



# Toggle Bolt

**BASE MATERIAL**

Hollow Block, Wallboard, Plaster

**SIZE RANGE**

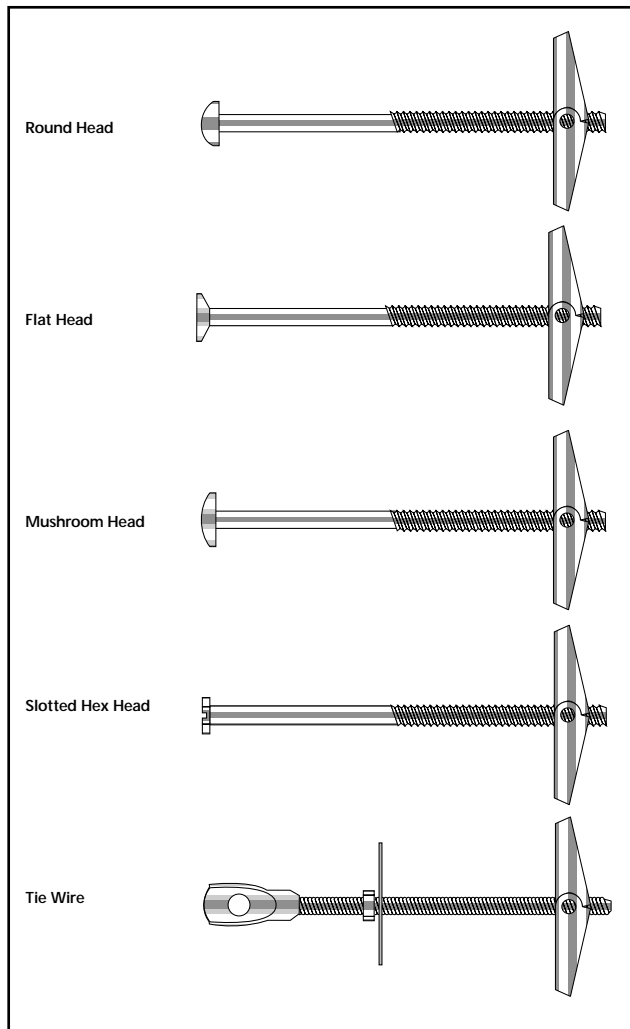
1/8" x 2" to 1/2" x 6"

**ANCHOR MATERIAL**

Carbon Steel

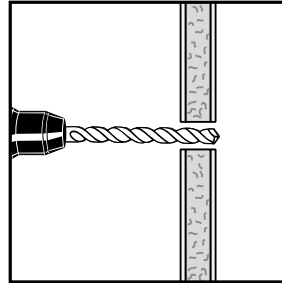
**PRODUCT DESCRIPTION**

The Toggle Bolt is a spring wing type hollow wall anchor designed for use in block, wallboard, and other hollow base materials.

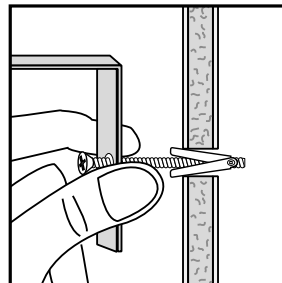


The Toggle Bolt is a two-part assembly consisting of a machine screw and a spring wing toggle. Sizes range from 1/8" x 2" to 1/2" x 6" with combo round, flat, mushroom, tie-wire or slotted hex head styles.

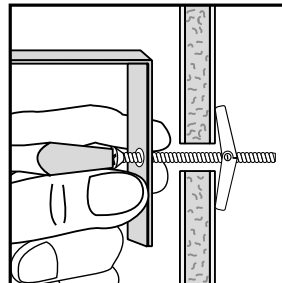
**INSTALLATION PROCEDURES**



Drill the required hole through the base material. The tolerances of the drill bit used should meet the requirements of ANSI Standard B212.15. In denser materials such as high strength concrete, drill the hole 1/16" larger.



Insert bolt through fixture to be fastened, thread on wings, then fold wings completely back and insert through hole until wings spring open.



Pull back on assembly to hold wings inside wall to prevent the wings from spinning while tightening bolt. Turn bolt with screwdriver until firmly tightened

**ANCHOR SIZES AND STYLES**

The following tables list the sizes and types of Toggle Bolt anchors. To determine the minimum bolt length required for the standard toggle, add the thickness of the fixture, including any spacers or shims plus the thickness of the base material and the wing clearance. This will be the minimum bolt length required.

CAT. NO. MUSH.	SHH	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT./ 100
4023	4028	1/8" x 2"	3/8"	50	500	1-1/4
4033	4038	1/8" x 3"	3/8"	50	500	1-1/2
4043	-	1/8" x 4"	3/8"	50	500	2
4133	-	3/16" x 3"	1/2"	50	500	4
4143	-	3/16" x 4"	1/2"	50	500	5
4233	-	1/4" x 3"	5/8"	50	500	6-1/2
4243	-	1/4" x 4"	5/8"	50	500	7-1/2

CAT. NO. ROUND	FLAT	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT./ 100
4021	-	1/8" x 2"	3/8"	50	500	1-1/4
4031	4033	1/8" x 3"	3/8"	50	500	1-1/2
4041	4042	1/8" x 4"	3/8"	50	500	2
4121	-	3/16" x 2"	1/2"	50	500	3-1/4

CAT. NO. ROUND	FLAT	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT/ 100
4131	4132	3/16" x 3"	1/2"	50	500	4
4141	4142	3/16" x 4"	1/2"	50	500	5
4151	-	3/16" x 5"	1/2"	50	500	5-1/2
4161	-	3/16" x 6"	1/2"	50	500	6-1/4
4231	4232	1/4" x 3"	5/8"	50	500	6-1/2
4241	4242	1/4" x 4"	5/8"	50	500	7-1/2
4251	-	1/4" x 5"	5/8"	50	500	8-1/2
4261	-	1/4" x 6"	5/8"	50	500	9-1/2
4331	-	5/16" x 3"	7/8"	25	250	13
4341	-	5/16" x 4"	7/8"	25	250	14
4351	-	5/16" x 5"	7/8"	25	250	16
4361	-	5/16" x 6"	7/8"	25	250	18
4431	-	3/8" x 3"	7/8"	25	250	16
4441	-	3/8" x 4"	7/8"	25	250	18
4451	-	3/8" x 5"	7/8"	25	125	20
4461	-	3/8" x 6"	7/8"	25	125	23
4541	-	1/2" x 4"	1-1/4"	25	25	42
4561	-	1/2" x 6"	1-1/4"	25	25	50

TOGGLE WINGS ONLY

CAT. NO.	SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT/ 100
4000	1/8"	3/8"	100	500	1
4020	3/16"	1/2"	100	1000	2
4220	1/4"	5/8"	100	1000	3
4330	5/16"	7/8"	50	500	7
4430	3/8"	7/8"	50	500	7
4540	1/2"	1-1/4"	25	25	19

TIE-WIRE ACOUSTICAL TOGGLE

CAT. NO.	SIZE	TIE WIRE HOLE SIZE	DRILL DIA.	STD. BOX	STD. CTN.	WT/ 100
4247	1/4" x 4"	7/32"	5/8"	100	100	9
4257	1/4" x 5"	7/32"	5/8"	100	100	12

INSTALLATION SPECIFICATIONS

STANDARD TOGGLE

ANCHOR SIZE	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
ANSI Drill Bit Size	3/8"	1/2"	5/8"	7/8"	7/8"	1-1/4"
Wing Clearance	1-1/16"	1-3/8"	1-1/2"	2-1/8"	2-1/8"	3"
Thread Size	6-32	10-24	1/4-20	5/16-18	3/8-16	1/2-13

MATERIAL SPECIFICATIONS

ANCHOR COMPONENT	COMPONENT MATERIAL
Wing Body	AISI 1010
1/8"-3/8" Trunnion Nut	AISI 1010
1/2" Trunnion Nut	Zamac Alloy
Bolt	Carbon Steel - ANSI B18.6.3
Zinc Plating	ASTM B633, SC 1, Type III (Fe/Zn 5)

PERFORMANCE DATA

The following load capacities are based on testing conducted according to ASTM Standard E 488.

LOAD CAPACITIES IN GYPSUM WALLBOARD

ANCHOR SIZE (INCHES)	3/8" WALLBOARD TENSION (LBS.)	3/8" WALLBOARD SHEAR (LBS.)	1/2" WALLBOARD TENSION (LBS.)	1/2" WALLBOARD SHEAR (LBS.)	5/8" WALLBOARD TENSION (LBS.)	5/8" WALLBOARD SHEAR (LBS.)	3/4" WALLBOARD TENSION (LBS.)	3/4" WALLBOARD SHEAR (LBS.)
1/8"	150	180	200	205	250	265	290	310
3/16"	170	210	245	280	315	350	385	420
*1/4"	285	310	310	350	350	385	420	445
5/16"	320	360	330	420	365	450	425	510
3/8"	325	370	340	440	385	470	450	530
1/2"	340	410	435	470	520	560	555	600

\* Also applies to 1/4" Tie-Wire Toggle.

NOTE: The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load. Since the consistency of gypsum wallboard varies greatly, these load capacities should be used as a guideline only. Job site tests should be conducted to determine the actual load capacities.

LOAD CAPACITIES FOR C-90 HOLLOW BLOCK

ANCHOR SIZE	DRILL DIA.	C-90 HOLLOW BLOCK TENSION (LBS.)	C-90 HOLLOW BLOCK SHEAR (LBS.)
1/8"	3/8"	270	270
3/16"	1/2"	340	530
*1/4"	5/8"	560	890
5/16"	7/8"	775	1,020
3/8"	7/8"	825	1,060
1/2"	1-1/4"	1,305	1,200

\* Also applies to 1/4" Tie-Wire Toggle.

NOTE: Depending upon anchor application and governing building code, ultimate load capacities should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load. The design professional familiar with the actual product installation should be consulted. Please refer to the general section entitled Evaluation of Test Data that appears earlier in this manual for current industry standards. The consistency of C-90 hollow block varies greatly. The load capacities listed above should be used as guidelines only. Job site tests should be conducted to verify base material consistency and actual anchor performance.

APPROVALS AND LISTINGS

The following approvals and listings are for reference purposes. They should be reviewed by the design professional responsible for the product installation to verify approved sizes, base materials, and compliance with local codes.

Federal Specification

Standard Toggle Bolt anchors meet the descriptive requirements of FF-B-588D, Type 1, Class A, Style 1 (superseded).

Tie Wire Toggle Bolt anchors meet the descriptive requirements of FF-B-588D, Type 1, Class A, Style 3 (superseded).

SUGGESTED SPECIFICATION

STANDARD TOGGLE

Anchors for hollow walls shall be a two part assembly consisting of a machine screw and a spring wing toggle. The machine screw shall meet the requirements of ANSI B18.6.3. The spring wing toggles shall consist of two "u" shaped stamped sheet metal wings which are mounted on a trunnion nut. The wings shall be held in the open position by a steel spring. Carbon steel components shall be plated according to ASTM Specification B633, SC1, Type III (Fe/Zn 5). Toggle-Bolt anchors shall be as dimensioned and supplied by Powers Fasteners Inc.