MIAMI-DADE

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)

Powers Fasteners, Inc.
2 Power Square.
New Rochelle, N.Y. 10801

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: Adhesive Anchors

APPROVAL DOCUMENT: Drawing No. 04-287, Sheets 1 through 6 of 6, titled "AC100 Plus Adhesive Anchor" dated 07/26/04with last revision on 12/13/04, prepared by Thornton Tomasetti Group, signed and sealed by J. W. Knezevich 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", 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 as well as approval document mentioned above.
The submitted documentation was reviewed by **Candido E. Font, P.E.**

01/13/05

PRODUCT CONTROL ACCEPTED

Power Fasteners, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE PAGE

A DRAWINGS:

1. Drawings prepared by Thornton Tomasetti Group, titled "AC100 Plus Adhesive Anchor"; Drawing No. 04-287, dated 07/26/04 with last revision on 12/13/04, sheet 1 through 6 of 6, signed and sealed by J. W. Knezevich, PE.

B TEST:

	Laboratory No.	Test Report.	Date.	Signature
1.	CEL 3R112SW	ICBO AC58	08/05/03	L.W. Mattis PE
2.	CEL 3R112Cmu	ICBO AC58	08/05/03	L.W. Mattis PE.
3.	CEL 3R112LW	ICBO AC58	08/05/03	L.W. Mattis PE.
4.	ARL 30422	ICBO AC58	06/13/03	C. A. Hamon PE
5.	ARL 30423	ICBO AC58	06/16/03	C. A. Hamon PE
6.	ARL 30424	ICBO AC58	04/21/03	C. A. Hamon PE.
7.	ARL 30425	ICBO AC58	04/22/03	C. A. Hamon PE
8.	ARL 30440	ICBO AC58	06/16/03	C. A. Hamon PE
9.	ARL 30441	ICBO AC58	05/16/03	C. A. Hamon PE.
10.	ARL 30345	ICBO AC58	01/23/03	C. A. Hamon PE.
11.	ARL 30346	ICBO AC58	01/06/03	C. A. Hamon PE.
12.	ARL 30347	ICBO AC58	01/06/03	C. A. Hamon PE.
13.	ARL 30348	ICBO AC58	01/06/03	C. A. Hamon PE.
14.	ARL 30350	ICBO AC58	01/06/03	C. A. Hamon PE.
15.	ARL 30351	ICBO AC58	01/06/03	C. A. Hamon PE.
16.	ARL 30352	ICBO AC58	01/06/03	C. A. Hamon PE.
17.	ARL 30354	ICBO AC58	07/25/03	C. A. Hamon PE.
18.	ARL 30355	ICBO AC58	01/24/03	C. A. Hamon PE.
19.	ARL 30356	ICBO AC58	06/24/03	C. A. Hamon PE.
20.	ARL 30357	ICBO AC58	06/20/03	C. A. Hamon PE.
21.	ARL 30359	ICBO AC58	05/19/03	C. A. Hamon PE.

C CALCULATIONS:

N/A

D QUALITY ASSURANCE.

1. Miami-Dade Quality Control Division.

E MATERIAL CERTIFICATIONS:

N/A

F STATEMENTS:

1. Confirmation letter issued by Power Fasteners Inc on 12/06/04, signed by M. Ziegler.
2. No interest letter issued by Powers Fasteners on 08/10/04, signed by M. Ziegler and notarized by K. L. Fleming.
3. No interest letter issued by LZA Technology on 07/19/04, signed by J.W. Knezevich and notarized by R. Hernandez.
4. Code compliance letter issued by LZA Technology on 08/25/04 signed and sealed by J.W. Knezevich PE.

01/13/05

Candido F. Font, P.E.
Senior Product Control Examiner
NOA No 04-0820.02
Expiration Date: January 13, 2010
Approval Date: January 13, 2005

TABLE 1 APPLICATION DESCRIPTIONS

BASE MATERIAL	ADHESIVE	ANCHOR MATERIAL	SPECIFICATION DATA	LOAD DATA
NORMAL WEIGHT CONCRETE 2K & 4K	AC100 PLUS	THREADED ROD	TABLES 2, 4, 5 & 6	TABLES 7, 8, 11 & 12
		REINFORCING BAR	TABLES 3, 4, 5 & 6	TABLES 9 & 10
3K LIGHTWEIGHT CONCRETE	AC100 PLUS	THREADED ROD	TABLES 2, 4, 5 & 6	TABLE 13
GROUT-FILLED CONCRETE MASONRY	AC100 PLUS	THREADED ROD	TABLES 2, 4 & 5	TABLE 14
HOLLOW CONCRETE MASONRY	AC100 PLUS	THREADED ROD WITH SCREEN TUBES	TABLE 15	TABLE 15

TABLE 2 SPECIFICATIONS FOR INSTALLATION OF THREADED RODS IN CONCRETE MATERIALS WITH AC100 PLUS ADHESIVE ANCHOR

PROPERTY	ROD DIAMETER (d)						
	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"
Anom = NOMINAL AREA OF THREADED ROD (SQ. IN.)	0.1105	0.1963	0.3068	0.4418	0.6013	0.7854	1.2272
Ase = TENSILE STRESS AREA ROD (SQ. IN.)	0.0775	0.1419	0.2260	0.3345	0.4617	0.6057	0.9691
dbit = NOMINAL BIT DIAMETER (IN.)	7/16	9/16	11/16	13/16	15/16 OR 1	1-1/16	1-3/8
Tmax = MAXIMUM TIGHTENING TORQUE (FT-LB)	15-20	30-40	70-90	120-160	150-200	225-300	375-500

FOR SI: 1" = 25.4 mm, 1 FT-LB = 1.35 N-m, 1 SQ. IN. = 645.2 SQ. mm

TABLE 3 SPECIFICATIONS FOR INSTALLATION OF REINFORCING BAR IN CONCRETE MATERIALS WITH AC100 PLUS ADHESIVE ANCHOR

PROPERTY	REINFORCING BAR SIZES								
	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11
d = NOMINAL BAR DIAMETER (IN.)	0.375	0.500	0.625	0.750	0.875	1.000	1.128	1.270	1.410
D = EFFECTIVE ANCHOR DIAMETER (IN.)	3/8	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-3/8
Abr = NOMINAL AREA OF REINFORCING BAR (SQ. IN.)	0.110	0.200	0.310	0.440	0.600	0.790	1.000	1.270	1.560
BD - NOMINAL BIT DIAMETER (IN.)	7/16	9/16	11/16	7/8	1	1-1/8	1-1/4	1-1/2	1-5/8

FOR SI: 1" = 25.4 mm, 1 SQ. IN. = 645.2 SQ. mm

TABLE 4 SPECIFICATIONS FOR THREADED ROD AND REINFORCING BAR

THREADED ROD				
STEEL DESCRIPTION (GENERAL)	STEEL SPECIFICATION (ASTM)	ROD DIAMETERS (IN.)	MIN. YIELD STRENGTH fy (ksi)	MIN. ULTIMATE STRENGTH fu (ksi)
STANDARD CARBON ROD	A36	ALL	36.0	58.0
	A307, GRADE C	3/8 THRU 4	36.0	58.0
HIGH STRENGTH CARBON ROD	A193 B7	3/8 THRU 1-1/2	105.0	120.0
STAINLESS ROD (304/316)	F593, CW	3/8 THRU 5/8	65.0	100.0
		3/4 THRU 1-1/2	45.0	85.0
REINFORCING REBAR				
STEEL DESCRIPTION (GENERAL)	STEEL SPECIFICATION (ASTM)	ROD DIAMETERS (IN.)	MIN. YIELD STRENGTH fy (ksi)	MIN. ULTIMATE STRENGTH fu (ksi)
GRADE 40 REBAR	A615, A616, A617, A767 OR A775	ALL	40.0	70.0
GRADE 60 REBAR			60.0	90.0

FOR SI: 1" = 25.4 mm, 1 ksi = 6.89 Mpa

PRODUCT DESCRIPTION:

The AC100 Plus anchor system consists of a fast curing high strength structural adhesive used to bond threaded rods or steel reinforcing bars in predrilled holes into normal-weight concrete, structural lightweight concrete, concrete masonry units and concrete stem walls.

GENERAL NOTES:

1. THIS APPROVAL DOCUMENT REPRESENTS AN ADHESIVE ANCHOR SYSTEM ANALYZED WITH THE PROVISIONS SET FOR THE ISSUANCE OF A NOTICE OF ACCEPTANCE (NOA) BY MIAMI-DADE COUNTY PRODUCT CONTROL DIVISION FOR THE HIGH VELOCITY HURRICANE ZONE (HVHZ) OF THE FLORIDA BUILDING CODE, 2001 WITH 2002 AND 2003 REVISIONS.
2. THIS PRODUCT APPROVAL IS BASED UPON INDEPENDENT TESTING.
3. AC 100 PLUS IS A TWO-COMPONENT EPOXY ACRYLATE ADHESIVE IN A TEN-TO-ONE RATIO OF RESIN TO HARDENER BY VOLUME. THE ADHESIVE IS PACKAGED IN DUAL-COMPONENT PLASTIC CARTRIDGES. THE ADHESIVE CONTAINED IN THE CARTRIDGES IS DISPENSED WITH A MANUAL OR POWER ACTIVATED TOOL AND IS MIXED BY A STATIC MIXING NOZZLE, SUPPLIED BY POWERS FASTENERS, INC.
4. THIS ADHESIVE ANCHORING SYSTEM SHALL BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
5. THIS APPROVAL DOCUMENT IS GENERIC AND DOES NOT INCLUDE INFORMATION FOR SITE-SPECIFIC APPLICATIONS.
6. USE OF THIS APPROVAL DOCUMENT SHALL COMPLY WITH CHAPTER 61G15-23 OF THE FLORIDA ADMINISTRATIVE CODE.
7. ANY MODIFICATIONS OR ADDITIONS TO THIS APPROVAL DOCUMENT WILL VOID THE APPROVAL DOCUMENT.
8. ALLOWABLE LOADS FOR ADHESIVE ANCHORS INSTALLED IN WET, DAMP OR WATER-FILLED HOLES MUST BE REDUCED BY 15 %.

TABLE 5 ALLOWABLE STEEL STRENGTH FOR THREADED ROD & REINF. BARS

THREADED ROD								
ANCHOR DIAMETER (IN.)	TENSION (LBS.) STEEL SPECIFICATION				SHEAR (LBS.) STEEL SPECIFICATION			
	ASTM A36	ASTM A307	ASTM A193 B7	ASTM F593 304/316 SS	ASTM A36	ASTM A307	ASTM A193 B7	ASTM F593 304/316 SS
3/8	2,115	2,115	4,375	3,630	1,090	1,090	2,255	1,870
1/2	3,755	3,755	7,775	6,470	1,940	1,940	4,005	3,330
5/8	5,870	5,870	12,150	10,130	3,025	3,025	6,260	5,210
3/4	8,455	8,455	17,495	12,400	4,355	4,355	9,010	6,390
7/8	11,510	11,510	23,810	16,860	5,930	5,930	12,265	8,680
1	15,035	15,035	31,100	22,020	7,745	7,745	16,020	11,340
1-1/4	23,485	23,485	48,595	34,420	12,100	12,100	25,035	17,730
REINFORCING REBAR 1								
REBAR SIZE (No.)	TENSION (LBS.) STEEL SPECIFICATION (ASTM)				SHEAR (LBS.) STEEL SPECIFICATION (ASTM)			
	GRADE 40		GRADE 60		GRADE 40		GRADE 60	
3	2,200		2,640		1,310		1,680	
4	4,000		4,800		2,380		3,060	
5	6,200		7,440		3,690		4,740	
6	8,800		10,560		5,235		6,730	
7	12,000		14,400		7,140		9,180	
8	15,800		18,960		9,400		12,085	
9	20,000		24,000		11,900		15,300	
10	25,400		30,480		15,115		19,430	
11	31,200		37,440		18,565		23,870	

FOR SI: 1" = 25.4 mm, 1 lbf = 4.48 N

1. REINFORCING BAR MUST CONFORM TO EITHER ASTM A615, A616, A617, A706, A767 OR A775.
2. THE TABULATED ALLOWABLE LOAD CAPACITIES FOR STEEL ARE PROVIDED FOR REFERENCE. THESE VALUES MUST BE COMPARED WITH THE CORRESPONDING ALLOWABLE LOAD CAPACITIES FOR THE AC100 PLUS ADHESIVE ANCHORS, DIAMETER TO DIAMETER. ALLOWABLE DESIGN LOAD MUST BE THE LESSER OF THE ALLOWABLE STEEL STRENGTH AS SHOWN ABOVE AND THE ALLOWABLE LOAD CAPACITIES AS SHOWN IN TABLES 7 THROUGH 15.
3. ALLOWABLE TENSION LOADS FOR THREADED ROD EQUAL 0.33 x Anom x fu. ALLOWABLE SHEAR LOADS FOR THREADED ROD EQUAL 0.17 x Anom x fu.
4. ALLOWABLE STRENGTH FOR REINFORCING BARS IS BASED ON AN ALLOWABLE TENSILE STRENGTH OF 20,000 P.S.I. FOR GRADE 40 AND 24,000 P.S.I. FOR GRADE 60 APPLIED TO THE CROSS-SECTIONAL AREA OF THE REBAR. ALLOWABLE SHEAR LOADS FOR THE REBAR EQUAL 0.17 x Abr x fu.

Approved as complying with the Florida Building Code
Date 01/13/05
NOA# 04-0820.02
Miami Dade Product Control Division
By

Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7519
Website: www.TheTTGroup.com

AC100 PLUS ADHESIVE ANCHOR

Powers FASTENERS
2 Powers Square
New Rochelle, NY 10801
(914) 235-6300
(914) 235-1913 fax
www.powers.com

John W. Knezevich
Professional Engineer
FL License No.: PE 0041961

DEC 13 2004

revisions

no	date	by	description
1	11/04/04	TLF	COUNTY COMMENTS
2	12/13/04	TLF	COUNTY COMMENTS

date 07/26/2004
scale AS NOTED
drawn by MCR
design by JWK
checked by JWK
drawing no. 04-287
sheet 1 of 6

FIGURE 1 LOAD CAPACITY OF AC100 PLUS WITH IN-SERVICE TEMP. VARIATION

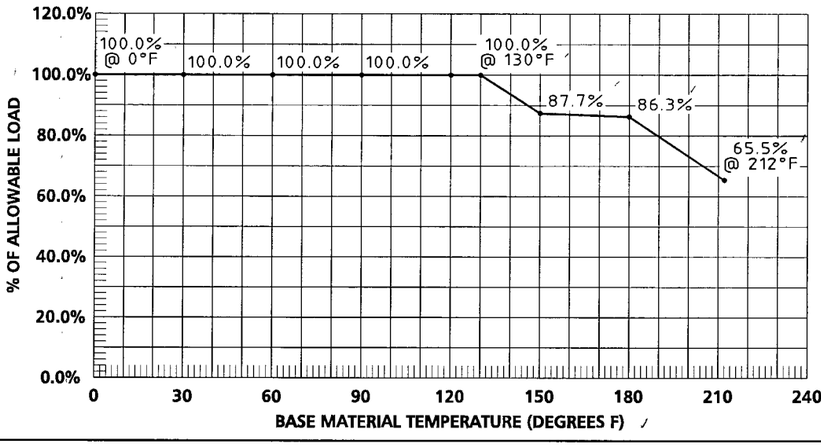


TABLE 6 REDUCTION FACTORS FOR SPACING AND EDGE DISTANCE USING AC100 PLUS ADHESIVE ANCHOR 1

ANCHOR DIMENSION	LOAD TYPE	CRITICAL DISTANCE (FULL ANCHOR CAPACITY)	LOAD FACTOR	MINIMUM DISTANCE (REDUCED CAPACITY)	LOAD FACTOR
SPACING (S)	TENSION AND SHEAR	Scr = 2 x hv	FN = FV = 1.0	Smin (0.25 x Scr) = 0.5 x hv	FN = FV = 0.70
EDGE DISTANCE (C)	TENSION	Ccr = 1.5 x hv	FN = 1.0	Cmin (0.33 x Ccr) = 0.5 x hv	FN = 0.60
	SHEAR TOWARDS EDGE	Ccr = 1.5 x hv	FV = 1.0	Cmin (0.33 x Ccr) = 0.5 x hv	FV = 0.35
	SHEAR NOT TOWARDS EDGE	Ccr = 1.5 x hv	FV = 1.0	Cmin (0.33 x Ccr) = 0.5 x hv	FV = 0.55

hv = EFFECTIVE EMBEDMENT. WHEN ADJACENT ANCHORS ARE DIFFERENT SIZES OR EMBEDMENTS, USE LARGEST VALUE FOR hv.
S = THE MEASURE BETWEEN ANCHORS, CENTERLINE TO CENTERLINE DISTANCE.
Scr = THE MIN. ANCHOR SPACING DISTANCE AT WHICH THE ANCHOR LOAD CAPACITY IS NOT INFLUENCED BY ADJACENT ANCHORS.
Smin = THE MIN. ANCHOR SPACING DISTANCE AT WHICH THE ANCHORS ARE TESTED FOR RECOGNITION.
C = THE MEASURE BETWEEN THE ANCHOR CENTERLINE AND THE FREE EDGE OF THE BASE MATERIAL.
Ccr = THE MIN. ANCHOR EDGE DIST. AT WHICH THE ANCHOR LOAD CAPACITY IS NOT INFLUENCED BY THE EDGE OF THE BASE MATERIAL.
Cmin = THE MINIMUM EDGE DISTANCE AT WHICH THE ANCHORS ARE TESTED FOR RECOGNITION.
FN = REDUCTION FACTOR APPLIED TO TENSION LOAD CAPACITIES WHEN SPACING AND EDGE DISTANCES ARE AT MIN. DISTANCES.
FV = REDUCTION FACTOR APPLIED TO SHEAR LOAD CAPACITIES WHEN SPACING AND EDGE DISTANCES ARE AT MIN. DISTANCES.

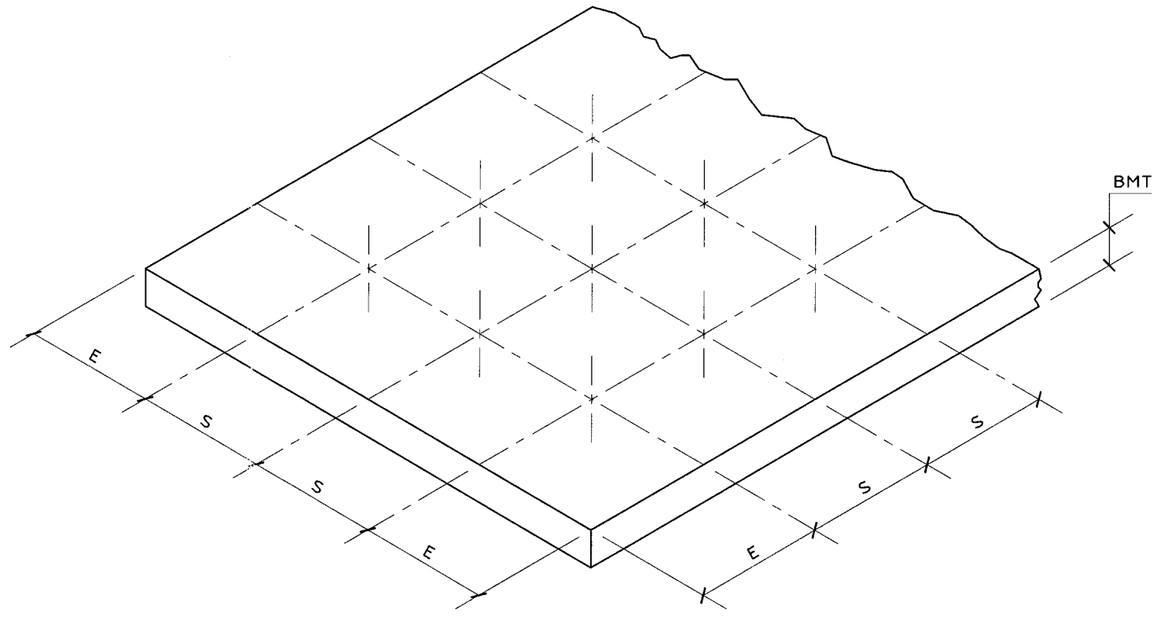
1. LOAD VALUES IN THE TABLES ARE MULTIPLIED BY THE REDUCTION FACTORS WHEN SPACING AND EDGE DISTANCES ARE LESS THAN CRITICAL DISTANCES. LINEAR INTERPOLATION IS ALLOWED FOR SPACING AND EDGE DISTANCES THAT FALL BETWEEN CRITICAL AND MINIMUM DISTANCES. WHEN A GROUP OF ANCHORS IS AFFECTED BY BOTH REDUCED SPACING AND REDUCED EDGE DISTANCE, THE SPACING AND EDGE DISTANCE REDUCTION FACTORS MUST BE COMBINED (MULTIPLIED).

TABLE 16 MANUFACTURER'S RECOMMENDED CURE TIME FOR AC100 PLUS ADHESIVE 1

BASE MATERIAL TEMPERATURE (DEGREES F)	MAXIMUM GEL TIME	MINIMUM CURE TIME
-4°F (-20°C)	24 HRS.	72 HRS.
5°F (-15°C)	8 HRS.	24 HRS.
14°F (-10°C)	4 HRS.	12 HRS.
23°F (-5°C)	2 HRS.	6 HRS.
32°F (0°C)	60 MIN.	4 HRS.
41°F (5°C)	20 MIN.	2 HRS.
50°F (10°C)	15 MIN.	60 MIN.
59°F (15°C)	10 MIN.	45 MIN.
68°F (20°C)	7 MIN.	30 MIN.
86°F (30°C)	4 MIN.	25 MIN.
104°F (40°C)	2 MIN.	15 MIN.

FOR SI: t°C = (t°F - 32)/1.8

1. ANCHORS MUST NOT BE DISTURBED BETWEEN THE MAXIMUM GEL TIME AND THE MINIMUM CURE TIME.



Approved as noted by Miami-Dade Product Control
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Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7319
Website: www.TheTTGroup.com

AC100 PLUS ADHESIVE ANCHOR

POWERS FASTENERS
2 Powers Square
New Rochelle, NY 10801
(914) 235-6300
(914) 235-1913 fax
www.powers.com

John W. Knezevich
Professional Engineer
FL License No.: PE 0041961

DEC 13 2004

revisions

no	date	by	description
1	11/04/04	TLF	COUNTY COMMENTS
2	12/13/04	TLF	COUNTY COMMENTS

date 07/26/2004
scale AS NOTED
drawn by MCR
design by JWK
checked by JWK
drawing no. 04-287
sheet 2 of 6

Print Information: \\sunshine\filesys\FL1\Projects\KK4287.00\Drawings\R2-sub\04-287-02.dwg MCantu 12/13/2004 12:32:12pm 12/13/04 11:14

TABLE 7	ALLOW. TENSION - THREADED ROD IN CONCRETE 1,2,3,4,5,6				
ALLOWABLE TENSION LOAD CAPACITIES BASED ON BOND STRENGTH FOR AC100 PLUS ADHESIVE INSTALLED WITH THREADED ROD IN CONCRETE					
ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	SPACING (IN.) CRITICAL (Scr)	EDGE DISTANCE (IN.) CRITICAL (Ccr)	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 2000 psi	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 4000 psi
3/8	1-3/4	3-1/2	2-5/8	820	1,025
	3-1/2	7	5-1/4	2,530	2,655
	5-1/4	10-1/2	7-7/8	2,530	2,655
1/2	2-1/8	4-1/4	3-1/8	1,345	1,690
	4-1/4	8-1/2	6-3/8	3,825	4,385
	6-3/8	12-3/4	9-5/8	5,080	5,335
5/8	2-1/2	5	3-3/4	1,890	2,475
	5	10	7-1/2	4,565	6,340
	7-1/2	15	11-1/4	6,990	8,165
3/4	3-3/8	6-3/4	5	2,375	3,615
	6-5/8	13-1/4	10	7,010	9,385
	10	20	15	10,855	11,300
7/8	3-3/4	7-1/2	5-5/8	3,165	4,615
	7-1/2	15	11-1/4	7,940	9,565
	11-1/4	22-1/2	16-7/8	9,900	13,395
1	4-1/8	8-1/4	6-1/8	3,830	5,475
	8-1/4	16-1/2	12-3/8	9,620	13,585
	12-3/8	24-3/4	18-5/8	12,160	17,050
1-1/4	6	12	9	5,335	6,680
	12	24	18	13,235	19,465
	15	30	22-1/2	16,605	23,260

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION. LINEAR INTERPOLATION MAY BE USED FOR CONCRETE STRENGTHS BETWEEN THOSE LISTED.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS MAY BE USED FOR INTERMEDIATE SPACINGS AND EDGE DISTANCES USING FACTORS SHOWN IN TABLE 6. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS AT INTERMEDIATE EMBEDMENT DEPTHS MAY ALSO BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

TABLE 8	ALLOW. SHEAR - THREADED ROD IN CONCRETE 1,2,3,4,5,6				
ALLOWABLE SHEAR LOAD CAPACITIES BASED ON BOND STRENGTH FOR AC100 PLUS ADHESIVE INSTALLED WITH THREADED ROD IN CONCRETE					
ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	SPACING (IN.) CRITICAL (Scr)	EDGE DISTANCE (IN.) CRITICAL (Ccr)	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 2000 psi	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 4000 psi
3/8	1-3/4	3-1/2	2-5/8	755	1,115
	3-1/2	7	5-1/4	910	1,115
	5-1/4	10-1/2	7-7/8	1,100	1,185
1/2	2-1/8	4-1/4	3-1/8	940	1,740
	4-1/4	8-1/2	6-3/8	2,365	2,645
	6-3/8	12-3/4	9-5/8	2,365	2,715
5/8	2-1/2	5	3-3/4	1,335	1,925
	5	10	7-1/2	3,940	4,325
	7-1/2	15	11-1/4	3,940	4,615
3/4	3-3/8	6-3/4	5	2,205	3,815
	6-5/8	13-1/4	10	6,100	6,100
	10	20	15	6,100	6,100
7/8	3-3/4	7-1/2	5-5/8	2,830	4,890
	7-1/2	15	11-1/4	7,480	8,690
	11-1/4	22-1/2	16-7/8	8,605	8,970
1	4-1/8	8-1/4	6-1/8	3,090	4,890
	8-1/4	16-1/2	12-3/8	8,765	11,420
	12-3/8	24-3/4	18-5/8	11,420	11,420
1-1/4	6	12	9	6,405	8,875
	12	24	18	16,560	17,295
	15	30	22-1/2	17,300	18,565

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION. LINEAR INTERPOLATION MAY BE USED FOR CONCRETE STRENGTHS BETWEEN THOSE LISTED.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS MAY BE USED FOR INTERMEDIATE SPACINGS AND EDGE DISTANCES USING FACTORS SHOWN IN TABLE 6. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS AT INTERMEDIATE EMBEDMENT DEPTHS MAY ALSO BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

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Date 01/13/05
NOA# 04-0820.02
Miami-Dade Product Control Division
By

Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7319
Website: www.TheTTGroup.com

AC100 PLUS ADHESIVE ANCHOR

Powers FASTENERS
2 Powers Square
New Rochelle, NY 10801
(914) 235-6300
(914) 235-1913 fax
www.powers.com

John W. Knezevich
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sheet 3 of 6

TABLE 9 | ALLOW. TENSION - REINFORCING BAR IN CONC. 1,2,3,4,5,6

ALLOWABLE TENSION LOAD CAPACITIES BASED ON BOND STRENGTH FOR AC100 PLUS ADHESIVE INSTALLED WITH REINFORCING BAR IN CONCRETE

ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	SPACING (IN.) CRITICAL (Scr)	EDGE DISTANCE (IN.) CRITICAL (Ccr)	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 2000 psi	f'c = 4000 psi
No. 3 (0.375)	1-5/8	3-1/4	2-3/8	725	1,170
	3-3/8	6-3/4	5-1/8	1,680	1,850
	5-5/8	11-1/4	8-1/2	1,885	1,850
No. 4 (0.500)	2-1/4	4-1/2	3-3/8	1,320	1,855
	4-1/2	9	6-3/4	3,780	4,355
	7-1/2	15	11-1/4	4,425	4,425
No. 5 (0.625)	2-3/4	5-1/2	4-1/8	1,935	3,020
	5-5/8	11-1/4	8-1/2	4,995	7,140
	9-3/8	18-3/4	14-1/8	7,065	7,720
No. 6 (0.750)	3-3/8	6-3/4	5	2,880	4,910
	6-3/4	13-1/2	10-1/8	7,110	10,150
	11-1/4	22-1/2	16-7/8	9,970	11,195
No. 7 (0.875)	3-7/8	7-3/4	5-3/4	2,960	5,555
	7-7/8	15-3/4	11-7/8	6,735	11,550
	13-1/8	26-1/4	19-3/4	13,270	15,640
No. 8 (1.000)	4-1/2	9	6-3/4	4,560	6,940
	9	18	13-1/2	8,810	12,215
	15	30	22-1/2	13,655	16,330
No. 9 (1.125)	5	10	7-1/2	3,665	6,115
	10-1/8	20-1/4	15-1/4	9,650	16,315
	16-7/8	33-3/4	25-3/8	21,125	22,395
No. 10 (1.250)	5-5/8	11-1/4	8-3/8	5,540	8,470
	11-1/4	22-1/2	16-7/8	11,900	18,075
	18-1/2	37	28-1/8	19,225	21,850
No. 11 (1.375)	6-1/8	12-1/4	9-1/8	6,490	11,045
	12-3/8	24-3/4	18-5/8	15,030	23,295
	19-1/4	38-1/2	28-1/8	26,150	31,604

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION. LINEAR INTERPOLATION MAY BE USED FOR CONCRETE STRENGTHS BETWEEN THOSE LISTED.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS MAY BE USED FOR INTERMEDIATE SPACINGS AND EDGE DISTANCES USING FACTORS SHOWN IN TABLE 6. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS AT INTERMEDIATE EMBEDMENT DEPTHS MAY ALSO BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

TABLE 10 | ALLOWABLE SHEAR - REINF. BAR IN CONCRETE 1,2,3,4,5,6

ALLOWABLE SHEAR LOAD CAPACITIES BASED ON BOND STRENGTH FOR AC100 PLUS ADHESIVE INSTALLED WITH REINFORCING BAR IN CONCRETE

ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	SPACING (IN.) CRITICAL (Scr)	EDGE DISTANCE (IN.) CRITICAL (Ccr)	LOAD BASED ON BOND STRENGTH (LBS) 1 f'c = 2000 psi	f'c = 4000 psi
No. 3 (0.375)	3-3/8	6-3/4	5-1/8	1,340	1,340
No. 4 (0.500)	4-1/2	9	6-3/4	1,755	2,675
No. 5 (0.625)	5-5/8	11-1/4	8-1/2	3,220	4,610
No. 6 (0.750)	6-3/4	13-1/2	10-1/8	4,875	5,680
No. 7 (0.875)	7-7/8	15-3/4	11-7/8	7,050	7,435
No. 8 (1.000)	9	18	13-1/2	8,030	9,205
No. 9 (1.125)	10-1/8	20-1/4	15-1/4	8,518	13,665
No. 10 (1.250)	11-1/4	22-1/2	16-7/8	14,175	16,095

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION. LINEAR INTERPOLATION MAY BE USED FOR CONCRETE STRENGTHS BETWEEN THOSE LISTED.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS MAY BE USED FOR INTERMEDIATE SPACINGS AND EDGE DISTANCES USING FACTORS SHOWN IN TABLE 6. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS AT INTERMEDIATE EMBEDMENT DEPTHS MAY ALSO BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

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Division

Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7519
Website: www.TheTTGroup.com

AC100 PLUS ADHESIVE ANCHOR

Powers FASTENERS
2 Powers Square
New Rochelle, NY 10801
(914) 235-6300
(914) 235-1913 fax
www.powers.com

John W. Knezevich
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TABLE 11

ALLOWABLE LOAD CAPACITIES FOR AC100 PLUS ADHESIVE INSTALLED IN CONCRETE STEM WALLS FOR SILL PLATE AND OTHER ATTACHMENTS IN CONCRETE 1,2,3,4,5

ANCHOR DIAMETER (IN.)	MINIMUM EMBED. (IN.)	MINIMUM WALL WIDTH (IN.)	EDGE DISTANCE (IN.)	END DISTANCE (IN.)	TENSION LOADS BASED ON BOND STRENGTH (LBS) 1
					f'c ≥ 2000 psi
1/2	8	6	1-3/4	5	2,715
5/8	10	6	1-3/4	5	2,845
3/4	13-1/4	8	1-3/4	5	3,155
7/8	15	8	1-3/4	5	3,520

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION.

4. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

5. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

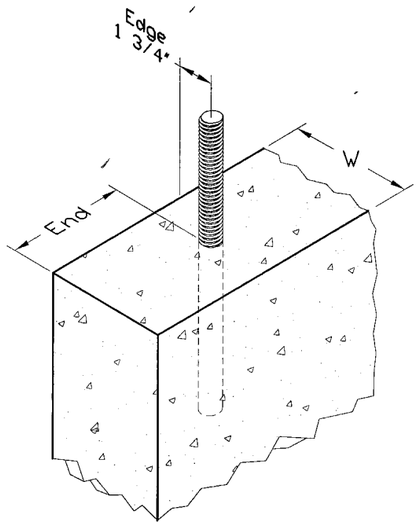

TABLE 12

ALLOWABLE LOAD CAPACITIES FOR AC100 PLUS ADHESIVE INSTALLED AT THE EDGE OF A CONCRETE SLAB FOR SILL PLATE AND OTHER ATTACHMENTS IN CONCRETE 1,2,3,4,5,6

ANCHOR DIAMETER (IN.)	MINIMUM EMBED. (IN.)	EDGE DISTANCE (IN.)	TENSION LOADS BASED ON BOND STRENGTH (LBS) 1		SHEAR LOADS BASED ON BOND STRENGTH (LBS) 1			
					TOWARDS THE EDGE		PARALLEL TO EDGE	
			f'c = 2000 psi	f'c = 4000 psi	f'c = 2000 psi	f'c = 4000 psi	f'c = 2000 psi	f'c = 4000 psi
3/8	3-1/2	1-3/4	1,520	1,975	–	–	960	960
1/2	4-1/4	1-3/4	2,025	2,740	495	520	1,300	1,690
	8-1/2		4,030	4,880	495	520	1,300	1,690
5/8	5	1-3/4	2,285	3,545	495	685	1,700	2,780
	10		4,990	6,190	495	685	1,700	2,780
7/8	7-1/2	1-3/4	4,030	5,120	815	910	1,915	3,625
	15		7,975	7,975	815	910	1,915	3,625

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION. LINEAR INTERPOLATION MAY BE USED FOR CONCRETE STRENGTHS BETWEEN THOSE LISTED.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS AT INTERMEDIATE EMBEDMENT DEPTHS MAY BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

TABLE 13 | ALLOW. TENSION & SHEAR - THREADED ROD IN LIGHTWEIGHT CONC. 1,2,3,4,5,6

ALLOWABLE TENSION AND SHEAR LOAD CAPACITIES BASED ON BOND STRENGTH FOR AC100 PLUS ADHESIVE INSTALLED WITH THREADED ROD IN LIGHTWEIGHT CONCRETE

ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	SPACING (IN.)	EDGE DISTANCE (IN.)	TENSION LOAD BASED ON BOND STRENGTH (LBS) 1	SHEAR LOAD BASED ON BOND STRENGTH (LBS) 1
		CRITICAL (Scr)	CRITICAL (Ccr)	f'c ≥ 3000 psi	f'c ≥ 3000 psi
3/8	1-3/4	4-1/8	2-5/8	660	600
	3-1/2	8-1/4	5-1/4	1,090	1,370
1/2	2-1/8	5	3-1/8	700	815
	4-1/4	10	6-3/8	1,330	2,445
5/8	2-1/2	5-7/8	3-3/4	750	975
	5	11-3/4	7-1/2	1,460	3,270

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

1. ALLOWABLE LOAD MUST BE LESSER OF ALLOWABLE BOND OR ALLOWABLE STEEL STRENGTH AS SHOWN IN TABLE 5.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 4.0 TO VALUES OBTAINED FROM TESTING.

3. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN CONCRETE THAT HAS REACHED THE MINIMUM DESIGNATED ULTIMATE COMPRESSIVE STRENGTH AT THE TIME OF INSTALLATION.

4. LINEAR INTERPOLATION FOR ALLOWABLE LOADS FOR ANCHORS MAY BE USED FOR INTERMEDIATE SPACINGS AND EDGE DISTANCES USING FACTORS SHOWN IN TABLE 6. LINEAR INTERPOLATION FOR ALLOWABLE LOADS AT INTERMEDIATE EMBEDMENT DEPTHS MAY BE USED.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.

6. MINIMUM CONCRETE THICKNESS IS 1.5 hv.

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Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7319
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TABLE 14 ALLOWABLE TENSION AND SHEAR LOAD CAPACITIES FOR AC100 PLUS ADHESIVE INSTALLED WITH THREADED ROD IN MIN. 6" WIDE GROUT-FILLED CONCRETE MASONRY 1,2,3

ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	EDGE DISTANCE (IN.)	END DISTANCE (IN.)	SHEAR LOAD (LBS)
ANCHOR INSTALLED THROUGH FACE SHELL				
3/8	3-1/2	3-3/4	12	895
		12	12	945
1/2	4-1/4	3-3/4	12	1,255
		12	12	1,380
5/8	5	3-3/4	12	1,415
		12	12	2,015
ANCHOR INSTALLED IN JOINT				
3/8	3-1/2	16	8	1,020
1/2	4-1/4	16	8	1,465
5/8	5	16	8	1,940

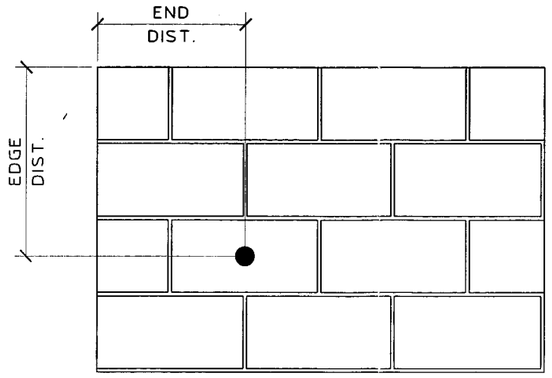
ANCHOR DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	EDGE DISTANCE (IN.)	END DISTANCE (IN.)	SHEAR LOAD (LBS)	
				TOWARDS THE EDGE	PARALLEL TO EDGE
ANCHOR INSTALLED IN CELL OPENING (TOP OF WALL)					
5/8	5	1-3/4	10-3/4	310	800

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

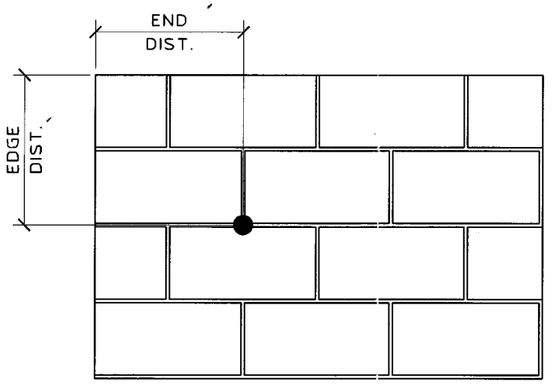
1. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN MINIMUM GRADE N, TYPE II, LIGHTWEIGHT, MEDIUM WEIGHT, OR NORMAL WEIGHT CONCRETE MASONRY UNITS CONFORMING TO ASTM C 90 THAT HAVE REACHED THE MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI AT THE TIME OF INSTALLATION. THE MASONRY UNITS MUST BE FULLY GROUTED WITH A MINIMUM GROUT & STRENGTH OF f'c = 2000 P.S.I. MORTAR MUST BE MINIMUM TYPE N.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 5.0 TO VALUES OBTAINED FROM TESTING.

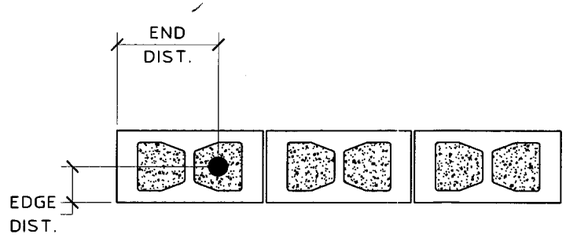
3. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.



INSTALLATION IN FACE SHELL
(GROUT FILLED MASONRY)



INSTALLATION IN JOINT
(GROUT FILLED MASONRY)



INSTALLATION IN CELL OPENING
(GROUT FILLED MASONRY)

TABLE 15 ALLOWABLE TENSION AND SHEAR LOAD CAPACITIES FOR AC100 PLUS ADHESIVE INSTALLED WITH THREADED ROD AND SCREEN TUBE IN MIN. 6" WIDE HOLLOW CONC. MASONRY THROUGH SINGLE FACE SHELL 1,2,3,4,5

ANCHOR DIAMETER (IN.)	DRILL BIT DIAMETER (IN.)	MINIMUM EMBEDMENT (IN.)	END DISTANCE (IN.)	END DISTANCE (IN.)	TENSION LOAD (LBS)	SHEAR LOAD (LBS)
1/2	5/8	3-1/2	3-3/4	3-3/4	145	315
5/8	3/4	3-1/2	3-3/4	3-3/4	130	385

FOR SI: 1" = 25.4 mm, 1 psi = 6.89 kPa, 1 lbf = 4.48 N

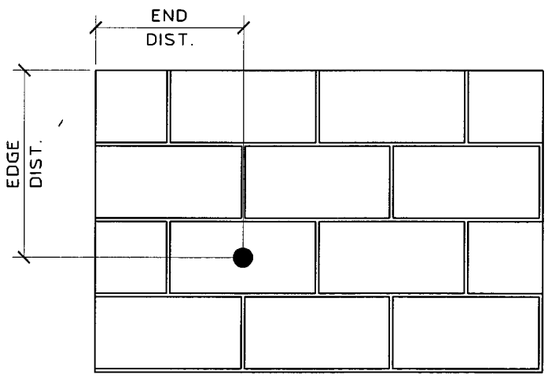
1. TABULATED LOAD VALUES ARE FOR ANCHORS INSTALLED IN MINIMUM GRADE N, TYPE II, LIGHTWEIGHT, MEDIUM WEIGHT, OR NORMAL WEIGHT CONCRETE MASONRY UNITS CONFORMING TO ASTM C 90 THAT HAVE REACHED THE MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI AT THE TIME OF INSTALLATION.

2. ALLOWABLE LOADS BASED ON BOND STRENGTH ARE CALCULATED USING A SAFETY FACTOR OF 5.0 TO VALUES OBTAINED FROM TESTING.

3. EMBEDMENT DEPTH IS THE MINIMUM SCREEN TUBE LENGTH MEASURED FROM THE OUTSIDE FACE OF THE MASONRY UNIT.

4. FOR ANCHOR INSTALLATIONS IN THE FACE SHELL OR JOINT SHEAR LOADS MAY BE APPLIED IN ANY DIRECTION EXCEPT UPWARD VERTICALLY. IF A MINIMUM OF TWO FULL COURSES ARE AVAILABLE ABOVE THE ANCHOR LOCATION SHEAR LOADS MAY BE APPLIED IN ANY DIRECTION.

5. ALLOWABLE LOAD VALUES MUST BE ADJUSTED FOR INCREASED BASE MATERIAL TEMPERATURES IN ACCORDANCE WITH FIGURE 1.



INSTALLATION IN FACE SHELL
(HOLLOW MASONRY)

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Thornton-Tomasetti Group
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 7319
Website: www.ThorTGroup.com

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