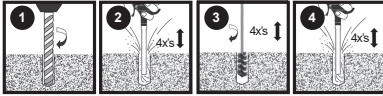


ULTRABOND® ACRYL-8CC Adhesive Anchor Installation Instructions

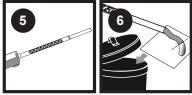
Installation Instructions

Drilling and Cleaning - Hammer Drilled Holes



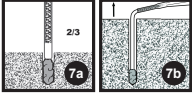
1. Drill hole to specified diameter and depth while taking care to avoid inhalation of dust during the drilling and cleaning process.
2. Remove standing water, blow out hole for 4 seconds/cycles.
3. Brush for 4 cycles (ensure wire brush contacts walls of drilled hole-replace if worn) - use brush extension if required.
4. Blow out hole for 4 seconds/cycles.

Dispensing Preparation

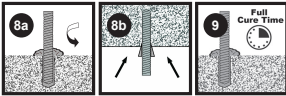


5. Remove cap, place cartridge into dispensing tool - DO NOT USE EXPIRED PRODUCT! Screw on only appropriate, non-modified ATC mixing nozzle.
6. Dispense and waste enough material to ensure uniform gray color before injecting into hole - NEVER RE-USE NOZZLES and DO NOT ATTEMPT TO FORCE ADHESIVE OUT OF A HARDENED MIXING NOZZLE- If needed, use a new nozzle and repeat steps 5 and 6.

Installation and Curing



- 7a. Fill hole 2/3 full with mixed adhesive starting at the bottom and slowly withdraw as hole fills.
- 7b. Piston plugs must be used with the extension tubing attached to the nozzle for horizontal and overhead installations with anchor sizes 5/8" to 1 1/4" diameter and rebar sizes of #5 to #10. See the appropriate TDS table or opposite side of this instruction card for piston plug sizes.



- 8a. Fully insert clean threaded rod or rebar with slow turning motion to bottom of hole - note working time and ensure excess adhesive is visible around anchor after installation.
- 8b. For overhead installations, horizontal and inclined, wedges should be used to support the anchor while adhesive is curing.
9. Do not disturb, torque or apply load until full cure time has passed. Proper hole cleaning, cartridge preparation and installation is critical in order to achieve published anchor performance.

Reference Commentary

Drilling and Cleaning - Hammer Drilled Holes

Read and follow manufacturer's operations manual for the selected rotary drill.

R1. Standard carbide drill bit should conform to ANSI B212.15. Refer to the installation tables on the opposite side of this instruction card for ULTRABOND ACRYL-8CC for applicable hole diameters and embedment depth ranges. **CAUTION:** Always wear appropriate personal protection equipment (PPE) for eyes, ears and skin to help avoid inhalation of dust during the drilling and cleaning process. Refer to the Safety Data Sheet (SDS) for details prior to proceeding.

R2. **BLOW (4X) – BRUSH (4X) – BLOW (4X).** Ensure that the compressed air is oil free. The compressed air wand should be inserted to the bottom of the hole, have a minimum pressure of 90 psi (6 bar) and be moved in an up/down motion to remove debris.

R3. Refer to the installation tables on the opposite side of this instruction card for ULTRABOND ACRYL-8CC for wire brush selection. **CAUTION:** The brush should be clean and contact the walls of the hole. If it does not, the brush is either too worn or small and should be replaced with a new brush of the correct diameter. The wire brush diameter must be checked periodically during use.

R4. After final blow step is completed, visually inspect the hole to confirm it is clean and free of dust, debris, ice, grease, oil or other foreign material. **NOTE:** If installation will be delayed for any reason, cover cleaned holes to prevent contamination.

Dispensing Preparation

R5. Review Safety Data Sheet (SDS) before use. Review working and cure times on the opposite side of this instruction card. Consideration should be given to the reduced gel (working) time of the adhesive in warm temperatures. For permitted range of base material see the Cure Schedule on the opposite side of this instruction card. Check the expiration date on the cartridge to ensure it is not expired. Cartridge temperature must be between 70 °F - 75 °F (21 °C - 24 °C) for installations between 14 °F and 23 °F (-10 °C and - 5 °C).

Always use a new mixing nozzle with new cartridges of adhesive and also for all work interruptions exceeding the published gel (working) time of the adhesive. Shelf life of ULTRABOND ACRYL-8CC is 18 months when stored at temperatures between 41 °F (5 °C) and 77 °F (25 °C). **Optional:** Before attaching mixing nozzle, balance the cartridge by dispensing a small amount of material until both components are flowing evenly. For a cleaner environment, hand mix the two components and let cure prior to disposal in accordance with local regulations.

R6. Test bead of mixed adhesive must be uniform in color and free of streaks, as adhesive must be properly mixed in order to perform as published. Dispose of the test bead according to federal, state and local regulations. **CAUTION:** When changing cartridges, never re-use nozzles and do not attempt to force adhesive out of a hardened mixing nozzle. Leave the mixing nozzle attached to the cartridge upon completion of work.

Installation and Curing

NOTE: Building Code Requirements for Structural Concrete (ACI 318-14 and later) requires the installer to be certified where adhesive anchors are to be installed in horizontal to vertically inclined (overhead) installations. The engineering drawings must be followed. For all applications not covered by this document, or for all installation questions, please contact Adhesives Technology Corp.

R7a. Be careful not to withdraw the mixing nozzle too quickly as this may trap air in the adhesive. Use an extension tube as needed.

R7b. Refer to the installation tables on the opposite side of this instruction card for ULTRABOND ACRYL-8CC for piston plug selection. Use piston plugs for overhead and vertically inclined installations, all installations with drill hole depth > 10" (250 mm), with anchor rod 5/8" to 1-1/4" (M16 to M30) diameter and rebar sizes #5 to #10 (Ø14 to Ø32). Insert piston plug to the back of the drilled hole and inject as stated in step 7a. During installation the piston plug will be naturally extruded from the drilled hole by the adhesive pressure. **CAUTION:** In addition to the installer being certified, do not install adhesive anchors overhead or vertically inclined without installation hardware supplied by ATC.

R8a. Prior to inserting the threaded rod or rebar into the hole, make sure it is straight, clean and free of oil/dirt and that the necessary embedment depth is marked on the anchor element. Insert the anchor elements into the hole while turning 1 - 2 rotations prior to the anchor reaching the bottom of the hole. Excess adhesive should be visible on all sides of the fully installed rod or rebar. Reinforcing bars must not be bent after installation except as set forth in ACI 318-14 Section 26.6.3.1 (b) or ACI 318-11 Section 7.3.2, as applicable, with the additional condition that the bars must be bent cold, and heating of reinforcing bars to facilitate field bending is not permitted. **CAUTION:** Use extra care with deep embedment or high temperature installations to ensure that the working time has not elapsed prior to the anchor being fully installed. Adjustments to the anchor alignment may only be performed during the published working time for a given temperature.

R8b. Ensure the anchor is fully seated at the bottom of the hole and that some adhesive has flowed from the hole and all around the top of the anchor. If not, the installation must be repeated. Take appropriate steps to protect the exposed threads of the anchor element from uncured adhesive until after the full cure time has elapsed.

R9. The amount of time needed to reach full cure is base material dependent. Refer to the chart on the opposite side of this instruction card for appropriate full cure time for a given temperature. Refer to the installation tables for ULTRABOND ACRYL-8CC to ensure proper torque is used. Take care not to exceed the maximum torque for the selected anchor. After full cure time has passed, a fixture can be installed to the anchor and tightened up to the maximum torque.

ULTRABOND® ACRYL-8CC Adhesive Anchor Installation Instructions

INSTALLATION PARAMETERS FOR THREADED ROD AND REBAR

Characteristic	Symbol	Units	Threaded Rod Diameter (inch)								
			3/8	1/2	5/8	3/4	7/8	1	1 1/4	N/A	
			Rebar Size								
			#3	#4	#5	#6	#7	#8	#9	#10	
Threaded Rod	Nominal Anchor Diameter	d	in.	0.375	0.500	0.625	0.750	0.875	1.000	1.250	N/A
	Drill Size	d_o	in.	7/16	9/16	3/4	7/8	1	1 1/8	1 3/8	
	Brush Part #	----	----	BA716	BA916	BA34	BA78	BA100	BA118	BA138	
	Piston Plug Part #	----	----	----	----	PA34	PA78	PA100	PA118	PA138	
	Piston Plug Color	----	----	----	----	Clear					
	Maximum Tightening Torque	A36/A307 Carbon Steel A193 B7 Carbon Steel or F593 SS	$T_{inst,max}$	Ft-lb (N-m)	10 (14) 16 (22)	25 (34) 33 (45)	50 (68) 60 (81)	90 (122) 105 (142)	125 (170) 125 (170)	165 (224) 165 (224)	
Rebar	Nominal Bar Diameter	d	in.	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250
	Drill Size	d_o	in.	7/16	5/8	3/4	7/8	1	1 1/8	1 3/8	1 1/2
	Brush Part #	----	----	BA716	BA58	BA34	BA78	BA100	BA118	BA138	BA112
	Piston Plug Part #	----	----	----	----	PA34	PA78	PA100	PA118	PA138	PA112
	Piston Plug Color	----	----	----	----	Clear					

CONCRETE BREAKOUT DESIGN INFORMATION FOR THREADED ROD AND REBAR

Design Information	Symbol	Units	Threaded Rod Diameter (inch)							
			3/8	1/2	5/8	3/4	7/8	1	N/A	1 1/4
			Rebar Size							
			#3	#4	#5	#6	#7	#8	#9	#10
Minimum Embedment Depth	$h_{ef,min}$	in. (mm)	2 3/8 (60)	2 3/4 (70)	3 1/8 (79)	3 1/2 (89)	3 1/2 (89)	4 (102)	4 1/2 (114)	5 (127)
Maximum Embedment Depth	$h_{ef,max}$	in. (mm)	4 1/2 (114)	6 (152)	7 1/2 (191)	9 (229)	10 1/2 (267)	12 (305)	13 1/2 (343)	15 (381)
Minimum Spacing Distance	s_{min}	in. (mm)	1 7/8 (48)	2 1/2 (64)	3 1/8 (79)	3 3/4 (95)	4 3/8 (111)	5 (127)	5 5/8 (143)	6 1/4 (159)
Minimum Edge Distance	c_{min}	in. (mm)	1 7/8 (48)	2 1/2 (64)	3 1/8 (79)	3 3/4 (95)	4 3/8 (111)	5 (127)	5 5/8 (143)	6 1/4 (159)
Minimum Concrete Thickness	h_{min}	in. (mm)	$h_{ef} + 1.25$, [≥ 3.937] $(h_{ef} + 30)$, [≥ 100]			$h_{ef} + 2d_o$ where d_o is the hole diameter				

For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N, 1 psi = 0.06894 MPa. For pound-inch units: 1 mm = 0.03937 inches, 1 N = 0.2248 lbf, 1 MPa = 145.0 psi.

CURE SCHEDULE^{1,2,3}

Concrete Temperature °F (°C)	Working Time	Full Cure Time
14 (-10)	90 min	24 hr
23 (-5)	90 min	14 hr
32 (0)	45 min	7 hr
41 (5)	25 min	2 hr
50 (10)	15 min	90 min
70 (21)	6 min	45 min
86 (30)	4 min	25 min
95 (35)	2 min	20 min
104 (40)	1.5 min	15 min

¹For installations between 14 °F and 23 °F (-10 °C and -5 °C) the cartridge temperature must be conditioned between 70 °F and 75 °F (21 °C and 24 °C).

²Store adhesive in dry cool location free from sun and rain.

³Storage temperature is 41 °F to 77 °F (5 °C to 25 °C).

ADHESIVE DISPENSING TOOLS AND MIXING NOZZLES¹

Package Size	9.5 fl. oz. (280 ml) Cartridge	28 fl. oz. (825 ml) Cartridge
Part #	A10-ACRYL8CC	A28-ACRYL8CC
Mixing Nozzle	T10-8CC	T28-8CC
Manual Dispensing Tool ²	TM10	TM28HD
Pneumatic Dispensing Tool	N/A	TA28
Case Qty.	12	8
Pallet Qty.	900	240
Pallet Weight (lbs.)	1,364	921
SDS Brush Adaptor	BA-SDS	
Brush Extension	BA-EXT	
Nozzle Extension Tubing	T-8CCEXTPK	
Retention Wedge	WEDGE	

¹Each cartridge is packaged with one mixing nozzle.

²For applications NOT requiring code approval, a TM9 manual dispensing tool may be substituted or a TM28HD may be used.