

## 1. Product Name

**Ultrabond 1** Epoxy Anchoring Gel

## 2. Manufacturer

Adhesives Technology Corp.  
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## 3. Product Description

### GENERAL DESCRIPTION

**Ultrabond 1** Epoxy Anchoring Gel is a two component (1:1 ratio), 100% solids, high modulus, structural epoxy gel. It is a solvent free, no odor, high strength, moisture insensitive, non-sag epoxy system. **Ultrabond 1** has exceptional strength, maximum field reliability, along with a high heat deflection temperature of 134 degree's Fahrenheit which provides engineers and contractors with a choice for specifying and setting adhesive anchors in elevated temperature environments. In addition, **Ultrabond 1** has a long working time (20 minutes at 75°F.), while providing an anchor that can be loaded in as little as 4 hours.

| Quick Selection Guide |               |
|-----------------------|---------------|
| Tension Load (1/2")   | 22,328 lbs. * |
| Working Time (75°)    | 20 minutes    |
| Cure Time (75°)       | 4 hours       |
| Temperature Range     | 40°F - 115°F  |

1/2" threaded rod at \*9D in 2000 psi concrete.

\*9D is the embedment depth of the anchor (9 x 1/2"); In this instance 1/2" threaded rod embedded 4-1/2" in 2,000 psi concrete.

### BASIC USE

**Ultrabond 1** Epoxy Anchoring Gel is formulated for anchoring threaded rod, bolts, rebar dowels and smooth dowels into concrete, grout filled block, and unreinforced masonry.

**Ultrabond 1** has been tested in accordance with AC58 and is acceptable for long term tensile loads but is NOT recommended for overhead applications. It may also be used for short term tensile load anchors, which includes wind and seismic forces.

Typical applications include:

- Seismic anchoring and bracing
- Grouting dowel bars and tie bars for full-depth concrete pavement repairs
- Pick proof sealant – windows, doors, locks, etc. (e.g. correctional facilities)
- Capping paste for crack-injection

### COLOR

"A" Component (Resin): White "B" Component (Hardener): Black

SHELF LIFE: 28 Months STORAGE: 55-80° F

APPLICATION: Condition cartridge to at least 65° F prior to use.

### SIZE/PACKAGING

Cartridge Sizes: **Ultrabond 1** is available in:

- 6 oz. cartridges; part number A6-1
- 9 oz cartridges; part number A9-1
- 22 oz. cartridges; part number A22-1
- 53 oz. cartridges; part number A53-1

The resin and hardener are uniformly dispensed from a dual cartridge system and mixed simultaneously through a mixing nozzle, providing contractors with a self mix delivery system.

Bulk Sizes: **Ultrabond 1** is also available in bulk sizes, which include:

- 1 gallon kit (102 fl. oz.); part number BUG-1
- 2 gallon kit; part number; B2G-1
- 10 gallon kit; part number; B10G-1
- 100 gallon kit; part number; B100G-1

## 4. Technical Data

### APPLICABLE STANDARDS

American Society for Testing Materials (ASTM)

Meets ASTM C881, Type I, II, IV & V, Grade 3, Class C

| Independent ASTM C881-99 Technical Data |       |                |
|---|-------|----------------|
| Properties                              | ASTM  | Results        |
| Compressive Yield Strength - psi        | D695  | 10,990 @ 65° F |
| Compressive Yield Strength – psi        | D695  | 10,160 @ 35° F |
| Compressive Modulus - psi               | D695  | 214,180        |
| Tensile Strength – psi (7 day)          | D638  | 6,790          |
| Elongation - %                          | D638  | 1.9            |
| Bond Strength – psi (2 day)             | C882  | 1,100          |
| Bond Strength – psi (14 day)            | C882  | 1,640          |
| Consistency                             | C881  | Non-Sag Gel    |
| Heat Deflection Temperature - °F        | D648  | 134° F         |
| Water Absorption - %                    | D570  | 0.40 (24 hrs)  |
| Linear Coefficient of Shrinkage         | D2566 | 0.003          |

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## Ordering Information

| Package Size              | 6 oz    | 9 oz   | 22 oz    | 53 oz    | BUG   | B2G     | B10G    | B100G   |
|---------------------------|---------|--------|----------|----------|-------|---------|---------|---------|
| Part #:                   | A6-1    | A9-1   | A22-1    | A53-1    | BUG-1 | B2G-1   | B10GM-1 | B100G-1 |
| Manual Dispensing Tool    | TM6     | TM9HD  | TM22HD   | N/A      | N/A   | N/A     | N/A     | N/A     |
| Pneumatic Dispensing Tool | N/A     | N/A    | TA22HD-N | TA53HD-N | N/A   | *Pump   | *Pump   | *Pump   |
| Case Qty                  | 20      | 10     | 12       | 6        | 1     | 1       | 1       | 1       |
| Pallet Qty                | 1400    | 720    | 768      | 216      | 75    | 75      | 24      | 2       |
| Recommended Mixer Nozzle  | T3812MN | T12HGR | T3438C   | T3412CT  | N/A   | T3412CT | T3412CT | T3412CT |

\* Contact Adhesives Technology for recommended pump manufacturers

For large projects with anchor holes greater than 1-inch in diameter our T1C Hi-Flow mixer nozzle may be used.

### Another First From ATC – The new EZ-MIX System

Adhesives Technology Corp. was the first to introduce a single cartridge epoxy system to the marketplace back in 1988. The product (later named the EZ10) took the country by storm and was instrumental in inducing many eager distributors in the quickly expanding adhesive anchoring market.

In the Spring of 2003 we introduced the industry's first single cartridge epoxy system that requires NO PUMPING. This single cartridge epoxy system can be used in any standard caulking gun and, unlike its predecessor (the EZ10), requires no pumping to mix the product. The epoxy mixes in the same manner as with other systems, through a static mixing tube. The product can also be resealed which means that any remaining material can be saved for later use.

The United States Army is using our high strength Ultrabond 1 epoxy to anchor 18' x 36' tents to concrete pads. The depth of the hole is usually 8 inches. The size of the rebar stakes are 10 inches long and can be either 3/8" or 5/8".

#### A Related Lesson On In-Service Temperature Ratings:

Ultrabond epoxies have been specifically formulated to achieve exceptionally high in-service performance for high temperature applications. Ultrabond provides the highest values in the industry for tensile tests in addition to providing users with the best in-service temperature rating. This rating relates to how epoxy performs at higher temperatures; epoxy tension values generally decline as the temperature increases. Previously published ICC reports established that Ultrabond 1 at 150°F (substrate temperature) outperforms almost every other epoxy in the industry even at their most conservative 78°F values. At 150°F, we are the clear winner. It's safe to say that the U.S. Army had chosen the absolute best product available to be used in the blistering hot desert in Iraq.



## DOT Approvals

Ultrabond 1 is approved for use on the following DOT's

|   |  |
|---|--|
| <b>Colorado:</b> Adhesive Anchoring Epoxy               | <b>Connecticut:</b> Chemical Anchors; Form 816, M.03.01-15                     |
| <b>Florida:</b> Specification 937HSHV                   | <b>Indiana:</b> Chemical Anchor Systems, specification Reference 901.05        |
| <b>Iowa:</b> Mtls IM491.11 – B & IM491.11 – C           | <b>Maine:</b> Cartridge and Bulk Anchoring Materials                           |
| <b>Maryland:</b> No list – products approved job by job | <b>Michigan:</b> Specification 603.03B2 & 712.03J                              |
| <b>Nevada:</b> Specification 728.03.02                  | <b>New Jersey:</b> Epoxy Grout   |
| <b>North Carolina:</b> Epoxies, Type 3A                 | <b>Oklahoma:</b> Portland Cement Pavement Repair & Load Bearing Applications   |
| <b>Oregon:</b> Spec #: 00535.10 High Strength Anchor    | <b>Tennessee:</b> OPL List 8 Epoxy Resin System & OPL List 22, Section C Epoxy |
| <b>Virginia:</b> List 29 – Fastening Systems            |  |

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### REDUCTION FACTOR FOR EDGE DISTANCES FOR THREADED ROD

| Embed-<br>ment<br>Depth | Edge Distance Factor, Tension Only |                     |          | Edge Distance Factor, Shear Only |                     |          | Spacing Factor, Tension Only |           |       |
|-------------------------|------------------------------------|---------------------|----------|----------------------------------|---------------------|----------|------------------------------|-----------|-------|
|                         | $C_{CR}$                           | $C_{MIN}$           | $f_{RN}$ | $C_{CR}$                         | $C_{MIN}$           | $f_{RV}$ | $S_{CR}$                     | $S_{MIN}$ | $f_A$ |
| $9 \times D$            | $1.5 \times h_{ef}$                | $0.5 \times h_{ef}$ | 0.54     | $1.5 \times h_{ef}$              | $0.5 \times h_{ef}$ | 0.25     | $1.75 \times h_{ef}$         |           |       |

D = Diameter of the rod

S = The measure between anchors from center line to center line

C = The measure between the anchor center line and the free edge

$S_{MIN}$  = The least spacing between anchors for which recognition is desired

$C_{MIN}$  = The least edge distance for recognition is desired

$S_{CR}$  = The least spacing between where no reduction would be applied

$C_{CR}$  = The least edge distance where no reduction would be applied

$f_{RN}$ ,  $f_{RV}$  = Load reduction factors to be applied when:  $C_{MIN} \leq C < C_{CR}$

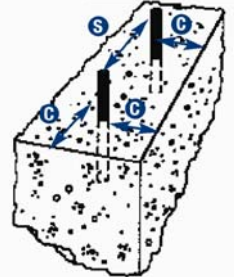
$h_{ef}$  = The anchor embedment depth

$f_A$  = Load reduction factors to be applied when:  $S_{MIN} \leq S < S_{CR}$

Ultrabond 1 has been tested in accordance to AC58 acceptance criteria for adhesive anchors in concrete and masonry elements and is recognized for the following uses:

- Static Loads
- Critical and Minimum Edge and Spacing Distances
- Long Term Creep at Elevated Temperature
- Static Loading at Elevated Temperature
- Damp Holes
- Freeze Thaw Conditions
- Seismic / Wind Loading

C = Edge Distance  
S = Spacing Distance



### TENSION LOADS FOR THREADED RODS – Safety Factor “Allowable” equals 25% of Ultimate Load (32% for steel)

| Threaded<br>Rod<br>Diameter<br>(in.) | Based on Bond Strength, 2000 psi Normal Weight Concrete |                                     |                                    |                                     | Allowable, Based on Steel Strength |                                |                                 |                      |
|--------------------------------------|---|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|--------------------------------|---------------------------------|----------------------|
|                                      | Hole<br>Diameter<br>(in.)                               | Minimum<br>Embedment<br>Depth (in.) | Ultimate<br>Tension Load<br>(lbs.) | Allowable<br>Tension Load<br>(lbs.) | ASTM A36<br>(lbs.)                 | ASTM A307<br>GRADE C<br>(lbs.) | ASTM A193<br>GRADE B7<br>(lbs.) | 304/316 SS<br>(lbs.) |
| 3/8                                  | 7/16  | 3 3/8                               | 9,248                              | 2,312                               | 2,115                              | 2,185                          | 4,555                           | 3,645                |
| 1/2                                  | 9/16  | 4 1/2                               | 22,328                             | 5,582                               | 3,775                              | 3,885                          | 8,100                           | 6,480                |
| 5/8                                  | 3/4   | 5 5/8                               | 29,950                             | 7,488                               | 5,870                              | 6,075                          | 12,655                          | 10,125               |
| 3/4                                  | 7/8   | 6 3/4                               | 39,278                             | 9,820                               | 8,455                              | 8,750                          | 18,225                          | 12,390               |
| 7/8                                  | 1   | 7 7/8                               | 53,862                             | 13,466                              | 11,510                             | 11,905                         | 24,805                          | 16,865               |
| 1                                    | 1 1/8   | 9                                   | 62,697                             | 15,674                              | 15,030                             | 15,550                         | 32,400                          | 22,030               |
| 1 1/4                                | 1 3/8   | 11 1/4                              | 88,594                             | 22,149                              | 23,490                             | 24,295                         | 50,620                          | 34,425               |

### SHEAR LOADS FOR THREADED RODS – Safety Factor “Allowable” equals 25% of Ultimate Load (32% for steel)

| Threaded<br>Rod<br>Diameter<br>(in.) | Based on Bond Strength, 2000 psi Normal Weight Concrete |                                     |                                  |                                   | Allowable, Based on Steel Strength |                                |                                 |                      |
|--------------------------------------|---|-------------------------------------|----------------------------------|-----------------------------------|------------------------------------|--------------------------------|---------------------------------|----------------------|
|                                      | Hole<br>Diameter<br>(in.)                               | Minimum<br>Embedment<br>Depth (in.) | Ultimate<br>Shear Load<br>(lbs.) | Allowable<br>Shear Load<br>(lbs.) | ASTM A36<br>(lbs.)                 | ASTM A307<br>GRADE C<br>(lbs.) | ASTM A193<br>GRADE B7<br>(lbs.) | 304/316 SS<br>(lbs.) |
| 3/8                                  | 7/16  | 3 3/8                               | 7,189                            | 1,797                             | 1,090                              | 1,125                          | 2,345                           | 1,870                |
| 1/2                                  | 9/16  | 4 1/2                               | 12,863                           | 3,216                             | 1,935                              | 2,000                          | 4,170                           | 3,330                |
| 5/8                                  | 3/4   | 5 5/8                               | 22,855                           | 5,714                             | 3,025                              | 3,130                          | 6,520                           | 5,210                |
| 3/4                                  | 7/8   | 6 3/4                               | 32,304                           | 8,076                             | 4,355                              | 4,505                          | 9,390                           | 6,390                |
| 7/8                                  | 1   | 7 7/8                               | 36,214                           | 9,054                             | 5,930                              | 6,135                          | 12,780                          | 8,680                |
| 1                                    | 1 1/8   | 9                                   | 52,151                           | 13,038                            | 7,745                              | 8,010                          | 16,690                          | 11,340               |
| 1 1/4                                | 1 3/8   | 11 1/4                              | 69,011                           | 17,253                            | 12,100                             | 12,515                         | 26,075                          | 17,730               |

### TENSION AND SHEAR LOADS FOR REBAR – Safety Factor “Allowable” equals 25% of Ultimate Load (32% for steel)

| Rebar<br>Size | Based on Bond Strength, 2000 psi Normal Weight Concrete |                                     |                                    |                                     |                                  |                                   | Allowable, Based on Steel<br>Strength, Grade 60 |            |
|---------------|---|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|---|------------|
|               | Hole<br>Diameter<br>(in.)                               | Minimum<br>Embedment<br>Depth (in.) | Ultimate<br>Tension Load<br>(lbs.) | Allowable<br>Tension Load<br>(lbs.) | Ultimate<br>Shear Load<br>(lbs.) | Allowable<br>Shear Load<br>(lbs.) | Tension Load                                    | Shear Load |
|               |   |                                     |                                    |                                     |                                  |                                   | (lbs.)  | (lbs.)     |
| #4            | 5/8   | 4 1/2                               | 23,203                             | 5,801                               | 11,242                           | 2,811                             | 4,710   | 3,060      |
| #5            | 3/4   | 5 5/8                               | 32,326                             | 8,082                               | 21,032                           | 5,258                             | 7,365   | 4,740      |
| #6            | 7/8   | 6 3/4                               | 44,481                             | 11,120                              | 32,294                           | 8,074                             | 10,605  | 6,730      |
| #7*           | 1   | 7 7/8                               | 49,647                             | 12,412                              | 35,438                           | 8,860                             | 14,430  | 9,180      |
| #8            | 1 1/8   | 9                                   | 54,812                             | 13,703                              | 38,582                           | 9,646                             | 18,850  | 12,085     |

\*Values were interpolated from #6 and #8 rebar testing

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| REDUCTION FACTORS<br>TENSILE EDGE DISTANCE – 9D EMBEDMENTS |                  |        |        |        |        |        |        |
|--|------------------|--------|--------|--------|--------|--------|--------|
| Anchor Diameter  | 3/8"             | 1/2"   | 5/8"   | 3/4"   | 7/8"   | 1"     | 1 1/4" |
| Ultimate Load  | 9,248            | 22,328 | 29,948 | 39,276 | 53,860 | 62,696 | 88,592 |
| Edge Distance  | Multiplier Table |        |        |        |        |        |        |
| 1 3/4"   | 0.55             |        |        |        |        |        |        |
| 2"   | 0.58             |        |        |        |        |        |        |
| 2 1/4"   | 0.62             | 0.54   |        |        |        |        |        |
| 2 1/2"   | 0.65             | 0.57   |        |        |        |        |        |
| 2 3/4"   | 0.69             | 0.59   |        |        |        |        |        |
| 3"   | 0.72             | 0.62   | 0.56   |        |        |        |        |
| 3 1/4"   | 0.76             | 0.64   | 0.58   |        |        |        |        |
| 3 1/2"   | 0.79             | 0.67   | 0.60   | 0.55   |        |        |        |
| 3 3/4"   | 0.83             | 0.69   | 0.62   | 0.57   |        |        |        |
| 4"   | 0.86             | 0.72   | 0.64   | 0.58   | 0.54   |        |        |
| 4 1/4"   | 0.90             | 0.74   | 0.66   | 0.60   | 0.56   |        |        |
| 4 1/2"   | 0.93             | 0.77   | 0.68   | 0.62   | 0.57   | 0.54   |        |
| 4 3/4"   | 0.97             | 0.80   | 0.70   | 0.63   | 0.59   | 0.55   |        |
| 5"   | 1.00             | 0.82   | 0.72   | 0.65   | 0.60   | 0.57   |        |
| 5 1/4"   |                  | 0.85   | 0.74   | 0.67   | 0.62   | 0.58   |        |
| 5 1/2"   |                  | 0.87   | 0.76   | 0.68   | 0.63   | 0.59   |        |
| 5 3/4"   |                  | 0.90   | 0.78   | 0.70   | 0.65   | 0.60   | 0.55   |
| 6"   |                  | 0.92   | 0.80   | 0.72   | 0.66   | 0.62   | 0.56   |
| 6 1/4"   |                  | 0.95   | 0.82   | 0.73   | 0.67   | 0.63   | 0.57   |
| 6 1/2"   |                  | 0.97   | 0.84   | 0.75   | 0.69   | 0.64   | 0.58   |
| 6 3/4"   |                  | 1.00   | 0.86   | 0.77   | 0.70   | 0.65   | 0.59   |
| 7"   |                  |        | 0.88   | 0.78   | 0.72   | 0.67   | 0.60   |
| 7 1/4"   |                  |        | 0.90   | 0.80   | 0.73   | 0.68   | 0.61   |
| 7 1/2"   |                  |        | 0.92   | 0.82   | 0.75   | 0.69   | 0.62   |
| 7 3/4"   |                  |        | 0.94   | 0.84   | 0.76   | 0.70   | 0.63   |
| 8"   |                  |        | 0.96   | 0.85   | 0.78   | 0.72   | 0.64   |
| 8 1/4"   |                  |        | 0.98   | 0.87   | 0.79   | 0.73   | 0.65   |
| 8 1/2"   |                  |        | 1.00   | 0.89   | 0.80   | 0.74   | 0.66   |
| 8 3/4"   |                  |        |        | 0.90   | 0.82   | 0.76   | 0.67   |
| 9"   |                  |        |        | 0.92   | 0.83   | 0.77   | 0.68   |
| 9 1/4"   |                  |        |        | 0.94   | 0.85   | 0.78   | 0.69   |
| 9 1/2"   |                  |        |        | 0.95   | 0.86   | 0.79   | 0.70   |
| 9 3/4"   |                  |        |        | 0.97   | 0.88   | 0.81   | 0.71   |
| 10"  |                  |        |        | 1.00   | 0.89   | 0.82   | 0.72   |
| 10 1/2"  |                  |        |        |        | 0.92   | 0.84   | 0.74   |
| 11"  |                  |        |        |        | 0.95   | 0.87   | 0.76   |
| 11 1/2"  |                  |        |        |        | 0.98   | 0.90   | 0.78   |
| 12"  |                  |        |        |        | 1.00   | 0.92   | 0.80   |
| 12 1/2"  |                  |        |        |        |        | 0.95   | 0.82   |
| 13"  |                  |        |        |        |        | 0.97   | 0.84   |
| 13 1/2"  |                  |        |        |        |        | 1.00   | 0.86   |
| 14"  |                  |        |        |        |        |        | 0.88   |
| 14 1/2"  |                  |        |        |        |        |        | 0.90   |
| 15"  |                  |        |        |        |        |        | 0.92   |
| 15 1/2"  |                  |        |        |        |        |        | 0.94   |
| 16"  |                  |        |        |        |        |        | 0.96   |
| 16 1/2"  |                  |        |        |        |        |        | 0.98   |
| 17"  |                  |        |        |        |        |        | 1.00   |

| REDUCTION FACTORS<br>SHEAR EDGE DISTANCE – 9D EMBEDMENTS |                  |        |        |        |        |        |        |
|--|------------------|--------|--------|--------|--------|--------|--------|
| Anchor Diameter  | 3/8"             | 1/2"   | 5/8"   | 3/4"   | 7/8"   | 1"     | 1 1/4" |
| Ultimate Load  | 9,248            | 22,328 | 29,948 | 39,276 | 53,860 | 62,696 | 88,592 |
| Edge Distance  | Multiplier Table |        |        |        |        |        |        |
| 1 3/4"   | .25              |        |        |        |        |        |        |
| 2"   | 0.31             |        |        |        |        |        |        |
| 2 1/4"   | 0.37             | .25    |        |        |        |        |        |
| 2 1/2"   | 0.42             | 0.29   |        |        |        |        |        |
| 2 3/4"   | 0.48             | 0.33   |        |        |        |        |        |
| 3"   | 0.54             | 0.38   | 0.25   |        |        |        |        |
| 3 1/4"   | 0.60             | 0.42   | 0.28   |        |        |        |        |
| 3 1/2"   | 0.65             | 0.46   | 0.32   | 0.25   |        |        |        |
| 3 3/4"   | 0.71             | 0.50   | 0.35   | 0.28   |        |        |        |
| 4"   | 0.77             | 0.54   | 0.39   | 0.31   | 0.25   |        |        |
| 4 1/4"   | 0.83             | 0.58   | 0.42   | 0.34   | 0.28   |        |        |
| 4 1/2"   | 0.88             | 0.63   | 0.45   | 0.37   | 0.30   | 0.25   |        |
| 4 3/4"   | 0.94             | 0.67   | 0.49   | 0.39   | 0.33   | 0.28   |        |
| 5"   | 1                | 0.71   | 0.52   | 0.42   | 0.36   | 0.30   |        |
| 5 1/4"   |                  | 0.75   | 0.56   | 0.45   | 0.38   | 0.33   |        |
| 5 1/2"   |                  | 0.79   | 0.59   | 0.48   | 0.41   | 0.35   |        |
| 5 3/4"   |                  | 0.83   | 0.63   | 0.51   | 0.44   | 0.38   | 0.25   |
| 6"   |                  | 0.88   | 0.66   | 0.54   | 0.46   | 0.41   | 0.27   |
| 6 1/4"   |                  | 0.92   | 0.69   | 0.57   | 0.49   | 0.43   | 0.30   |
| 6 1/2"   |                  | 0.96   | 0.73   | 0.60   | 0.52   | 0.46   | 0.32   |
| 6 3/4"   |                  | 1.0    | 0.76   | 0.63   | 0.54   | 0.48   | 0.35   |
| 7"   |                  |        | 0.80   | 0.65   | 0.57   | 0.51   | 0.37   |
| 7 1/4"   |                  |        | 0.83   | 0.68   | 0.60   | 0.53   | 0.40   |
| 7 1/2"   |                  |        | 0.86   | 0.71   | 0.63   | 0.56   | 0.42   |
| 7 3/4"   |                  |        | 0.90   | 0.74   | 0.65   | 0.59   | 0.44   |
| 8"   |                  |        | 0.93   | 0.77   | 0.68   | 0.61   | 0.47   |
| 8 1/4"   |                  |        | 0.97   | 0.80   | 0.71   | 0.64   | 0.49   |
| 8 1/2"   |                  |        | 1.00   | 0.83   | 0.73   | 0.66   | 0.52   |
| 8 3/4"   |                  |        |        | 0.86   | 0.76   | 0.69   | 0.54   |
| 9"   |                  |        |        | 0.88   | 0.79   | 0.72   | 0.56   |
| 9 1/4"   |                  |        |        | 0.91   | 0.81   | 0.74   | 0.59   |
| 9 1/2"   |                  |        |        | 0.94   | 0.84   | 0.77   | 0.61   |
| 9 3/4"   |                  |        |        | 0.97   | 0.87   | 0.79   | 0.64   |
| 10"  |                  |        |        | 1.00   | 0.89   | 0.82   | 0.66   |
| 10 1/2"  |                  |        |        |        | 0.92   | 0.84   | 0.69   |
| 11"  |                  |        |        |        | 0.95   | 0.87   | 0.71   |
| 11 1/2"  |                  |        |        |        | 0.97   | 0.90   | 0.73   |
| 12"  |                  |        |        |        | 1.00   | 0.92   | 0.76   |
| 12 1/2"  |                  |        |        |        |        | 0.95   | 0.78   |
| 13"  |                  |        |        |        |        | 0.97   | 0.81   |
| 13 1/2"  |                  |        |        |        |        | 1.00   | 0.83   |
| 14"  |                  |        |        |        |        |        | 0.85   |
| 14 1/2"  |                  |        |        |        |        |        | 0.88   |
| 15"  |                  |        |        |        |        |        | 0.90   |
| 15 1/2"  |                  |        |        |        |        |        | 0.93   |
| 16"  |                  |        |        |        |        |        | 0.95   |
| 16 1/2"  |                  |        |        |        |        |        | 0.98   |
| 17"  |                  |        |        |        |        |        | 1.00   |

\*9D is the embedment depth of the anchor (9 x 1/2"); in this instance 1/2" threaded rod embedded 4-1/2".

| Temperature | Cure* Time | Final Cure* Time |
|-------------|------------|------------------|
| 95°F        | 3 Hrs.     | 20 Hrs.          |
| 80°F        | 4 Hrs.     | 24 Hrs.          |
| 65°F        | 8 Hrs.     | 42 Hrs.          |
| 50°F        | 16 Hrs.    | 56 Hrs.          |
| 35°F        | 24 Hrs.    | 72 Hrs.          |

The chart to the left indicates the temperature versus Bolt up times for Ultrabond 1.

\*Cure time is the amount of time required before applying allowable load (bolt-up time). Cure-time and final cure time is based on the lowest temperature experienced during the cure schedule. Therefore, if the lowest temperature experienced by the anchor is 50°F, it will take 56 hours to achieve full cure and 16 hours to until anchor can be bolted up.

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**Sample Specification** – Anchoring adhesive shall be a two component, 1:1 ratio, 100% solids epoxy system supplied in a two component side by side or single cartridge and dispensed through a static mixing nozzle supplied by the manufacturer. Epoxy must meet the requirements of ASTM C881 specification for Type I, II, IV and V, Grade 3, Class B, & C. Epoxy must have a minimum heat deflection temperature of 134°F (57°C), per ASTM D648 and maintain a minimum of 79.33% of the tension load at 150°F. Adhesive shall have a minimum ultimate tension load value of 22,328 lbs. when tested using 1/2" diameter threaded rod in a 9/16" diameter hole at a minimum embedment depth of 4-1/2" in 2,000 psi normal weight concrete. Testing must be in accordance with ASTM E488. Shelf life must be a minimum of 28 months. Adhesive shall be Ultrabond 1 manufactured by Adhesives Technology Corp., Pompano Beach, Florida.

## 5. Installation

Job site preparation and work flow – to achieve the desired results, carefully follow these procedures!

- Always be sure the holes are prepared in advance before starting a new cartridge. If at all possible, schedule dispensing to consume an entire cartridge at one time with no interruption of epoxy flow.
- Condition cartridge to at least 65° F prior to usage.

To achieve maximum flow and reduce fatigue, break off the nozzle to the largest diameter that will fit into the hole or screen. If the hole is 5/8" diameter or larger, snap off the smaller diameter section before using.



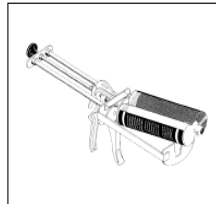
Most nozzles snap off to accommodate varying hole diameters and depths.

## Dual Cartridge Anchoring & Doweling – Hole Preparation and Cartridge Set up

**I.** Drill hole to proper diameter and depth. Blow out dust from the bottom of the hole.

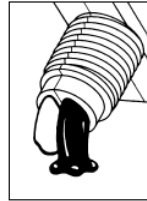


Brush the hole with a nylon brush. Blow out dust again. The hole should be clean of dust and debris.

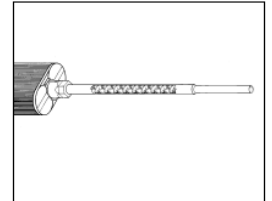


**II.** Insert cartridge into dispenser making sure it is properly positioned with shoulder of cartridge flush with top bracket of the dispenser.

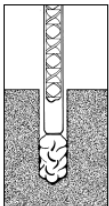
**III.** Remove plastic cap from the tip of the cartridge. Dispense a small amount of epoxy into a disposable container until you get an even flow of black and white material.



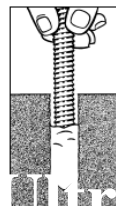
**IV.** Place nozzle onto cartridge and slide nut over nozzle and thread nut onto cartridge. No nut is necessary on mixers with built in nut. Make sure that the nozzle, nut and cartridge assembly is secure. Dispense enough epoxy into a disposable container until the color becomes a consistent gray with no streaks.



## Anchoring Into Concrete

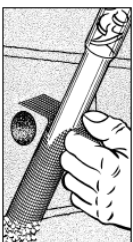


**V.** Dispense the material from the bottom of the hole. Fill approximately 1/2 – 5/8 of the hole depth while slowly withdrawing the nozzle. Fill completely full for holes totally submerged in water.

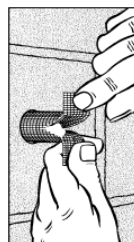


**VI.** Insert the threaded rod or rebar to the bottom of the hole while turning clockwise. The threaded rod or rebar should be free of dirt, grease, oil, or other foreign materials. Do not disturb or bolt-up until minimum bolt-up time has passed.

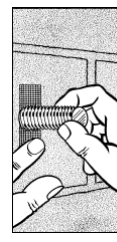
## Anchoring Into Hollow Block or Unreinforced Masonry (Repeat steps I through IV as shown above).



**V.** Insert the mixing nozzle into the bottom of the screen and completely fill while withdrawing the nozzle. Fill the screen completely all the way to the end to insure that the epoxy completely fills the screen from top to bottom when threaded rod is inserted.



**VI.** Insert the epoxy-filled screen into the hole.



**VII.** Insert the threaded rod or dowel to the bottom of the screen while turning clockwise. The threaded rod or rebar should be free of dirt, grease, oil or other foreign material. Do not disturb or bolt-up until minimum bolt-up time has passed.

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## BUILDING CODES

Installation of Ultrabond epoxies must comply with applicable local, state and national code requirements.

## SITE CONDITIONS

Material shall be delivered in original unopened containers and stored in a dry environment at a temperature between 55° and 80°F.

## PRECAUTIONS

- Wear safety glasses
- Avoid prolonged contact with skin.
- Keep out of reach of children
- Do not take internally
- If Ingested and conscious, give large quantities of water or milk. Do not induce vomiting. Call a physician
- Eye contact. Flush with water for at least 15 minutes. Call a physician

## 6. Availability and Cost

### AVAILABILITY

Ultrabond epoxy is available through select distributors who can provide you with all of your construction needs. Please contact Adhesives Technology Corp. at (800) 892-1880 for a distributor near you.

### COST

Cost information is available from your local distributor.

## 7. Warranty

All warranties of the product listed herein, in the corresponding ATC catalog, and in any other current

literature, expressed or implied, including warranties of merchantability and fitness for a particular purpose are specifically and expressly excluded, with the following exception: At its sole discretion, ATC will repair or replace any product which it considers to be defective in material or workmanship, excepting normal wear and tear within sixty (60) days from the date of purchase from ATC. ATC shall not be liable for any injury, loss or damage, direct, indirect, incidental or consequential or arising out of use of, misuse of, negligence, accident or inability to use any ATC product.

## 8. Technical Services

For technical support contact Adhesives Technology Corp. at (800) 892-1880.

## 9. Maintenance

None required.

## 10. Filing System

Additional product information and specifications are available either on line at [www.atc.ws](http://www.atc.ws) or contact Adhesives Technology at (800) 892-1880 to get copies mailed to you.

## PARTIAL LIST OF PROJECTS USING Ultrabond 1

**Ultrabond 1** has been used on thousands of high profile projects since the 1980's, including:

**Denver International Airport** – Runway & Taxi way expansion.

**Tampa Stadium** – pinning deck to concrete structure.

**MARTA Light rail project in Atlanta.**

**FL DOT (I-75)** - expansion project Ft Meyers to Tampa.

Actual user performance and data may differ due to variations of base material, installation procedures and personnel, weather conditions and other factors. Adhesives Technology Corp. reserves the right to change specifications or information printed in this Tech Data Sheet without notice or liability for these changes. Adhesives Technology Corp. will not be liable for any claim based on the use of data or other information printed in this Tech Data Sheet.



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