



## Specifications, Listings and Approvals

**Diameters:** 1/4" – 1"

**Material:** Carbon steel

**Finish:** Zinc plating ASTM B633, Type III, SC1

**Federal Specifications:**

- QQZ-325C, Type II, Class 3 (clear chromate added)
- GSA FFS-325, Group II, Type 4, Class 1

**Code Compliance:**

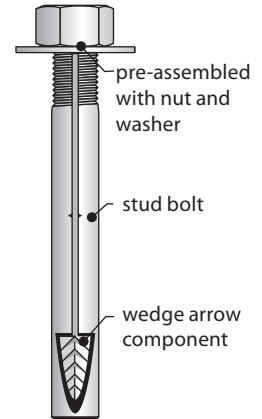
- Formerly ICC-ES Legacy Report #1821
- 1997 Uniform Building Code (UBC)
- 2000 International Building Code (IBC)
- 2000 International Residents Code
- Data Test in accordance with the ICC-ES criteria for Expansion Anchors in Concrete and Masonry Elements (ACOI) dated April 2002. Available upon request.
- State DOT: Please call Customer Service for specific approval information by state

## 60 years of proven performance

### Key Features and Benefits

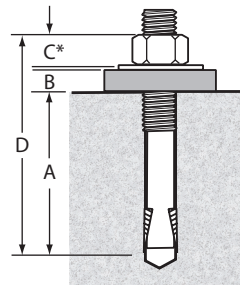
- Time-tested, proven reliability
  - An industry standard for over 60 years
- Fully assembled and ready to use
- Unparalleled job-site convenience
  - No fixture-moving required
- **Bolt Size is Hole Size®** eases installation
  - Allows precision placement of equipment through pre-drilled holes
- Exclusive **"positive wedge connections"**
  - Minimizes wedge loosening due to vibratory loads

**Code Compliance:**  
Formerly ICC-ES Legacy Report #1821



Expansion Anchors

## Length Selection



Minimum Embedment (A)  
 + Attached Material Thickness (B)  
 + Nut Height\* (C)  
 = Total Anchor Length (D)  
 \*Nut height equals anchor diameter.

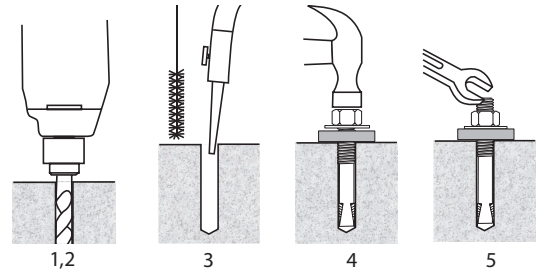
## Order Information

| Catalog Number | Anchor Size (in.) | Min. Embedment (in.) | Thread Length (in.) | Quantity Box /Carton |
|----------------|-------------------|----------------------|---------------------|----------------------|
| 1413           | 1/4 x 1-3/4       | 1                    | 1/2                 | 100/600              |
| 1423           | 1/4 x 2-3/4       | 1                    | 1/2                 | 100/600              |
| 1430           | 1/4 x 3           | 1                    | 1/2                 | 100/600              |
| 5620           | 5/16 x 2          | 1-1/4                | 5/8                 | 100/600              |
| 5630           | 5/16 x 3          | 1-1/4                | 5/8                 | 100/600              |
| 3820           | 3/8 x 2           | 1-1/2                | 3/4                 | 100/600              |
| 3823           | 3/8 x 2-3/4       | 1-1/2                | 3/4                 | 100/600              |
| 3832           | 3/8 x 3-1/2       | 1-1/2                | 3/4                 | 50/300               |
| 3850           | 3/8 x 5           | 1-1/2                | 3/4                 | 50/300               |
| 3860           | 3/8 x 6           | 1-1/2                | 3/4                 | 50/300               |
| 1223           | 1/2 x 2-3/4       | 2                    | 1                   | 50/300               |
| 1232           | 1/2 x 3-1/2       | 2                    | 1                   | 50/300               |
| 1250           | 1/2 x 5           | 2                    | 1                   | 25/150               |
| 1260           | 1/2 x 6           | 2                    | 1                   | 25/150               |
| 1270           | 1/2 x 7           | 2                    | 1                   | 25/150               |
| 5832           | 5/8 x 3-1/2       | 3                    | 1-1/4               | 25/150               |
| 5842           | 5/8 x 4-1/2       | 3                    | 1-1/4               | 25/150               |

Order information continued on following page

## Order Information, continued

| Catalog Number | Anchor Size (in.) | Min. Embedment (in.) | Thread Length (in.) | Quantity Box /Carton |
|----------------|-------------------|----------------------|---------------------|----------------------|
| 5850           | 5/8 x 5           | 3                    | 1-1/4               | 20/120               |
| 5860           | 5/8 x 6           | 3                    | 1-1/4               | 15/90                |
| 5870           | 5/8 x 7           | 3                    | 1-1/4               | 15/90                |
| 3440           | 3/4 x 4           | 3                    | 1-1/2               | 18/108               |
| 3450           | 3/4 x 5           | 3                    | 1-1/2               | 12/72                |
| 3460           | 3/4 x 6           | 3                    | 1-1/2               | 12/72                |
| 3470           | 3/4 x 7           | 3                    | 1-1/2               | 10/60                |
| 3482           | 3/4 x 8-1/2       | 3                    | 1-1/2               | 10/30                |
| 3410           | 3/4 x 10          | 3                    | 1-1/2               | 10/30                |
| 7880           | 7/8 x 8           | 4-1/2                | 1-3/4               | 10/30                |
| 7810           | 7/8 x 10          | 4-1/2                | 1-3/4               | 10/30                |
| 7812           | 7/8 x 12          | 4-1/2                | 1-3/4               | 5/15                 |
| 1080           | 1 x 8             | 5-1/2                | 2                   | 10/30                |
| 1010           | 1 x 10            | 5-1/2                | 2                   | 5/15                 |
| 1012           | 1 x 12            | 5-1/2                | 2                   | 5/15                 |



## Installation Instructions

1. Drill the hole perpendicular to the work surface with a solid carbide bit that meets ANSI B212.5 specifications. The drill bit diameter will be the same as the anchor diameter that you are installing. To assure full holding power, do not ream the hole or allow the drill to wobble.
2. Drill the hole one diameter deeper than the intended embedment of the anchor, but not closer than two diameters to the bottom (opposite) surface of the concrete.
3. Clean the hole using compressed air and a nylon brush. A clean hole is necessary for proper performance.
4. Insert anchor into hole until washer rests solidly against fixture.
5. Tighten 1-1/2 to 3 turns past hand tight position but to a maximum torque as listed in the table below.

**NOTE: Always wear safety glasses.** Follow drill manufacturer's instructions. Use only solid carbide-tipped drill bits meeting ANSI B212.15 diameter standards.

## Edge Distance & Spacing Requirements

| Embedment (E) in Anchor Diameters | Spacing | Edge Distance |
|-----------------------------------|---------|---------------|
| $E < 6d$ (shallow)                | 3.5E    | 1.75E         |
| $6d \leq E \leq 8d$ (standard)    | 2.00E   | 1.00E         |
| $8d < E$ (deep)                   | 1.50E   | 0.75E         |

## Recommended Edge Distance & Spacing

| Anchor Diameter (in.) | Embedment Depth | Edge Distance Requirements | Spacing Requirements |
|-----------------------|-----------------|----------------------------|----------------------|
| 1/4                   | 1-1/8           | 1-31/32                    | 3-15/16              |
|                       | 1-1/2           | 2-5/8                      | 5-1/4                |
| 5/16                  | 1-1/4           | 2-3/16                     | 4-3/8                |
|                       | 1-3/4           | 3-1/16                     | 6-1/8                |
| 3/8                   | 1-1/2           | 2-5/8                      | 5-1/4                |
|                       | 4               | 3                          | 6                    |
| 1/2                   | 2-1/4           | 3-15/16                    | 7-7/8                |
|                       | 5               | 3-3/4                      | 7-1/2                |
| 5/8                   | 3-1/2           | 6-1/8                      | 12-1/4               |
|                       | 4-3/4           | 8-5/16                     | 16-5/8               |
| 3/4                   | 3               | 5-1/4                      | 10-1/2               |
|                       | 7               | 5-1/4                      | 10-1/2               |
| 7/8                   | 4-1/2           | 7-7/8                      | 15-3/4               |
|                       | 7               | 7                          | 14                   |
| 1                     | 5-1/2           | 9-5/8                      | 19-1/4               |
|                       | 7               | 7                          | 14                   |

## Torque Values

| Anchor Dia. (in.) | Recommended Setting Torque (ft lb.) | Recommended Minimum Embedment (in.) |
|-------------------|-------------------------------------|-------------------------------------|
| 1/4               | 8                                   | 1                                   |
| 5/16              | 15                                  | 1-1/4                               |
| 3/8               | 25                                  | 1-1/2                               |
| 1/2               | 55                                  | 2                                   |
| 5/8               | 95                                  | 3                                   |
| 3/4               | 170                                 | 3                                   |
| 7/8               | 250                                 | 4-1/2                               |
| 1                 | 300                                 | 5-1/2                               |

**Maximum Tensile and Shear Capacity For Static Loads**

| Anchor & Hole Size | Limestone Aggregate |               |             | Unreinforced Stone Aggregate Concrete |               |             |               |             |               | Unreinforced Lightweight (Idealite) |              |               |             |
|--------------------|---------------------|---------------|-------------|---------------------------------------|---------------|-------------|---------------|-------------|---------------|-------------------------------------|--------------|---------------|-------------|
|                    | Embed. (in.)        | 2000 psi      |             | Embed. (in.)                          | 3000 psi      |             | 5000 psi      |             | 7000 psi      |                                     | Embed. (in.) | 5000 psi      |             |
|                    |                     | Tension (lb.) | Shear (lb.) |                                       | Tension (lb.) | Shear (lb.) | Tension (lb.) | Shear (lb.) | Tension (lb.) | Shear (lb.)                         |              | Tension (lb.) | Shear (lb.) |
| 1/4                | 1-1/8               | 1132          | 1211        | 1-1/8                                 | 1320          | 1751        | 1760          | 2316        | 2464          | 2494                                | 1-1/2        | 1861          | 1947        |
| 1/4                | 1-3/4               | 1256          | 1211        | 1-1/2                                 | 1856          | 1751        | 2473          | 2316        | 3462          | 2494                                | -            | -             | -           |
| 5/16               | 1-1/4               | 1308          | 1210        | 1-1/4                                 | 2057          | 1839        | 2742          | 2530        | 3939          | 3439                                | 1-1/2        | 2493          | 3064        |
| 5/16               | 2                   | 1181          | 1210        | 1-3/4                                 | 2389          | 1839        | 3185          | 2530        | 4459          | 3439                                | -            | -             | -           |
| 3/8                | 1-1/4               | 994           | 1223        | 1-1/2                                 | 2876          | 4286        | 3834          | 5213        | 5368          | 5658                                | 1-3/4        | 3125          | 4289        |
| 3/8                | 4                   | 1728          | 1223        | 4                                     | 3488          | 4286        | 4650          | 5213        | 6510          | 5658                                | -            | -             | -           |
| 1/2                | 1-3/4               | 1542          | 3009        | 2-1/4                                 | 3473          | 7138        | 5789          | 10748       | 8105          | 11550                               | 2-1/4        | 4778          | 9833        |
| 1/2                | 6                   | 2695          | 3009        | 5                                     | 4809          | 7138        | 8015          | 10748       | 11221         | 11550                               | -            | -             | -           |
| 5/8                | -                   | -             | -           | 3-1/2                                 | 7582          | 10719       | 12636         | 15583       | 17690         | 16700                               | 2-1/2        | 6455          | 12500       |
| 5/8                | -                   | -             | -           | 4-3/4                                 | 9179          | 10719       | 15299         | 15583       | 21419         | 16700                               | -            | -             | -           |
| 3/4                | -                   | -             | -           | 3                                     | 11579         | 15537       | 19299         | 21000       | 27019         | 23103                               | 3-1/2        | 17293         | 19050       |
| 3/4                | -                   | -             | -           | 7                                     | 15444         | 15537       | 25740         | 21000       | 36036         | 23103                               | -            | -             | -           |
| 7/8                | -                   | -             | -           | 4-1/2                                 | 15266         | -           | 25444         | 25099       | 33622         | 28718                               | -            | -             | -           |
| 7/8                | -                   | -             | -           | 7                                     | 16992         | -           | 28320         | 25099       | 39648         | 28718                               | -            | -             | -           |
| 1                  | -                   | -             | -           | 5-1/2                                 | 16351         | -           | 27252         | 33083       | 38153         | 35700                               | 4-1/2        | 21616         | 31666       |
| 1                  | -                   | -             | -           | 7                                     | 17837         | -           | 29728         | 33083       | 41619         | 35700                               | -            | -             | -           |
| Source             | 1                   |               |             | 2                                     |               |             |               |             |               | 2                                   |              |               |             |

Sources (available upon request):

1. University of Texas, Austin, TX (using ICBO-ES testing criteria); 1993.
2. AA Engineers & Associates, Inc., Denver, CO; 1981.

**NOTES:**

- Information provided only for the use of a qualified design engineer. Use of technical data by persons not qualified could cause serious damage, injury, or even death.
- Ultimate values shown. For static loads, use one-fourth of the maximum tensile and shear capacities for the recommended 4:1 safety factor.
- Tested to ASTM E488 Test Standard
- Sources (available upon request): U.S. Testing Co., Tulsa, OK



**Wej-It Tie Wire WTW Anchor**

- For bracing and hanging acoustical ceiling tile, hanging electrical lights or other lightweight applications

**Order Information**

| Catalog Number | Anchor Dia. & Length (in.) | Min. Embedment (in.) | Eye Diameter | Quantity: Cards Per Box/Carton |
|----------------|----------------------------|----------------------|--------------|--------------------------------|
| WTW1421        | 1/4 x 2 1/4                | 1 1/4                | 9/32         | 100/1000                       |

**Edge Distance**

| Embedment (E) in Anchor Diameters | Edge Distance |
|-----------------------------------|---------------|
| E < 6d (shallow)                  | 1.75E         |
| 6d ≤ E ≤ 8d (standard)            | 1.00E         |
| 8d < E (deep)                     | 0.75E         |