X	**18”**	16”	4-PLUS	1
C10142	**1/2”**	X	**24”**	22”	4-PLUS	1
C10150	**9/16”**	X	**6-1/4”**	4”	4-PLUS	1
C10160	**9/16”**	X	**12-1/4”**	10”	4-PLUS	1
C10170	**5/8”**	X	**6-1/4”**	4”	4-PLUS	1
C10171	**5/8”**	X	**8-1/4”**	6”	4-PLUS	1
C10190	**5/8”**	X	**12-1/4”**	10”	4-PLUS	1
C10191	**5/8”**	X	**18”**	16”	4-PLUS	1
C10192	**5/8”**	X	**24”**	22”	4-PLUS	1
C10193	**3/4”**	X	**8”**	6”	4-PLUS	1
C10220	**3/4”**	X	**12”**	10”	4-PLUS	1
C10221	**3/4”**	X	**18”**	16”	4-PLUS	1
C10222	**3/4”**	X	**24”**	22”	4-PLUS	1
C10223	**7/8”**	X	**8”**	6”	4-PLUS	1
C10230	**7/8”**	X	**10”**	8”	4-PLUS	1
C10231	**7/8”**	X	**12”**	10”	4-PLUS	1
C10240	**1”**	X	**10”**	8”	4-PLUS	1
C10241	**1”**	X	**18”**	16”	4-PLUS	1

Proferred® CARBIDE

ITM CARBIDE DRILL BITS

SDS-MAX® Rotary Hammer Drills

SDS max

Part #	Size	X	OAL	Drilling	Head	Qty.
C13100	**3/8”**	X	**13”**	7-1/2”	REGULAR	1
C13102	**1/2”**	X	**13”**	7-1/2”	REGULAR	1
C13104	**1/2”**	X	**21”**	15-1/2”	REGULAR	1
C13106	**9/16”**	X	**21”**	15-1/2”	REGULAR	1
C13108	**5/8”**	X	**13”**	7-1/2”	X-CUTTER	1
C13110	**5/8”**	X	**21”**	15-1/2”	X-CUTTER	1
C13112	**5/8”**	X	**36”**	30-1/2”	X-CUTTER	1
C13114	**11/16”**	X	**21”**	15-1/2”	X-CUTTER	1
C13116	**3/4”**	X	**13”**	8”	X-CUTTER	1
C13118	**3/4”**	X	**21”**	17”	X-CUTTER	1
C13120	**3/4”**	X	**36”**	31”	X-CUTTER	1
C13122	**7/8”**	X	**13”**	8”	X-CUTTER	1
C13124	**7/8”**	X	**21”**	17”	X-CUTTER	1
C13126	**7/8”**	X	**36”**	31”	X-CUTTER	1
C13128	**1”**	X	**13”**	8”	X-CUTTER	1
C13130	**1”**	X	**21”**	17”	X-CUTTER	1
C13132	**1”**	X	**36”**	31”	X-CUTTER	1
C13134	**1-1/8”**	X	**17”**	12”	X-CUTTER	1
C13136	**1-1/8”**	X	**21”**	17”	X-CUTTER	1
C13138	**1-1/8”**	X	**36”**	31”	X-CUTTER	1
C13140	**1-1/4”**	X	**15”**	10”	X-CUTTER	1
C13142	**1-1/4”**	X	**23”**	18”	X-CUTTER	1
C13144	**1-3/8”**	X	**23”**	18”	X-CUTTER	1
C13146	**1-1/2”**	X	**23”**	18”	X-CUTTER	1
C13148	**1-3/4”**	X	**23”**	18”	X-CUTTER	1
C13150	**2”**	X	**23”**	18”	X-CUTTER	1

- Rotary Hammer Drill
- Industrial Quality
- Tungsten Carbide Tip
- Copper / Silver Brazing
- Fastest Dust Removal
- Fastest Drilling Speeds
- Heat Treated Body
- Clean Round Holes
- Less Vibration
- Polished Finish
- ANSI Specification

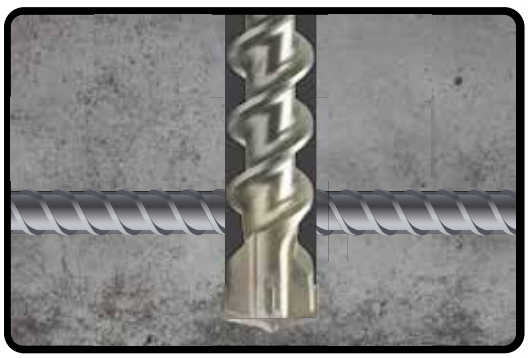
- **Reinforced Concrete**
- **Brick**
- **Stone**
- **Masonry**
- **Aggregates**

GERMANY ANSI

SOLD INDIVIDUALLY. 1 PER TUBE.

Bosch® License

WILL PENETRATE THROUGH REINFORCED CONCRETE



Proferred® CARBIDE

ITM CARBIDE DRILL BITS

- Rotary Hammer Drill
- STOP - Lip Prevents Over-Drilling
- Drill Exact Depth For Drop-In Anchor
- Less Likely to Hit Rebar
- ANSI Specification

- **Concrete**
- **Brick**
- **Stone**
- **Masonry**
- **Aggregates**

For Drop-in Anchors

GERMANY

ANSI

SDS-PLUS + STOP Rotary Hammer Bit

Part #	Size	Drill Depth	Anchor Size	Qty.
C12100	**3/8”**	1-1/16”	1/4”	1
C12102	**1/2”**	13/16”	3/8” Short	1
C12104	**1/2”**	1-11/16”	3/8”	1
C12106	**5/8”**	1-3/16”	1/2” Short	1
C12108	**5/8”**	2-1/16”	1/2”	1

Half Flat Shank

Concrete Bits - FOR CONCRETE-SCREWS

Part #	Size	x	OAL	Screw	Qty.
R62004	**5/32”**	X	**3-1/2”**	12	25
R62005	**5/32”**	X	**4-1/2”**	12	25
R62006	**5/32”**	X	**5-1/2”**	12	25
R62008	**3/16”**	X	**3-1/2”**	14	25
R62003	**3/16”**	X	**4-1/2”**	14	25
R62001	**3/16”**	X	**5-1/2”**	14	25
R62002	**3/16”**	X	**6-3/4”**	14	25
R62009	**3/16”**	X	**7-5/8”**	14	25

- Industrial Quality
- Tungsten Carbide Tip
- Used for 5/32” Screws and 3/16” Screws

FOR USE WITH CONCRETE-SCREW SLEEVE

Each concrete-screw carbide drill bit is precisely ground to match a certain tolerance to assure proper hole diameter and to achieve maximum thread holding power. The flat on the shank fits all drill adapters. The drill bit is specially heat treated to make it very durable.

SDS-HEX Bits - FOR CONCRETE-SCREWS

Part #	Size	x	OAL	Drilling	Qty.
C19200	**5/32”**	X	**5”**	2-1/2”	1
C19201	**5/32”**	X	**7”**	4-1/2”	1
C19100	**3/16”**	X	**5”**	2-1/2”	1
C19101	**3/16”**	X	**7”**	4-1/2”	1

SDS PLUS

GERMANY

- Industrial Quality
- Special Tungsten Carbide Tip
- Copper / Silver Brazing
- Polished Finish
- Used for 5/32” Screws and 3/16” Screws

FOR USE WITH CONCRETE-SCREW SLEEVE

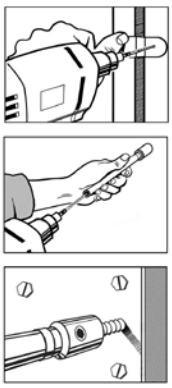
SDS-HEX Rotary Hammer drill bits are specifically designed for concrete-screw installation. These SDS bits have a special 5/16” HEX shoulder for direct use with concrete screw installation sleeves, eliminating the need for drill adapters. The benefit of using an SDS-Plus machine instead of a standard rotation drill is 2-3X faster performance, especially in harder concretes. SEE BELOW FOR INSTALLATION KIT

Installation Kit

Part #	Description
C99010	Installation Kit

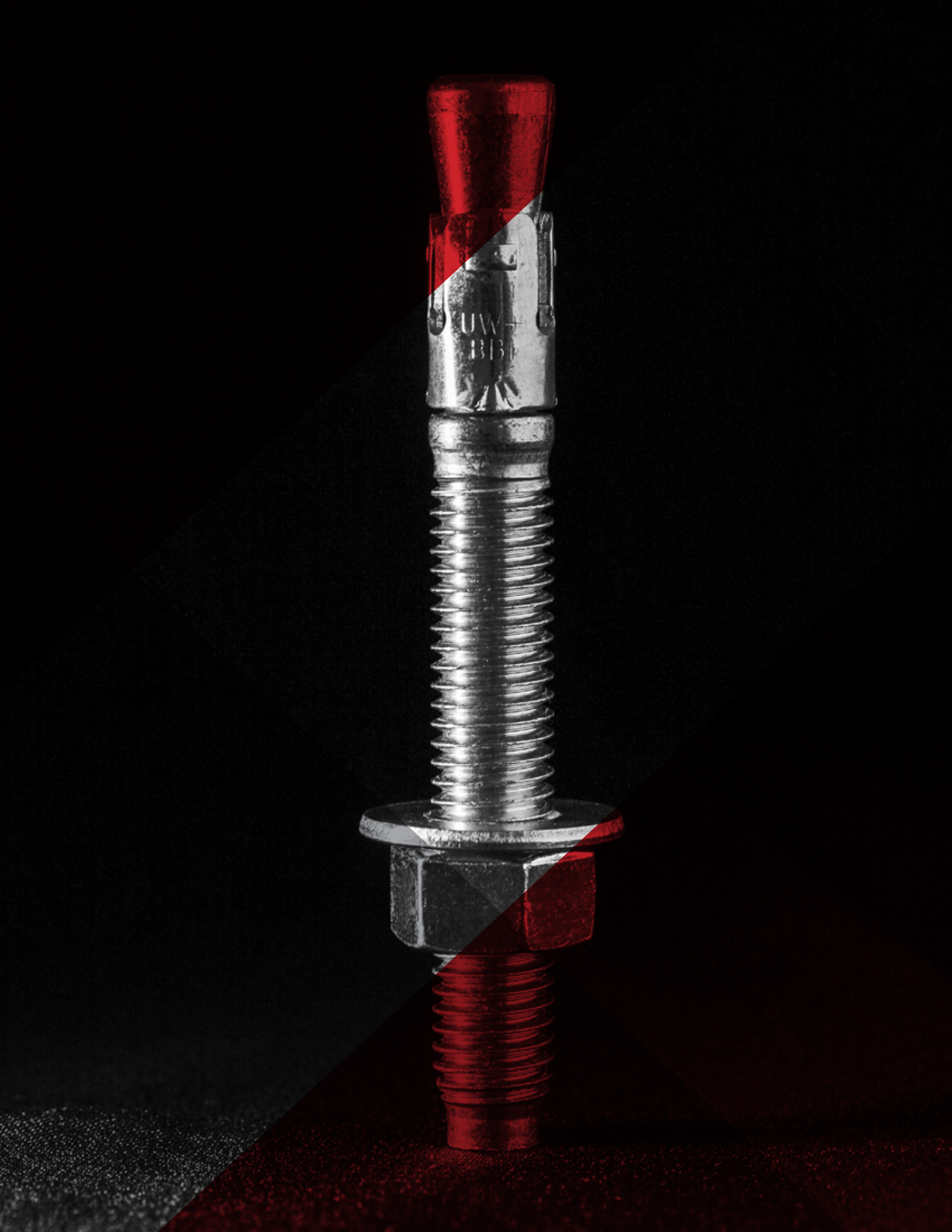
INCLUDES:

- 5/32” x 7” SDS-PLUS Hex Bit
- 3/16” x 7” SDS-PLUS Hex Bit
- 1/4” Magnetic Driver
- 5/16” Magnetic Driver
- Phillips Bit Adapter
- Masonry Drill Adapter
- 6-1/2” Sleeve
- 1/8” Hex Key
- Phillips #2 x 1” Insert
- Phillips #3 x 1” Insert



- Red Case
- Black Hardware

This Installation Kit is Suitable for both Standard Concrete Bits & SDS-HEX Rotary Hammer Bits.



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