



**BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908**

**NOTICE OF ACCEPTANCE (NOA)**

**Adhesives Technology  
450 East Copans Road  
Pompano Beach, FL 33064**

**SCOPE:**

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

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

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

**DESCRIPTION: HS-200 Epoxy, Ultrabond Epoxy and Capsules Adhesive Anchoring System.**

**APPROVAL DOCUMENT:** Drawing No. **J31501**, Sheets 1 through 4 of 4, titled "HS-200 Epoxy, Ultrabond Epoxy and Capsules" dated 05/18/01 with no revisions, prepared by Adhesive Technology, signed and sealed by L. W. Mattis PE, bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance (NOA) number and expiration date by the Miami-Dade County Product Control Division.

**MISSILE IMPACT RATING: None**

**LABELING:** Each unit 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 is a revision of NOA # 01-0117.01 consists of this page 1, evidence page as well as approval document mentioned above.

The submitted documentation was reviewed by **Candido F. Font, P.E.**



*[Signature]*  
12/22/05

**NOA No 05-0627.02  
Expiration Date: January 13, 2006  
Approval Date: December 22, 2005**

**Adhesives Technology.**

**NOTICE OF ACCEPTANCE: EVIDENCE PAGE**

**A DRAWINGS:**

1. Drawings prepared by Adhesives Technology, titled "HS-200 Epoxy, Ultrabond Epoxy and Capsules", Drawing No: J31501, dated 05/18/01 with no revisions, sheet 1 through 4 of 4, signed and sealed by L. W. Mattis, PE.

<b>B</b>	<b>TEST NUMBER</b>	<b>TEST STANDARD</b>	<b>REPORT DATE</b>	<b>SIGNATURE</b>
1.	ATEC # 22028	ASTM E488	09/17/92 & 11/17/92	P.G. Read, PE
2.	ARL # 29779	ICBO AC 58	10/20/98	C. A. Hamon PE
3.	ARL # 29789	ICBO AC 58	10/20/98	C. A. Hamon PE
4.	ARL # 30165	ICBO AC 58	06/15/01	C. A. Hamon PE
5.	ARL # 29864	ICBO AC 58	11/16/98	C. A. Hamon PE
6.	ARL # 29863	ICBO AC 58	11/16/98	C. A. Hamon PE
7.	ARL # 29742	ICBO AC 58	10/20/98	C. A. Hamon PE
8.	ARL # 29739	ICBO AC 58	10/07/98	C. A. Hamon PE
9.	ARL # 29740	ICBO AC 58	10/15/98	C. A. Hamon PE
10.	ARL # 30170	ICBO AC 58	01/05/01	C. A. Hamon PE
11.	ARL # 30172	ICBO AC 58	01/09/01	C. A. Hamon PE
12.	ARL # 29890A	ICBO AC 58	02/15/99	C. A. Hamon PE
13.	ARL # 30171	ICBO AC 58	01/05/01	C. A. Hamon PE
14.	ARL # 30254	ICBO AC 58	06/01/01	C. A. Hamon PE
15.	ARL # 29776	ICBO AC 58	10/07/98	C. A. Hamon PE
16.	ARL # 29777	ICBO AC 58	10/15/98	C. A. Hamon PE
17.	ARL # 29786	ICBO AC 58	10/07/98	C. A. Hamon PE
18.	ARL # 29787	ICBO AC 58	10/15/98	C. A. Hamon PE

**C CALCULATIONS:**

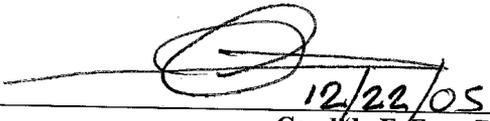
N/A

**D QUALITY ASSURANCE:**

1. Building Code Compliance Office.

**E STATEMENTS:**

1. No change letter issued by U.S. Anchor Corporation on 01/12/2001, signed by F. Lutzy.
2. Name change letter issued by Adhesives Technology on 08/09/05, signed by A. Alexis and notarized by M. M. Carter.
3. Certification of name change issued by the State of Florida, document # K20907 signed by G. E. Hood on 03/02/05.
4. No change letter issued by Adhesives Technology on 09/15/05 and signed by J. Hanley.

  
12/22/05  
Candido F. Font, P.E.  
Senior Product Control Examiner  
NOA No 05-0627.02  
Expiration Date: January 13, 2006  
Approval Date: December 22, 2005

**DESCRIPTION:**

**HS-200**

HS-200 is a two component 100% solid epoxy designed to achieve high strength when anchoring in solid concrete. The epoxy is contained in a two-cartridge set and dispensed in a 2 to 1 ratio.

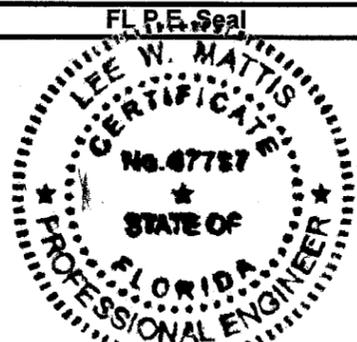
**HS-200 - Allowable Loads for Threaded rods and Reinforcing Bar in 2000psi Concrete** <sup>12345</sup>

Anchor Diameter	Embedment Depth (in)	Critical and Minimum Edge Distance (in)	Allowable Tensile Load (lbs)	Allowable Shear Load (lbs)
3/8"	1-11/16"	2-17/32"	759	
	3-3/8"	5-1/16"	2,054	1,770
	4-1/2"	6-3/4"	2,319	1,770
1/2"	2-1/4"	3-3/8"	1,424	
	4-1/2"	6-3/4"	4,594	3,060
	6"	9"	5,557	3,060
5/8"	2-13/16"	4-7/32"	2,420	
	5 5/8"	8-7/16"	6,645	5,800
	7 1/2"	11-1/4"	8,705	5,800
3/4"	3 3/8"	5-1/16"	3,097	
	6 3/4"	10-1/8"	9,604	7,965
	9"	13-1/2"	11,181	7,965
7/8"	3 15/16"	5-29/32"	4,027	
	7 7/8"	11-13/16"	13,098	8,740
	10 1/2"	15-3/4"	16,533	8,740
1"	4 1/2"	6-3/4"	5,402	
	9"	13-1/2"	15,209	13,730
	12"	18"	18,135	13,730
1 1/4"	5 5/8"	8-7/16"	7,786	
	11 1/4"	16-7/8"	20,547	18,355
	15"	22-1/2"	26,547	18,355
#4 rebar	4 1/2"	6-3/4"	4,744	3,030
#5 rebar	5 5/8"	8-1/2"	7,888	5,149
#6 rebar	6 3/4"	10-1/8"	9,776	7,530
#8 rebar	9"	13-1/2"	13,983	9,620

- 1] Working Time 18 to 20 minutes at 80 °F with 20 gram mass.
- 2] Minimum load time 4 hours at 80 °F.
- 3] Adhesive performance is affected by the temperature of the environment.(See Table 3)

**NOTES (Applicable to all products on this sheet):**

- 1] Allowable Loads equal to ultimate loads divided by a safety factor of 4.
- 2] Testing performed with A 193 B7 steel threaded rod or A 615 Grade 60 reinforcing steel as indicated in tables. Compare loads in tables to allowable loads for steel strength (Table 1 & 2) and use the lower value.
- 3] Allowable loads applicable to normal weight concrete only.
- 4] Allowable loads valid for minimum spacing distance of 1.75 x embedment depth.
- 5] Minimum concrete thickness equals 1.5 x embedment depth.



Lee W. Mattis 11/10/07

**DESCRIPTION:**

**ULTRABOND**

Ultrabond is a two component 100% solid epoxy designed to achieve high strength when anchoring in solid concrete. The epoxy is contained in a two-cartridge set and dispensed in a 1 to 1 ratio. Ultrabond is also available in capsules mixed by rotating the threaded rods inside the hole with an electric drill.

**ULTRABOND 1 - Allowable Loads for Threaded rods in 2000psi Concrete** <sup>12345</sup>

Anchor Diameter	Embedment Depth (in.)	Critical and Minimum Edge (in.)	Allowable Tensile Load (lbs)	Allowable Shear Load (lbs)
3/8"	3 3/8"	6 3/4"	2,312	1,796
1/2"	4 1/2"	9"	5,582	3,215
5/8"	5 5/8"	11 1/4"	7,487	5,714
3/4"	6 3/4"	13 1/2"	9,819	8,075
7/8"	7 7/8"	15 3/4"	13,465	9,053
1"	9"	18"	15,674	13,037
1 1/4"	11 1/4"	22 1/4"	22,148	17,252
#4 rebar	4 1/2"	9"	5,800	2,810
#5 rebar	5 5/8"	11 1/4"	8,082	5,256
#6 rebar	6 3/4"	13 1/2"	10,391	8,072
#8 rebar	9"	18"	13,705	9,645

- 1] Working Time 18 to 2 minutes at 80 °F with 20 gram mass.
- 2] Minimum load time 4 hours at 80 °F.
- 3] Adhesive performance is affected by the temperature of the environment.(See Table 3)

**ULTRABOND 2 - Allowable Loads for Threaded rods in 2000psi Concrete** <sup>12345</sup>

Anchor Diameter	Embedment Depth (in.)	Critical and Minimum Edge (in.)	Allowable Tensile Load (lbs)	Allowable Shear Load (lbs)
3/8"	3 3/8"	6 3/4"	1,876	
1/2"	4 1/2"	9"	4,488	3,271
5/8"	5 5/8"	11 1/4"	7,089	5,223
3/4"	6 3/4"	13 1/2"	9,676	7,930
7/8"	7 7/8"	15 3/4"	12,101	9,144
1"	9"	18"	15,161	13,292

- 1] Working Time 25-27 minutes at 80 °F with 20 gram mass.
- 2] Minimum load time 10 hours at 80 °F.
- 3] Adhesive performance is affected by the temperature of the environment.(See Table 3)

PRODUCT REVISED as complying with the Florida Building Code  
 Acceptance No. 05-062702  
 Expiration Date 01/13/06  
 By: [Signature]  
 Miami Dade Product Control Division

Rev No.	REVISIONS	Date	For Office Use



450 E. Copans Rd. Pompano Beach, Florida 33064

TITLE:	HS-200 Epoxy, Ultrabond Epoxy and capsules				
Drawing Number	J31501	Sheet Number	1 of 4	Drawing Date	5/18/2001
Product approval #01-0117.01			Drawn By: J. H.		

**Ultrabond 3 (Quick Cure) - Allowable Loads in pounds <sup>1,2,3</sup>**

Anchor Diameter	Embedment Depth	Edge Distance	Concrete 3000		Concrete 5000		Concrete 7000	
			Tension	Shear	Tension	Shear	Tension	Shear
3/8"	3-1/2"	5-1/4"	2,725	1,828	2,725	1,786	2,685	1,786
1/2"	4-1/2"	6-3/4"	3,346	2,079	3,583	3,363	4,670	3,363
5/8"	5-5/8"	8-7/16"	5,423	4,086	5,841	4,234	7,798	4,941
3/4"	6-3/4"	10-1/8"	7,500	6,094	8,099	5,867	10,089	7,024
7/8"	7-7/8"	11-13/16"	9,985	8,086	10,743	7,955	11,548	9,107
1"	9"	13-1/2"	12,470	10,078	13,386	10,079	14,524	11,309

- 1] Gel Time 4 to 5 minutes at 60 °F or less.
- 2] Minimum load time 1 to 2 hours.
- 3] Adhesive performance is affected by the temperature of the environment. (See Table 3)

**Ultrabond 2200 (Extended Time) - Allowable Loads in pounds <sup>1,2,3</sup>**

Anchor Diameter	Embedment Depth	Edge Distance	Concrete 3000		Concrete 5000	
			Tension	Shear	Tension	Shear
3/8"	3-1/2"	5-1/4"	2,334	1,804	2,432	1,713
1/2"	4-1/2"	6-3/4"	3,625	2,423	3,678	2,710
5/8"	5-5/8"	8-7/16"	5,451	3,756	5,615	3,805
3/4"	6-3/4"	10-1/8"	7,277	5,080	7,552	4,900
7/8"	7-7/8"	11-13/16"	9,442	7,729	10,057	6,746
1"	9"	13-1/2"	11,608	10,367	12,563	8,591

- 1] Gel Time 25 to 35 minutes at 80 °F with 20 gram mass.
- 2] Minimum load time 8 hours at 80 °F.
- 3] Adhesive performance is affected by the temperature of the environment. (See Table 3)

**Ultrabond 1300 (Accelerated Time) - Allowable Loads in pounds <sup>1,2,3</sup>**

Anchor Diameter	Embedment Depth	Edge Distance	Concrete 3000		Concrete 5000		Concrete 7000	
			Tension	Shear	Tension	Shear	Tension	Shear
3/8"	3-1/2"	5-1/4"	2,334	1,735	2,531	1,759	2,734	1,786
1/2"	4-1/2"	6-3/4"	3,537	2,079	3,628	2,595	4,600	3,274
5/8"	5-5/8"	8-7/16"	4,900	3,832	5,172	4,514	7,322	4,763
3/4"	6-3/4"	10-1/8"	6,263	5,584	6,716	6,433	8,691	6,518
7/8"	7-7/8"	11-13/16"	8,344	7,341	8,582	7,852	9,881	8,273
1"	9"	13-1/2"	10,424	9,099	10,448	9,271	13,036	10,238

- 1] Gel Time 7 to 10 minutes at 80 °F with 20 gram mass.
- 2] Minimum load time 3 to 4 hours at 80 °F.
- 3] Adhesive performance is affected by the temperature of the environment. (See Table 3)

**Ultrabond Capsule Anchor (CA) - Allowable load in pounds <sup>1,2</sup>**

Anchor Diameter	Embedment Depth	Edge Distance	Concrete 3000		Concrete 5000	
			Tension	Shear	Tension	Shear
3/8"	3-1/2"	5-1/4"	2,518	1,528	2,641	1,851
1/2"	4-1/2"	6-3/4"	3,961	1,726	4,244	2,538
5/8"	5-5/8"	8-7/16"	5,926	2,964	6,960	4,597
3/4"	6-3/4"	10-1/8"	7,880	4,203	9,675	6,656
7/8"	7-7/8"	11-13/16"	11,494	6,737	11,131	8,022
1"	9"	13-1/2"	12,609	9,272	12,586	9,387

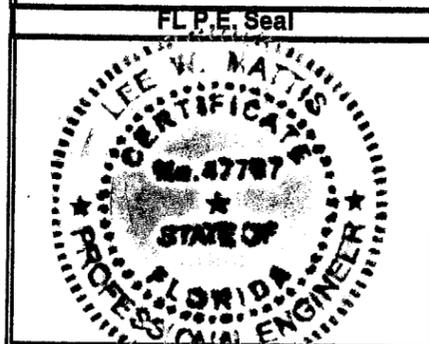
- 1] Curing time at 5 to 14 °F is 5 hours, 14 to 32 °F is 1 hour, 50 to 68 °F
- 2] Adhesive performance is affected by the temperature of the environment. (See Table 3)

**ALLOWABLE LOADS FOR THREADED RODS**

**NOTES (Applicable to all products on this sheet):**

- 1] Allowable Loads equal to ultimate loads divided by a safety factor of 4.
- 2] Testing performed with A 193 B7 steel threaded rod or A 615 Grade 60 reinforcing steel as indicated in tables. Compare loads in tables to allowable loads for steel strength (Table 1 & 2) and use the lower value.
- 3] Allowable loads applicable to normal weight concrete only.
- 4] Allowable loads valid for minimum spacing distance of 1.75 x embedment depth.
- 5] Minimum concrete thickness equals 1.5 x embedment depth.

PRODUCT REVIEWED  
as complying with the Florida  
Building Code  
Acceptance No. 05-0627.02  
Expiration Date 01/13/26  
By [Signature]  
Miami Dade Product Control  
Division



Lee W. Mattis 11/10/05

Rev No.	REVISIONS	Date	For Office Use

**ADHESIVES TECHNOLOGY** CORP.  
Concrete Solutions for Concrete Applications  
450 E. Copans Rd. Pompano Beach, Florida 33064

TITLE: HS-200 Epoxy, Ultrabond Epoxy and capsules  
 Drawing Number J31501 Sheet Number 2 of 4 Drawing Date 5/18/01  
 Product approval #01-0117.01 Drawn By: J. H.

# INSTALLATION PARAMETERS FOR ADHESIVE PRODUCTS

**TABLE 1**  
**ALLOWABLE TENSION AND SHEAR LOADS FOR THREADED**  
**ROD BASED ON STEEL STRENGTH <sup>1</sup>**

ROD SIZE	TENSION (pounds)			SHEAR (pounds)		
	Type of Steel			Type of Steel		
	A 307	A193 Grade B7	AISI 304-SS	A 307	A193 Grade B7	AISI 304-SS
3/8"	2,115	4,555	3,645	1,090	2,170	1,870
1/2"	3,755	8,100	6,480	1,935	3,895	3,330
5/8"	5,870	12,655	10,125	3,025	6,125	5,220
3/4"	8,455	18,225	12,390	4,355	8,855	6,390
7/8"	11,510	24,805	16,865	5,930	12,105	8,680
1"	15,030	32,400	22,030	7,745	15,810	11,340
1-1/4"	23,490	50,620	34,425	12,100	26,080	17,735
1-3/8"	28,421	61,250	41,650	14,640	31,555	21,455
1-1/2"	33,825	72,895	49,570	17,425	37,550	25,535

**TABLE 2**  
**ALLOWABLE TENSION AND SHEAR LOADS FOR REINFORCING BAR**  
**ROD BASED ON STEEL STRENGTH PER ASTM A615 <sup>1</sup>**

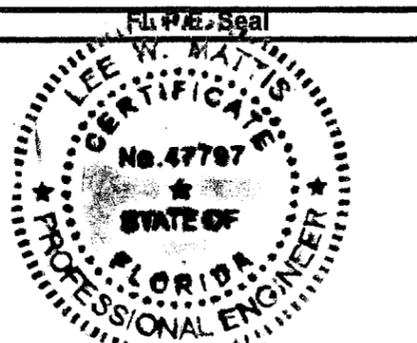
ROD SIZE	BIT DIAMETER	TENSION (pounds)		SHEAR (pounds)	
		Type of Steel		Type of Steel	
		Grade 40	Grade 60	Grade 40	Grade 60
#3	1/2"	2,200	2,640	1,310	1,680
#4	5/8"	4,000	4,800	2,380	3,060
#5	3/4"	6,200	7,440	3,690	4,740
#6	7/8"	8,800	10,560	5,240	6,730
#7	1"	12,000	14,400	7,140	9,180
#8	1-1/8"	15,800	18,960	9,400	12,085
#9	1-1/4"	20,000	24,000	11,900	15,300
#10	1-1/2"	25,400	30,480	15,115	19,430

**INSTALLATION INSTRUCTIONS:** Recommended minimum distances for 100% allowable loads.

Anchor Diameter	Hole Diameter	Recommended Maximum Torque Range [ft-lbs.]
3/8"	7/16"	12-15
1/2"	9/16"	22-26
5/8"	3/4"	50-60
3/4"	7/8"	90-105
7/8"	1"	140-185
1"	1-1/8"	190-275
1-1/4"	1 3/8"	300-380

**NOTES:**

- 1) Tabulated allowable loads are based on the strength of the steel. These values must be compared to the allowable loads for the anchors, based on the adhesive bond strength. The lesser of the value shown above and the value shown in the tables in this evaluation report for the bond strength of the adhesive anchors must be used for the allowable value of the threaded bar installed with adhesives.



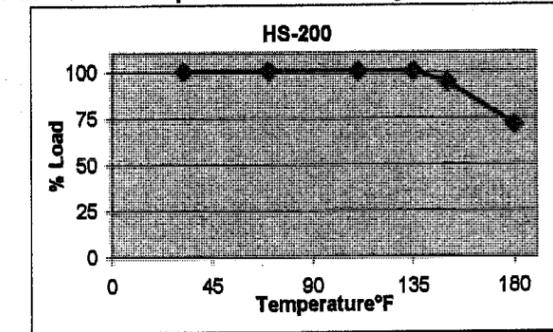
Lee W. Matt 11/10/07

Rev No.	REVISIONS	Date	For Office Use

**Table 3**

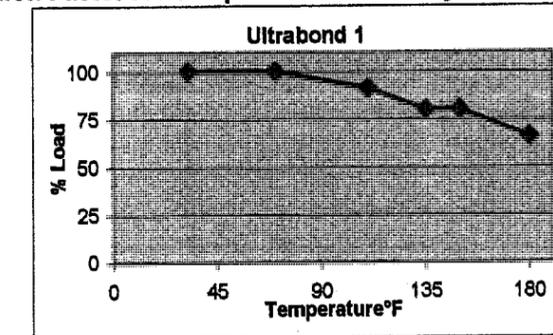
**HS-200 Allowable Load Reduction Factor for Temperature Sensitivity**

HS-200 Substrate Temp.	Adj. %
32	100
70	100
110	100
135	100
150	94
180	71



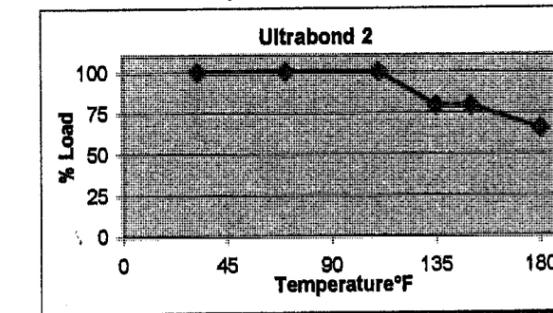
**ULTRABOND 1 Allowable Load Reduction Factor for Temperature Sensitivity**

ULTRABOND 1 Substrate Temp.	Adj. %
32	100
70	100
110	91
135	80
150	80
180	66



**ULTRABOND 2 Allowable Load Reduction Factor for Temperature Sensitivity**

ULTRABOND 2 Substrate Temp.	Adj. %
32	100
70	100
110	100
135	79
150	79
180	65



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as complying with the Florida  
Building Code  
Acceptance No. 05-9627.02  
Expiration Date 01/13/06  
By [Signature]  
Miami Dade Product Control  
Division

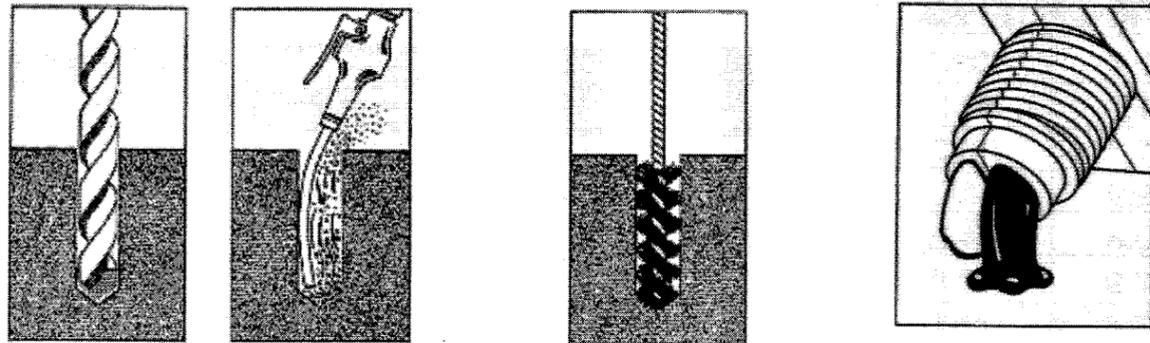


450 E. Copans Rd. Pompano Beach, Florida 33064

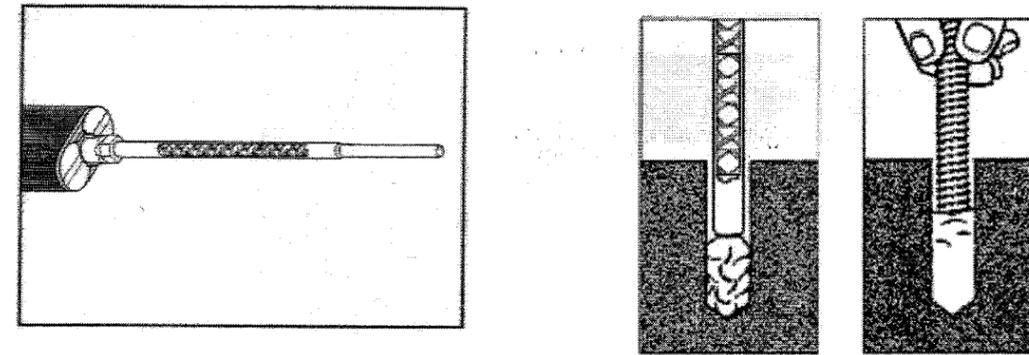
TITLE: HS-200 Epoxy, Ultrabond Epoxy and capsules			
Drawing Number	J31501	Sheet Number	3 of 4
Product approval #01-0117.01		Drawing Date	5/18/01
			Drawn By: J. H.

# INSTALLATION INSTRUCTIONS

## Epoxy Installation into Concrete

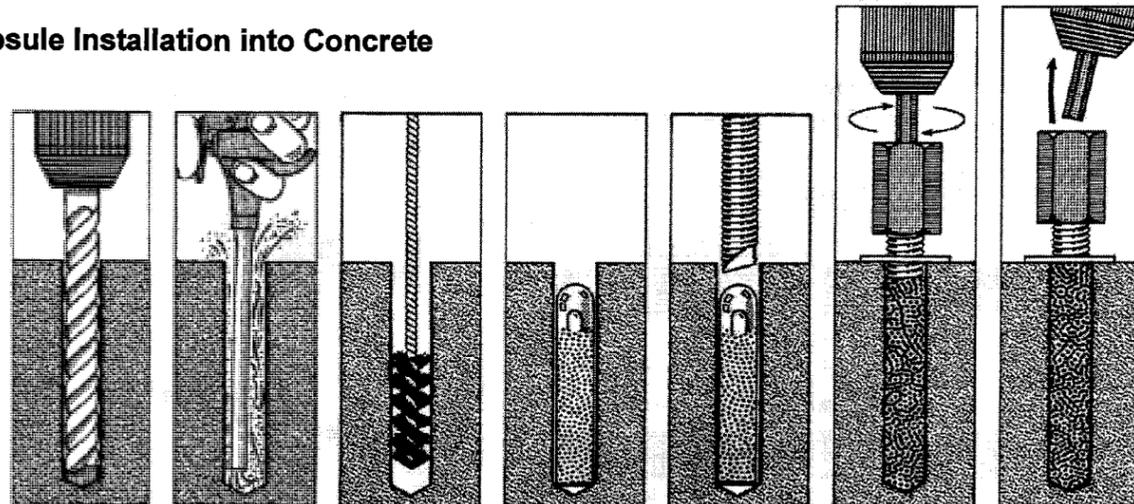


1. Drill hole to proper diameter and length.
2. Blow out dust from the bottom of the hole.
3. Brush the hole with a nylon brush. Blow out the hole again. The hole should be clean of any dust and debris.
4. Place the cartridge into the dispensing gun. Remove the plastic caps from the cartridge. Dispense a small amount of epoxy into a container until you get an even flow of both black and white material.



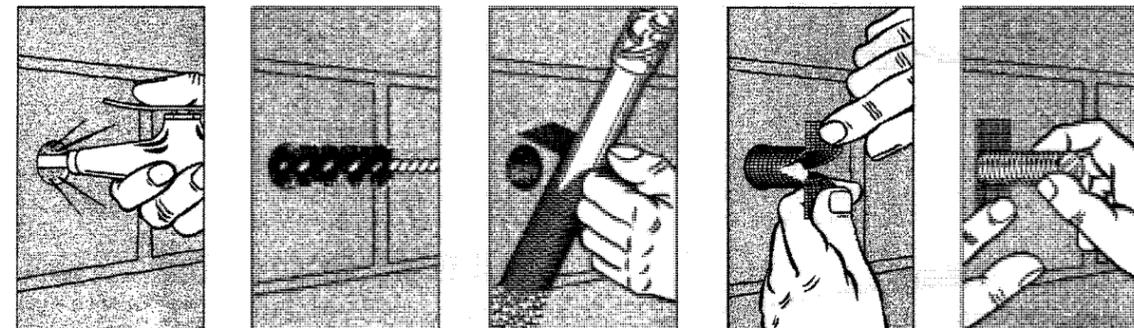
5. Place the nozzle on the cartridge. Slide the nut over the nozzle and thread the nut onto the cartridge. Dispense enough epoxy into a disposable container, until the color becomes a consistent gray color with no streaks.
6. Dispense the material from the bottom of the hole up. Fill approximately 5/8 of the hole depth while slowly withdrawing the nozzle.
7. Insert the threaded rod to the bottom of the hole while turning clockwise. The threaded rod should be free from dirt, grease, oil or other foreign material. Do not disturb or bolt-up until minimum bolt-up time has passed.

## Capsule Installation into Concrete



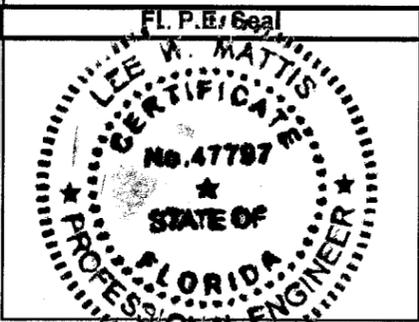
1. Drill hole to proper diameter and depth.
2. Blow out dust from the bottom of the hole.
3. Brush out the hole with a nylon brush. Blow out dust once again.
4. Insert capsule into the bottom of the hole.
5. Assemble chamfered rod into drive unit of a rotary drill.
6. Drill rod to the bottom of the hole.
7. Without disturbing the anchor, remove drill from the anchor.

## Epoxy Installation into Unreinforced Concrete



1. Drill hole and blow out the dust from the hole.
2. Brush out the hole with a nylon brush. Blow out the dust one final time.
3. Insert the mixing nozzle into the bottom of the screen and completely fill the screen while withdrawing the nozzle. Fill the screen completely all the way to the top.
4. Insert the epoxy filled screen into the hole.
5. Insert the threaded rod or dowel all the way into the screen. Do not disturb the anchor or bolt up the anchor until minimum bolt up time.

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No. 05-0627.02  
 Expiration Date 01/13/06  
 By   
 Miami Dade Product Control  
 Division



Lee W. Mattis 11/10/05

Rev No.	REVISIONS	Date	For Office Use



**ADHESIVES TECHNOLOGY**  
CORP.  
 Concrete Solutions for Concrete Applications

450 E. Copans Rd. Pompano Beach, Florida 33064

TITLE: HS-200 Epoxy, Ultrabond Epoxy and capsules			
Drawing Number	J31501	Sheet Number	4 of 4
Product approval #01-0117.01		Drawing Date	5/18/2001
			Drawn By: J. H.