

TOGGLER® ANCHOR SYSTEM

Technical Bulletin



TOGGLER® HOLLOW-WALL ANCHORS

The latest generation of the ever-evolving TOGGLER hollow-wall anchor technology...

Our third generation of TOGGLER hollow-wall anchors provide **vibration-proof anchoring of light to medium loads in hollow walls & ceilings** ... but also hold securely when they encounter an unexpected solid, such as a wooden stud, or when performing as wedge anchors in materials with thicknesses above their normal wall grip range.

New patented improvements in the original design have **increased holding strength and abuse resistance**. Holding arms have been thickened and strengthened without increasing insertion hole size, and major stress points have been significantly reinforced without increasing anchor size.

Use TOGGLER SNAPTOGGLE® toggle bolts for highest hollow-wall holding strength.

Benefits:

- **Strongest** of all plastic toggle anchors—reinforces the wall or ceiling & leads the load away from the hole
- **Vibration & shock proof**—won't damage walls or ceiling
- Can use a screw gun—anti-rotation fins **prevent spinning**
- **Greatest grip range** for each anchor (see inside)
- Accepts **greatest range of screw sizes** in each anchor
- **All install in only a small 5/16" hole**
- Pre-install **without the screw**
- Key-activated **positive locking** system
- Screw can be **removed and reinserted** in same anchor without loss of holding power
- **Corrosion-proof** when used with stainless steel screws
- **Nonmagnetic, nonconductive**

ULTIMATE TENSILE PULL-OUT VALUES [lb]

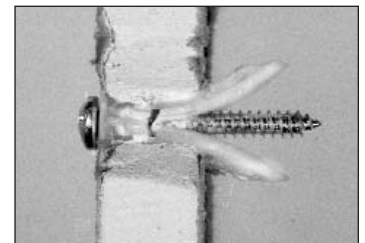
Anchor	Grip Range	Drill dia.	Screw size	Plywood	3/8" Drywall	1/2" Drywall	5/8" Drywall
TA®	1/8"-1/4"	5/16"	#8	1/4" 124	-	-	-
TB®	3/8"-1/2"	5/16"	#8	1/2" 175	97	143	102*
TC®	5/8"-3/4"	5/16"	#8	-	-	-	159

* #10 screw; anchor used as wedge anchor [not toggled fully open], since substrate is thicker than grip range

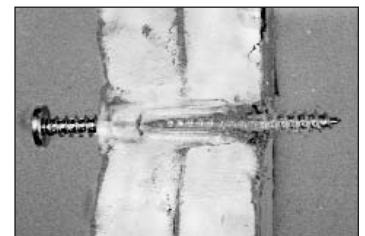
ULTIMATE SHEAR PULL-OUT VALUES [lb]

Anchor	Grip Range	Drill dia.	Screw size	Plywood	3/8" Drywall	1/2" Drywall	5/8" Drywall
TA®	1/8"-1/4"	5/16"	#8	1/4" 265	-	126	-
TB®	3/8"-1/2"	5/16"	#8	-	126	167	214*
TC®	5/8"-3/4"	5/16"	#8	-	-	-	237

* #10 screw; anchor used as wedge anchor [not toggled fully open], since substrate is thicker than grip range



In solid substrates (concrete, masonry, brick, etc.) or in drywall thicker than its grip range, the TOGGLER hollow-wall anchor holds securely as a wedge or expansion anchor



- Holding strength for a TOGGLER hollow-wall anchor varies directly with the strength and condition of the substrate, the screw size, and the extent of the screw engagement—and inversely with variations in hole diameter and the distance of the load from the wall.
- All figures in pounds. Pull-out values based on independent laboratory tests done according to U.S. Government standards. They should be used as guides only and cannot be guaranteed. The age, condition, and capacity of the substrate must be considered.
- **Industry standards recommend 1/4 of ultimate test load.**

TOGGLER® HOLLOW-WALL ANCHORS

Specifications

Material — Specially formulated grade of **self-lubricating, translucent** polypropylene that blends into wall color & texture
Non-conductive (Dielectric constant $2.30 \times 10^6 \text{ Hz}$), allowing safe anchoring of electrical apparatus
Non-corrodible (safely used with stainless steel screws in corrosive environments)
Toughness with elasticity, even at temperature extremes in the range from **-20° F to 212° F**
 Low friction, self-lubricating — **facilitates screw insertion**

Screw specification — within each screw range, use any sheet metal screw or other screw with a sufficiently long thread [i.e., above the minimum screw thread length (TL) shown in the chart below]

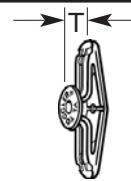
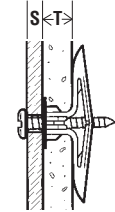
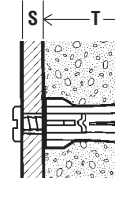
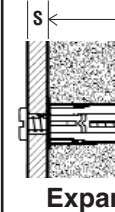
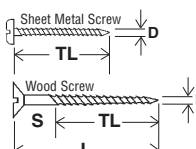
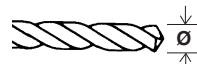
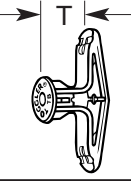
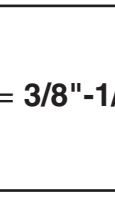
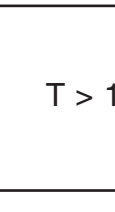
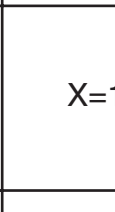
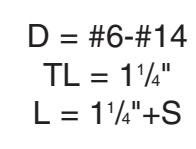
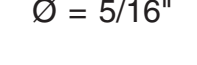
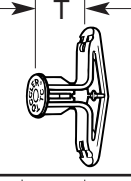
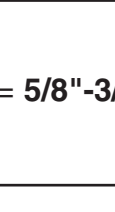
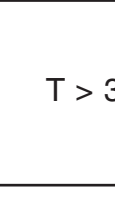
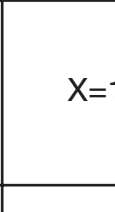
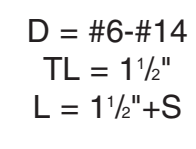
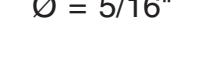
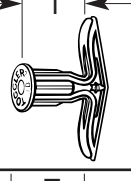
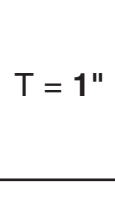
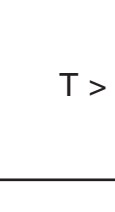
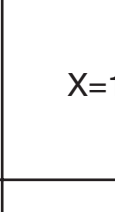
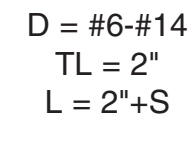
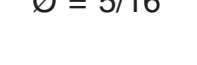
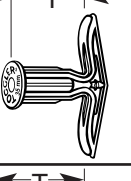
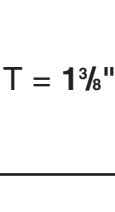
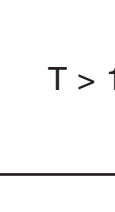
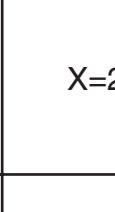
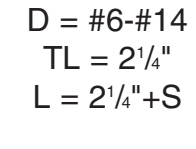
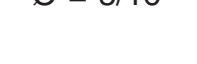

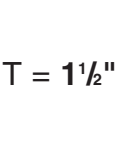
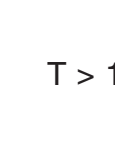
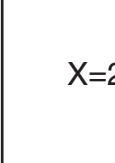
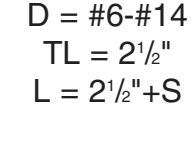

[NOTE: only the threaded (TL) portion of the screw should be in the anchor itself; any unthreaded shank (S) portion of the screw may be in the fixture or item being anchored, but not in the anchor]

Setting Keys — Use red [TK] setting key for setting TA, TB & TC anchors in hollow walls within their grip range.

Use black [TKB] setting key for setting TD, T35 & T39 anchors in hollow walls within their grip range.

Behind the wall clearance for operation — All anchors (except TA) = $3/4"$ • TA anchor = $1/2"$

Fed specs — Type IV anchor in Federal Specification FF-B-588D (superceded)

Size Selection chart	Fully Toggled	Wedge	Expansion Anchor	Screw size range	Drill size*
 <p>TA[®]</p>	 <p>$T = 1/8" - 1/4"$</p>	 <p>$T > 1/4"$</p>	 <p>$X = 1"$</p>	 <p>D = #8-#12 TL = 1" L = 1" + S</p>	 <p>Ø = 5/16"</p>
 <p>TB[®]</p>	 <p>$T = 3/8" - 1/2"$</p>	 <p>$T > 1/2"$</p>	 <p>$X = 1 1/4"$</p>	 <p>D = #6-#14 TL = 1 1/4" L = 1 1/4" + S</p>	 <p>Ø = 5/16"</p>
 <p>TC[®]</p>	 <p>$T = 5/8" - 3/4"$</p>	 <p>$T > 3/4"$</p>	 <p>$X = 1 1/2"$</p>	 <p>D = #6-#14 TL = 1 1/2" L = 1 1/2" + S</p>	 <p>Ø = 5/16"</p>
 <p>TD[™]</p>	 <p>$T = 1"$</p>	 <p>$T > 1"$</p>	 <p>$X = 1 7/8"$</p>	 <p>D = #6-#14 TL = 2" L = 2" + S</p>	 <p>Ø = 5/16"</p>
 <p>T35[™]</p>	 <p>$T = 1 3/8"$</p>	 <p>$T > 1 3/8"$</p>	 <p>$X = 2 1/4"$</p>	 <p>D = #6-#14 TL = 2 1/4" L = 2 1/4" + S</p>	 <p>Ø = 5/16"</p>
 <p>T39[™]</p>	 <p>$T = 1 1/2"$</p>	 <p>$T > 1 1/2"$</p>	 <p>$X = 2 1/2"$</p>	 <p>D = #6-#14 TL = 2 1/2" L = 2 1/2" + S</p>	 <p>Ø = 5/16"</p>

* In very hard materials, like ceramic tile, use 3/8" diameter drill.

TOGGLER® HOLLOW-WALL ANCHORS

Safety

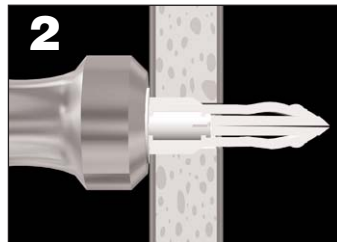
- All TOGGLER anchors are constructed completely out of inert, non-toxic materials.
- OSHA standard 29 CFR 1910.1200 and DOT standards are not applicable.
- No MSDS is required for any TOGGLER anchor.
- Non-conductive, allowing safe anchoring of electrical apparatus. (Dielectric constant is 2.30×10^6 Hz)

Installation Information

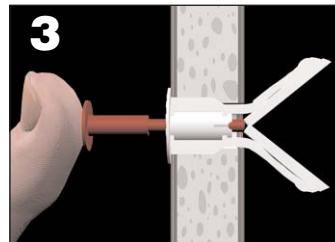
- The TOGGLER hollow-wall anchor pre-installs without the screw.
- For critical shear load applications, make the folding arms of the anchor open in the direction of the shear load, usually vertical to the floor.
- The setting key toggles the anchor fully open, locking it in place & forming an over-center, load-bearing truss.
- The fully toggled anchor (or, in thicker or solid materials, the wedged anchor) securely holds the screw.
- Setting the screw head flush with the fixture completes the installation.
- The substantial anti-rotation fins of the uniquely shaped head of the TOGGLER hollow-wall anchor cut into drywall and prevent spinning even with the use of a screw gun.
- All of the TOGGLER hollow-wall anchors will function **without modification** as wedge or as expansion anchors in materials thicker than the anchor's grip range.
- Do not store in direct sunlight, or use in applications exposed to long-term direct sunlight. In nearly all applications, the anchor is hidden from UV exposure by the fastened object or the installation location. All anchors available, on special order, in black for high UV-resistance.



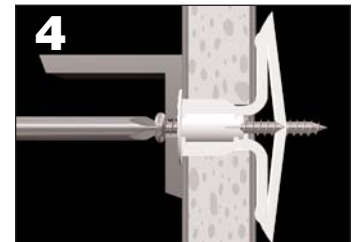
1 Drill 5/16" diameter hole. Fold anchor in middle.



2 Insert anchor in hole and tap flush.



3 Insert key to pop anchor open behind hollow wall (not necessary for thick or solid walls).
Do not hammer key. Remove. key.



4 Place item over anchor. Insert screw and tighten until flush with item—then stop. **Do not overtighten.**

Applications

- Window treatments
- Towel bars
- Kitchen accessories
- Smoke detectors
- CO detectors
- Telephone equipment
- Shelving
- Bathroom accessories
- Electric boxes
- Lighting fixtures
- Circuit breakers
- Signs
- Alarms
- Clocks
- Marine hardware
- Speaker mounts
- Mirrors
- Soap dispensers

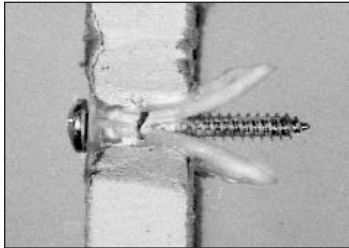
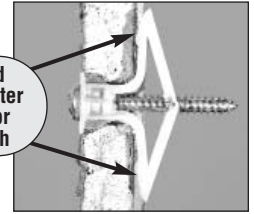
For medium holding in

- Drywall
- Gypsum board
- Plasterboard
- Greenboard
- Fiberglass
- Hollow core doors
- Thin paneling
- Sheet metal
- Acoustic ceilings
- Masonite panels
- Tile over drywall
- Tile over greenboard

TOGGLER® HOLLOW-WALL ANCHORS

The Unique Way the TOGGLER Hollow-Wall Anchor Works

The setting key toggles the anchor fully open, **locking** it in place & forming an over-center, load-bearing truss. Added load acts to increase the holding, as the truss moves the load away from the hole: up against the screw and back down against the surface of the wall. Over-center holding and strong, yet flexible, plastic composition provides **high resistance to vibrations and stress from dynamic loading**—the most common causes of anchor failure. Spreading of the load on the wall surface rather than wedging against the gypsum in the interior of the drywall effectively *minimizes drywall failure* and puts the load on the wall surfaces to *maximize load bearing*.



Positive tactile feedback of the setting key, in popping the anchor arms over center, is an absolute indication of proper hollow wall setting of the anchor. Do **not** place excessive pressure on the key and **never** use a hammer on it, since failure to set indicates either a solid wall or a wall too thick for the anchor to set in its hollow mode. The anchor **will** operate under such conditions, however, as a wedge and compression solid-wall anchor with significant holding strength.

Use the TOGGLER brand ALLIGATOR® solid-wall anchors for highest holding strength in solid walls.

A screw gun is ideal for screw insertion. Anti-rotation fins prevent the anchor from spinning in the wall. The anchors will not collapse or strip out if the head of the screw is simply screwed flush with the object being fastened. **Fastening is complete with the seating of the screw head snugly flush with the object being fastened. Do not continue tightening the screw past this point.**

The flexibility of the plastic composition of the anchor acts as a cushion against wall gouging or breakage.

For all of the TOGGLER hollow-wall anchors, use a 5/16" diameter drill. In very hard materials use a 3/8" diameter drill. Where a drill is not available, a #3 blade (1/4") screwdriver, when rotated, will make a 5/16" installation hole.

For critical shear load applications, make the folding arms of the anchor open in the direction of the shear load, usually vertical to the floor.

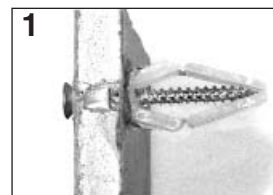
Use the red (TK) key to set the TA, TB, & TC anchors in hollow walls within their grip range.

Use the black (TKB) key to set the TD, T35, & T39 anchors in hollow walls in their grip range.

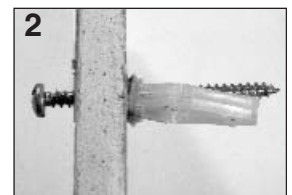
With the TOGGLER brand hollow-wall anchors, the screw engages the mechanism of the anchor immediately behind the wall surface, rather than far behind the wall. The setting key securely locks the TOGGLER hollow-wall anchors on the wall **before** the fixture is installed. The **inward**, rather than the outward, folding of the anchor for insertion, positions the screw-engaging portions of the anchor closer to the screw, with minimum required screw length and elimination of missed screw engagement.

The outward folding required by some **competitive anchors** [**NOT** by TOGGLER hollow-wall anchors]:

- 1) requires an extra-long screw, which is more expensive and requires more clearance behind the wall and more time to install
- 2) has almost no holding power, if the screw enters the anchor at an angle and consequently does not engage the apex of the anchor
- 3) "strips out" the only region capable of securely holding the screw, because, in order to draw down the anchor leg, one needs to keep turning the screw after it has become flush with a fixture.



1
Short screw in competitive anchor—misses apex;
NO holding power



2
Screw at angle in competitive anchor—misses apex;
NO holding power

All TOGGLER Anchors are proudly made in the U.S.A.



TOGGLER Anchor System
Div. of Mechanical Plastics Corp.
110 Richards Avenue
Norwalk, CT 06854
USA

888.864.4537 Toll-Free
203.857.2200 Phone
203.857.2201 Fax
info@toggler.com
www.toggler.com

