

POWERS FASTENERS. THE LEADER IN INNOVATIVE FASTENING SOLUTIONS

Designed  
to Weather  
the Storm

# Power<sup>®</sup> ANCHOR SCREW CONCRETE



Powers is a proud member of:



**Powers**  
FASTENERS

# The TAPPER<sup>®</sup> Solution

## A Complete Offering that Matches Every Application

The TAPPER fastening system is a complete family of screw anchors for light to medium duty applications in concrete, masonry block and brick base materials. The TAPPER is fast and easy to install and provides a neat, finished appearance. The TAPPER screw anchor is engineered with matched tolerance bits and installation tools designed to meet the needs of the user and also provide optimum performance.

For every project, it is important to consider three things before making a selection: The proper head style, the color or finish that is desired, and the required level of corrosion resistance.



The TAPPER screw anchor is available in carbon steel with a zinc plated finish, carbon steel with a Perma-Seal climate coating in several colors, and 410 and 304 stainless steels. Head styles include a slotted hex washer head, Phillips flat head, trim flat head and flange hex head.

The versatile TAPPER product line offers the right choices for many applications. Whether it's hand rails, shutters, fixtures, or window and door frames, it is important to match the right application with the right product. The TAPPER screw anchor line has all applications covered.

### Features and Benefits:

- Available in several head styles
- Several colors and finishes to match application
- Removable and reusable
- High-Low thread design for greater stability and grip
- Does not exert expansion forces
- No hole spotting required
- Good corrosion protection with Perma-Seal coating
- Available in 410 and 304 stainless steels
- Can be installed in "hard" base materials



## A Total Variety of Options



### **Zinc Plated Carbon Steel TAPPER**

Clean metallic finish. Suggested for indoor and non-corrosive environments. Low corrosion resistance level.



### **Perma-Seal Coated Carbon Steel TAPPER**

Perma-Seal coating is available in four different finishes to match all applications. Perma-Seal provides an extended corrosion resistance level for indoor and outdoor use including fastening through pressure treated lumber.



### **410 Stainless Steel TAPPER**

Class 4 coating provides added protection and a high corrosion resistance level for all applications.



### **304 Stainless Steel TAPPER**

Superior corrosion resistance level. Excellent for marine and industrial applications, where a high grade of stainless steel is needed. Ideal for use in pressure treated lumber.



# TAPPER® Applications

## Applications

### 1/4" and 3/8" Zinc Plated TAPPERS®

- **Metal Door Frames** – Zinc plated Tappers come in either a Flange Hex Head or oversized countersunk Phillips Flat Head and are used for applications that may require higher holding values.



- **Interior Electrical Applications** – Zinc plated Tappers are used in interior electrical applications such as conduit, EMT clip and electrical boxes.



### Blue / White / Silver / Bronze Perma-Seal TAPPERS®

- **Windows** – Window applications are typical for Perma-Seal Tappers because of their speed of installation and extended corrosion resistance level.



- **Storm Shutters** – Perma-Seal Tappers are used on storm shutters due to their high strength and corrosive resistant properties.

- **Interior Lighting Fixtures** – Perma-Seal Tappers are a favorite for electrical contractors due to their ease of installation and holding values.



- **Interior Hand Rails** – Zinc plated and Perma-Seal Tappers are typically used for interior handrail applications where it is necessary to match the finish of the fixture.

- **Interior Door Bucks** – Perma-Seal Tappers are commonly used for Interior Door Buck applications due to their ease of installation and high holding values in concrete.



- **Screen Enclosures** – Perma-Seal Tappers are used in screen enclosure applications, where coastal weathering and wind conditions require additional protection.

### 410 Stainless Steel TAPPERS®

410 Stainless Steel Tappers are ideal where coastal conditions can wear on a fastener. 410 Stainless Steel Tappers are used in exterior applications where high corrosion resistance is needed, such as:

- **Screen Enclosures**
- **Storm Shutters**
- **Light Duty Industrial Applications**
- **Exterior Metal Lighting or Fixture Applications**



## 304 Stainless Steel TAPPERS®

### • Exterior Applications –

304 Stainless Steel Tappers are specifically engineered for exterior applications where high corrosion resistance is needed, withstanding the most demanding conditions. They are also used in food & beverage facilities, waste and water treatment plants, and marine applications.



## TAPPER® Accessories



### INSTALLATION TOOLS FOR 3/16" AND 1/4" TAPPER

CAT. NO.	DESCRIPTION	MAX SCREW LENGTH	MAX. BIT LENGTH	STD. BOX	WT./ EACH
2791	Combo TAPPER 1000 Tool	4"	5-1/2"	1	3/4
2792	CONDRIVE®* 2000	2-3/4"	4-1/2"	1	3/4
2795	1000 SDS Extension (8")	6"	7-1/2"	1	1/2

### INSTALLATION TOOL FOR 3/8" TAPPER

CAT. NO.	DESCRIPTION	MAX SCREW LENGTH	MAX. BIT LENGTH	STD. BOX	WT./ EACH
5865	TAPPER 3000 Tool	4"	5-1/2"	1	3/4
5867	3000 Extension (8")	6"	7-1/2"	1	1/2

\* CONDRIVE® is a Registered Trademark of Illinois Tool Works. This tool cannot be used with SDS Drill Bits or PFH Screws.

## TAPPER® Drill Bits

TAPPER Drill Bits in the diameters listed are nominal size. 3/16" and 1/4" Perma-Seal TAPPER anchors must be installed with special tolerance TAPPER drill bits. 1/4" Stainless Steel TAPPER anchors require the use of specific tolerance TAPPER drill bits, which are gold or silver colored, to denote the standard size and special application size for harder materials. 3/8" diameter TAPPER anchors should be installed with a 1/4" ANSI drill bit.



### CARBIDE DRILL BITS FOR PERMA-SEAL TAPPER

#### STRAIGHT SHANK

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
2781	5/32" x 3-1/2"	2	10	1/4
2782	5/32" x 4-1/2"	3	10	1/4
2783	5/32" x 5-1/2"	4	10	1/4
2785	3/16" x 3-1/2"	2	10	1/4
2786	3/16" x 4-1/2"	3	10	1/4
2787	3/16" x 5-1/2"	4	10	1/2
2788	3/16" x 6-1/2"	5	10	1/2
2789	3/16" x 7-1/2"	6	10	1/2



#### HEX SHANK SDS-PLUS

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
2793	5/32" x 5"	3	1	1
2794	5/32" x 7"	5	1	1
2796	3/16" x 5"	3	1	1
2797	3/16" x 7"	5	1	1



### CARBIDE DRILL BITS FOR TYPE 304 SS TAPPER

#### STRAIGHT SHANK

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
2894	3/16" x 3-1/2"	2	10	1/4
2895	3/16" x 4-1/2"	3	10	1/4



#### HEX SHANK SDS-PLUS

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
2790	3/16" x 5"	3	1	1

### SPECIAL DRILL BITS FOR TYPE 304 SS TAPPER

#### HEX SHANK SDS-PLUS

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
2780	3/16" x 5"	3	1	1



### CARBIDE DRILL BITS FOR 3/8" TAPPER

#### STRAIGHT SHANK

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
5861	1/4" x 5-1/2"	4	5	1/2
5862*	1/4" x 6-1/2"	5	5	3/4
5863*	1/4" x 7-1/2"	6	5	3/4

\* Discontinued item once current stock is exhausted.



#### HEX SHANK SDS-PLUS

CAT. NO.	SIZE	USABLE LENGTH	STD. TUBE	WT./ 10
5866	1/4" x 6"	4	1	1-1/2
5868*	1/4" x 8"	6	1	1-3/4

\* Discontinued item once current stock is exhausted.

# The TAPPER<sup>®</sup> Line



## BLUE PERMA-SEAL TAPPER

CAT. NO.		SIZE	STD. BOX	STD. CTN.	WT./100	DRILL REFERENCES	
HEX	PFH					STRAIGHT	SDS HEX
2700	2740	3/16" x 1-1/4"	100	500	3/4	2781	2793
2702	2742	3/16" x 1-3/4"	100	500	1	2781	2793
2704	2744	3/16" x 2-1/4"	100	500	1-1/4	2782	2793
2706	2746	3/16" x 2-3/4"	100	500	1-1/2	2782	2793
2708	2748	3/16" x 3-1/4"	100	500	1-3/4	2783	2794
2710	2750	3/16" x 3-3/4"	100	500	2-1/4	2783	2794
2712	2752	3/16" x 4"	100	500	2-1/2	2783	2794
2720	2760	1/4" x 1-1/4"	100	500	1-1/2	2785	2796
2722	2762	1/4" x 1-3/4"	100	500	1-3/4	2785	2796
2724	2764	1/4" x 2-1/4"	100	500	2	2786	2796
2726	2766	1/4" x 2-3/4"	100	500	2-3/4	2786	2796
2728	2768	1/4" x 3-1/4"	100	500	3-1/4	2787	2797
2730	2770	1/4" x 3-3/4"	100	500	3-3/4	2787	2797
2732	2772	1/4" x 4"	100	500	4-1/2	2787	2797
-	2774	1/4" x 5"	100	100	4-1/2	2788	-
-	2776	1/4" x 6"	100	100	5-1/2	2789	-

## BLUE PERMA-SEAL TAPPER (MASTER PACKAGING)

CAT. NO.		SIZE	STD. BOX	STD. CARTON	WT./100	DRILL REFERENCES	
HWH	PFH					STRAIGHT	SDS HEX
9462	9476	3/16" x 1 1/4"	2000	2000	3/4	2781	2793
9463	9477	3/16" x 1 3/4"	2000	2000	1	2781	2793
9464	9478	3/16" x 2 1/4"	2000	2000	1-1/4	2782	2793
9465	9479	3/16" x 2 3/4"	2000	2000	1-1/2	2782	2793
9466	9480	3/16" x 3 1/4"	1000	1000	1-3/4	2783	2794
9467	9481	3/16" x 3 3/4"	1000	1000	2-1/4	2783	2794
9468	9482	3/16" x 4"	1000	1000	2-1/2	2783	2794
9469	9483	1/4" x 1 1/4"	2000	2000	1-1/2	2785	2796
9470	9484	1/4" x 1 3/4"	2000	2000	1-3/4	2785	2796
9471	9485	1/4" x 2 1/4"	1000	1000	2	2786	2796
9472	9486	1/4" x 2 3/4"	1000	1000	2-3/4	2786	2796
9473	9487	1/4" x 3 1/4"	1000	1000	3-1/4	2787	2797
9474	9488	1/4" x 3 3/4"	1000	1000	3-3/4	2787	2797
9475	9489	1/4" x 4"	1000	1000	4-1/2	2787	2797
-	9490	1/4" x 5"	1000	1000	4-1/2	2788	-
-	9491	1/4" x 6"	500	500	5-1/2	2789	-



## WHITE PERMA-SEAL TAPPER

CAT. NO.		SIZE	STD. BOX	STD. CTN.	WT./100	DRILL REFERENCES	
HEX	PFH					STRAIGHT	SDS HEX
-	2440	3/16" x 1-1/4"	100	500	1-1/2	2781	2793
-	2442	3/16" x 1-3/4"	100	500	1-1/2	2781	2793
-	2444	3/16" x 2-1/4"	100	500	1-1/2	2782	2793
-	2446	3/16" x 2-3/4"	100	500	1-1/2	2782	2793
-	2448	3/16" x 3-1/4"	100	500	1-1/2	2783	2794
-	2450	3/16" x 3-3/4"	100	500	1-1/2	2783	2794
-	2449	3/16" x 4"	100	500	1-1/2	2783	2794
2420	2460	1/4" x 1-1/4"	100	500	1-1/2	2785	2796

## WHITE PERMA-SEAL TAPPER - CONTINUED

CAT. NO.		SIZE	STD. BOX	STD. CTN.	WT./100	DRILL REFERENCES	
HEX	PFH					STRAIGHT	SDS HEX
2422	2462	1/4" x 1-3/4"	100	500	1-3/4	2785	2796
2424	2464	1/4" x 2-1/4"	100	500	2	2786	2796
2426	2466	1/4" x 2-3/4"	100	500	2-3/4	2786	2796
2428	2468	1/4" x 3-1/4"	100	500	3-1/4	2787	2797
2430	2470	1/4" x 3-3/4"	100	500	3-3/4	2787	2797
2435	2472	1/4" x 4"	100	500	4-1/2	2787	2797

## WHITE PERMA-SEAL TAPPER (MASTER PACKAGING)

CAT. NO.		SIZE	STD. BOX	STD. CARTON	WT./100	DRILL REFERENCES	
HWH	PFH					STRAIGHT	SDS HEX
-	9191	3/16" x 1 1/4"	2000	2000	1-1/2	2781	2793
-	9192	3/16" x 1 3/4"	2000	2000	1-1/2	2781	2793
-	9193	3/16" x 2 1/4"	1000	1000	1-1/2	2782	2793
-	9194	3/16" x 2 3/4"	1000	1000	1-1/2	2782	2793
-	9195	3/16" x 3 1/4"	1000	1000	1-1/2	2783	2794
-	9196	3/16" x 3 3/4"	1000	1000	1-1/2	2783	2794
-	9197	3/16" x 4"	1000	1000	1-1/2	2783	2794
9923	9951	1/4" x 1 1/4"	2000	2000	1-1/2	2785	2796
9924	9952	1/4" x 1 3/4"	2000	2000	1-3/4	2785	2796
-	9953	1/4" x 2 1/4"	2000	2000	2	2786	2796
-	9954	1/4" x 2 3/4"	2000	2000	2-3/4	2786	2796
9927	9955	1/4" x 3 1/4"	1000	1000	3-1/4	2787	2797
9928	9956	1/4" x 3 3/4"	1000	1000	3-3/4	2787	2797
9929	9957	1/4" x 4"	1000	1000	4-1/2	2787	2797
-	9958	1/4" x 5"	1000	1000	4-1/2	2788	-
-	9959	1/4" x 6"	500	500	5-1/2	2789	-

## WHITE PERMA-SEAL TAPPER FLANGE HEX HEAD, TRIM FLAT HEAD

CAT. NO.		SIZE	STD. BOX	STD. CARTON	WT./100	DRILL REFERENCES	
HWH	PFH					STRAIGHT	SDS HEX
8706*	8710	1/4" x 1 3/4"	100	500	1-3/4	2785	2796
8707*	8711	1/4" x 2 1/4"	100	500	2	2786	2796
8708*	8712	1/4" x 2 3/4"	100	500	2-3/4	2786	2796
8709*	8713	1/4" x 3 1/4"	100	500	3-1/4	2787	2797
-	8714	1/4" x 3 3/4"	100	500	3-3/4	2787	2797

\* Discontinued item once current stock is exhausted.



## SILVER PERMA-SEAL TAPPER

CAT. NO.		SIZE	STD. BOX	STD. CTN.	WT./100	DRILL REFERENCES	
HEX	PFH					STRAIGHT	SDS HEX
-	2498	3/16" x 1-1/4"	100	500	1-1/2	2781	2793
-	2500	3/16" x 1-3/4"	100	500	1-1/2	2781	2793
-	2501	3/16" x 2-1/4"	100	500	1-1/2	2782	2793
-	2502	3/16" x 2-3/4"	100	500	1-1/2	2782	2793
-	2503	3/16" x 3-1/4"	100	500	1-1/2	2783	2794
-	2504	3/16" x 3-3/4"	100	500	1-1/2	2783	2794
-	2505	3/16" x 4"	100	500	1-1/2	2783	2794
2486	2506	1/4" x 1-1/4"	100	500	1-1/2	2785	2796
2488	2507	1/4" x 1-3/4"	100	500	1-3/4	2785	2796
2490	2508	1/4" x 2-1/4"	100	500	2	2786	2796
2492	2509	1/4" x 2-3/4"	100	500	2-3/4	2786	2796
2494	2510	1/4" x 3-1/4"	100	500	3-1/4	2787	2797
2495	2511	1/4" x 3-3/4"	100	500	3-3/4	2787	2797
2496	2512	1/4" x 4"	100	500	4-1/2	2787	2797

**SILVER PERMA-SEAL TAPPER (MASTER PACKAGING)**

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HWH	PFH	SIZE	BOX	CARTON	WT./100	STRAIGHT	SDS HEX
-	8757	3/16" x 1 1/4"	2000	2000	1-1/2	2781	2793
-	8758	3/16" x 1 3/4"	2000	2000	1-1/2	2781	2793
-	8759	3/16" x 2 1/4"	1000	1000	1-1/2	2782	2793
-	8760	3/16" x 2 3/4"	1000	1000	1-1/2	2782	2793
-	8761	3/16" x 3 1/4"	1000	1000	1-1/2	2783	2794
-	8762	3/16" x 3 3/4"	1000	1000	1-1/2	2783	2794
-	8763	3/16" x 4"	1000	1000	1-1/2	2783	2794
8750	8764	1/4" x 1 1/4"	2000	2000	1-1/2	2785	2796
8751	8765	1/4" x 1 3/4"	2000	2000	1-3/4	2785	2796
8752	8766	1/4" x 2 1/4"	2000	2000	2	2786	2796
8753	8767	1/4" x 2 3/4"	2000	2000	2-3/4	2786	2796
8754	8768	1/4" x 3 1/4"	1000	1000	3-1/4	2787	2797
8755	8769	1/4" x 3 3/4"	1000	1000	3-3/4	2787	2797
8756	8770	1/4" x 4"	1000	1000	4-1/2	2787	2797

**SILVER PERMA-SEAL TAPPER FLANGE HEX HEAD, TRIM FLAT HEAD**

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HWH	PFH	SIZE	BOX	CARTON	WT./100	STRAIGHT	SDS HEX
8715	8719	1/4" x 1 3/4"	100	500	1-3/4	2785	2796
8716	8720	1/4" x 2 1/4"	100	500	2	2786	2796
8717	8721	1/4" x 2 3/4"	100	500	2-3/4	2786	2796
8718	8722	1/4" x 3 1/4"	100	500	3-1/4	2787	2797
	8723	1/4" x 3 3/4"	100	500	3-3/4	2787	2797



**ZINC PLATED CARBON STEEL TAPPER**

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HEX	PFH	SIZE	BOX	CTN.	WT./100	STRAIGHT	SDS HEX
5804	-	3/8" x 2"	100	500	5-1/4	5860	5866
5806	5852	3/8" x 3"	100	500	8-1/4	5860	5866
5808	5854	3/8" x 4"	100	500	11-1/2	5861	5868
-	5856	3/8" x 5"	100	100	13	5862	5868
-	5858	3/8" x 6"	100	100	15-1/2	5863	5868



**TYPE 304 STAINLESS STEEL TAPPER**

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HEX	PFH	SIZE	BOX	CTN.	WT./100	STRAIGHT	SDS HEX
4180	4185	3/16" x 1-1/4"	100	500	1-1/2	2781	2793
4181	4186	3/16" x 1-3/4"	100	500	1-1/2	2781	2793
4182	4187	3/16" x 2-1/4"	100	500	1-1/2	2782	2793
4183	4188	3/16" x 2-3/4"	100	500	1-1/2	2782	2793
4110	4118	1/4" x 1-1/4"	100	500	1-1/2	2785	2796
4112	4120	1/4" x 1-3/4"	100	500	1-3/4	2785	2796
4114	4123	1/4" x 2-1/4"	100	500	2	2786	2796
4116	4124	1/4" x 2-3/4"	100	500	2-3/4	2786	2796
-	4125	1/4" x 3-1/4"	100	500	3-1/4	2786	2796



**TYPE 304 STAINLESS STEEL TAPPER**

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HEX	PFH	SIZE	BOX	CTN.	WT./100	STRAIGHT	SDS HEX
2880	2887	1/4" x 1-1/4"	100	500	1-1/2	2894	2790
2881	2888	1/4" x 1-3/4"	100	500	1-3/4	2894	2790
2882	2889	1/4" x 2-1/4"	100	500	2	2895	2790
2883	2890	1/4" x 2-3/4"	100	500	2-3/4	2895	2790



**BRONZE TAPPER**

BRONZE PERMA-SEAL TAPPER FLANGE HEX HEAD, TRIM FLAT HEAD

CAT. NO.			STD.	STD.	DRILL REFERENCES		
HEX	PFH	SIZE	BOX	CTN.	WT./100	STRAIGHT	SDS HEX
9977	9975	1/4" x 1-3/4"	100	500	1-3/4	2785	2796
9978	9976	1/4" x 2-1/4"	100	500	2	2786	2796

**Installation Procedures**



Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" deeper than the embedment required. A TAPPER drill bit must be used. Blow the hole clean of dust and other material.



Select the TAPPER installation tool and drive socket to be used. Insert the head of TAPPER into the hex head socket or Phillips head driver. For softer concrete or masonry, set the drill motor to the "rotation only" mode.



Place the point of TAPPER through the fixture into the pre-drilled hole and drive the anchor in one steady continuous motion until it is fully seated at the proper embedment. The driver will automatically disengage from the head of the TAPPER.

Note: Do not select a length that will result in an embedment into the base material which is greater than 1-3/4" to 2". Most concrete screw anchors cannot be properly driven to a depth of more than 2", especially in denser base materials.

# Carbon Steel Perma-Seal



## Salt Spray Test (ASTM G 85-500 Hours)

HEX HEAD					PFH HEAD				
<b>Best</b>									
Powers TAPPER®									
Hilti									
ITW									
Elco									

## Kesternich Test (DIN 50018-15 Cycles)

HEX HEAD					PFH HEAD				
<b>Best</b>									
Powers TAPPER®									
Hilti									
ITW									
Elco									





# 410 and 304 Stainless Steel

## Salt Spray Test (ASTM G 85-500 Hours)

HEX HEAD					PFH HEAD				
<b>Better</b>									
Powers 410									
<b>Best</b>									
Powers 304									
ITW 410									
Elco 410									

## Kesternich Test (DIN 50018-15 Cycles)

HEX HEAD					PFH HEAD				
<b>Better</b>									
Powers 410									
<b>Best</b>									
Powers 304									
ITW 410									
Elco 410									

# Performance Data

## CARBON STEEL, PERMA-SEAL AND ZINC PLATED TAPPER

ULTIMATE LOAD CAPACITIES FOR CARBON STEEL TAPPERS IN NORMAL WEIGHT CONCRETE<sup>1,2</sup>

ANCHOR DIA. d. in. (mm)	MIN. EMBED. DEPTH h <sub>v</sub> in. (mm)	MINIMUM CONCRETE COMPRESSIVE STRENGTH (f'c)							
		2000 psi (13.8 MPa)		3000 psi (20.7 MPa)		4000 psi (27.6 MPa)		6000 psi (41.4 MPa)	
		Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)
3/16 (4.8)	1 (25.4)	160 (0.7)	700 (3.2)	260 (1.2)	700 (3.2)	360 (1.6)	700 (3.2)	510 (2.3)	980 (4.4)
	1 1/4 (31.8)	520 (2.3)	840 (3.8)	610 (2.7)	880 (4.0)	695 (3.1)	920 (4.1)	840 (3.8)	1,090 (4.9)
	1 3/8 (34.9)	700 (3.2)	910 (4.1)	780 (3.5)	900 (4.1)	855 (3.8)	920 (3.8)	1,060 (4.8)	1,135 (5.1)
	1 1/2 (38.1)	720 (3.2)	980 (4.1)	860 (3.9)	920 (4.1)	1,020 (4.6)	920 (4.1)	1,275 (5.7)	1,180 (5.3)
	1 3/4 (44.5)	1,180 (5.3)	920 (4.1)	1,340 (6.0)	940 (4.2)	1,500 (6.8)	920 (4.1)	1,570 (7.1)	1,290 (5.8)
	1 (25.4)	620 (2.8)	820 (3.7)	840 (3.8)	820 (3.7)	1,060 (4.8)	820 (3.7)	1,140 (7.1)	1,320 (5.9)
1/4 (6.4)	1 1/4 (31.8)	810 (3.6)	1,130 (5.1)	1,080 (4.9)	1,275 (5.7)	1,345 (6.1)	1,420 (6.4)	1,445 (6.5)	1,630 (7.3)
	1 3/8 (34.9)	905 (4.1)	1,280 (5.8)	1,195 (5.4)	1,350 (6.1)	1,485 (6.7)	1,420 (6.4)	1,615 (7.3)	1,805 (8.1)
	1 1/2 (38.1)	1,000 (4.5)	1,420 (6.4)	1,300 (5.9)	1,420 (6.4)	1,620 (7.3)	1,420 (6.4)	1,770 (8.0)	1,980 (8.9)
	1 3/4 (44.5)	1,620 (7.3)	1,480 (6.7)	1,680 (7.6)	1,480 (6.7)	1,750 (7.8)	1,480 (6.7)	2,195 (9.9)	2,260 (10.2)
	1 (25.4)	700 (3.2)	960 (4.3)	720 (3.2)	960 (4.3)	760 (3.4)	960 (4.3)	1,055 (4.7)	1,200 (5.4)
	1 1/4 (31.8)	905 (4.1)	1,475 (6.6)	1,030 (4.6)	1,715 (7.7)	1,150 (5.2)	1,950 (8.8)	1,570 (7.1)	2,000 (9.0)
3/8 (9.5)	1 1/2 (38.1)	1,110 (5.0)	1,980 (8.9)	1,320 (5.9)	1,980 (8.9)	1,540 (6.9)	1,980 (8.9)	2,120 (9.5)	2,700 (12.2)
	1 3/4 (44.5)	1,530 (6.8)	2,320 (10.4)	1,660 (7.5)	2,320 (10.4)	1,960 (8.8)	2,320 (10.4)	2,590 (11.7)	2,950 (13.3)

## CARBON STEEL & 410 STAINLESS STEEL TAPPER

ULTIMATE LOAD CAPACITIES IN GROUT FILLED BLOCK & SOLID BRICK

ANCHOR DIA. d. in. (mm)	MIN. EMBED. DEPTH h <sub>v</sub> in. (mm)	GROUT FILLED HOLLOW BLOCK		STRUCTURAL BRICK MASONRY	
		ASTM C 90			
		Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)
3/16 (4.8)	1 (25.4)	445 (2.0)	920 (4.1)	620 (2.8)	980 (4.4)
	1 1/4 (31.8)	530 (2.4)	1,020 (4.6)	1,070 (4.8)	1,090 (4.9)
	1 3/8 (34.9)	610 (2.7)	1,225 (5.5)	1,145 (5.2)	1,160 (5.2)
	1 1/2 (38.1)	610 (2.7)	1,225 (5.5)	1,220 (5.5)	1,230 (5.5)
	1 3/4 (44.5)	610 (2.7)	1,225 (5.5)	1,330 (6.0)	1,340 (6.0)
	1 (25.4)	720 (3.2)	1,150 (5.2)	940 (4.2)	1,720 (7.7)
1/4 (6.4)	1 1/4 (31.8)	880 (4.0)	1,270 (5.7)	1,160 (5.2)	1,840 (8.3)
	1 3/8 (34.9)	1,205 (5.4)	1,825 (8.2)	1,240 (5.6)	1,885 (8.5)
	1 1/2 (38.1)	1,205 (5.4)	1,825 (8.2)	1,320 (5.9)	1,930 (8.7)
	1 3/4 (44.5)	1,205 (5.4)	1,825 (8.2)	1,420 (6.4)	2,130 (9.6)
	1 (25.4)	840 (3.8)	1,150 (5.2)	1,020 (4.6)	1,820 (8.2)
	1 1/4 (31.8)	1,020 (4.6)	1,270 (5.7)	1,380 (6.2)	2,360 (10.6)
3/8 (9.5)	1 1/2 (38.1)	1,250 (5.6)	1,680 (7.6)	1,560 (7.0)	2,620 (11.8)
	1 3/4 (44.5)	1,480 (6.7)	1,825 (8.2)	1,640 (7.4)	2,740 (12.3)

Normal Weight Concrete:

- The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4.0 or greater to determine the allowable working load. Consideration of safety factors of 10.0 or higher may be necessary depending on the application such as life safety or overhead.
- Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.

Grout Filled Block & Solid Brick:

- The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 5.0 or greater to determine the allowable working load. Consideration of safety factors of 10.0 or higher may be necessary depending on the application such as life safety or overhead.
- Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.

## 304 STAINLESS STEEL TAPPER

ULTIMATE LOAD CAPACITIES IN NORMAL WEIGHT CONCRETE<sup>1,2</sup>

ANCHOR DIA. d. in. (mm)	MIN. EMBED. DEPTH h <sub>v</sub> in. (mm)	MINIMUM CONCRETE COMPRESSIVE STRENGTH (f'c)							
		2000 psi (13.8 MPa)		3000 psi (20.7 MPa)		4000 psi (27.6 MPa)		6000 psi (41.4 MPa)	
		Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)
1/4 (6.4)	1 (25.4)	500 (2.3)	1,180 (5.3)	600 (2.7)	1,180 (5.3)	700 (3.2)	1,180 (5.3)	700 (3.2)	1,180 (5.3)
	1 1/4 (31.8)	855 (3.8)	1,265 (5.7)	855 (3.8)	1,265 (5.7)	1,015 (4.6)	1,340 (6.0)	1,215 (5.5)	1,340 (6.0)
	1 1/2 (38.1)	1,140 (5.1)	1,340 (6.0)	1,220 (5.5)	1,340 (6.0)	1,320 (5.9)	1,340 (6.0)	1,320 (5.9)	1,340 (6.0)
	1 3/4 (44.5)	1,440 (6.5)	1,640 (7.4)	1,520 (6.8)	1,640 (7.4)	1,580 (7.1)	1,640 (7.4)	1,580 (7.1)	1,640 (7.4)

Normal Weight Concrete:

- The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4.0 or greater to determine the allowable working load. Consideration of safety factors of 10.0 or higher may be necessary depending on the application such as life safety or overhead.
- Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.

## 304 STAINLESS STEEL TAPPER

ULTIMATE LOAD CAPACITIES IN GROUT FILLED BLOCK & SOLID BRICK

ANCHOR DIA. d. in. (mm)	MIN. EMBED. DEPTH h <sub>v</sub> in. (mm)	GROUT FILLED HOLLOW BLOCK		STRUCTURAL BRICK MASONRY	
		ASTM C 90			
		Tension lbs (kN)	Shear lbs (kN)	Tension lbs (kN)	Shear lbs (kN)
1/4 (6.4)	1 (25.4)	575 (2.6)	920 (4.1)	580 (2.6)	1,150 (5.2)
	1 1/4 (31.8)	590 (2.7)	1,020 (4.6)	640 (2.9)	1,320 (5.9)
	1 1/2 (38.1)	720 (3.2)	1,225 (5.5)	760 (3.4)	1,380 (6.2)
	1 3/4 (44.5)	720 (3.2)	1,225 (5.5)	760 (3.4)	1,380 (6.2)

Grout Filled Block & Solid Brick:

- The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 5.0 or greater to determine the allowable working load. Consideration of safety factors of 10.0 or higher may be necessary depending on the application such as life safety or overhead.
- Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.

# Project Submittal

## TAPPER® Screw Anchor System

### PROJECT SUBMITTAL

Anchoring into Concrete and Masonry Substrates  
Suitable for Solid and Hollow Base Materials

A One-Piece Self-tapping Screw Style Mechanical Anchor  
Ideal for Most Light and Medium Duty Fastening Applications  
Does not Exert Expansion Forces into Base Material

Product Range: 3/16" to 3/8" in Diameter and 1-1/4" to 6" in Length  
Several Head Styles: Hex Head, Flat Head, Trim Head and Flange Head  
Material Availability: Zinc Plated and Perma-Seal Carbon Steel, 410 and 304 Stainless Steel



### POWERS FASTENERS, INC.

### PRODUCT APPROVALS

**Product Description**  
**General Information**  
**Installation Procedures**  
**Engineering Data**  
**Specifications**

Meets AC106 Criteria for Mechanical Screw Fasteners

### PROJECT SUBMITTAL / SUBSTITUTION REQUEST

To: \_\_\_\_\_ Project: \_\_\_\_\_

Specified Item: \_\_\_\_\_

### PRODUCT SUBMITTAL / SUBSTITUTION REQUESTED:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### SUBMITTED BY:

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Company: \_\_\_\_\_ Address: \_\_\_\_\_

Date: \_\_\_\_\_ Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

### FOR USE BY THE ARCHITECT AND/OR ENGINEER

Approved     Approves as Noted     Not Approved

(Please briefly explain why the product was not approved.)

\_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_ Date: \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CUT ALONG DOTTED LINE

## POWERS FASTENERS **BRANCH INFORMATION**

### USA LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Atlanta	5405 Buford Hwy Suite 410 Norcross, GA 30071-3984	Robert Brito	678-966-0000	678-966-9242
Boston	2 Powers Lane, Brewster, NY 10509	Jack Armour	800-524-3244	914-576-6483
Charlotte	349 L West Tremont Avenue, Charlotte, NC 28203	Bob Aurisy	704-375-5012	704-376-5517
Chicago	2472 Wisconsin Avenue, Downers Grove, IL 60515	Dan Gilligan	630-960-3156	630-960-3912
Dallas	10625 King Williams Drive, Dallas, TX 75220	Kyle Thuenemann	972-506-9258	972-506-9290
Denver	2475 West Second Street #35, Denver, CO 80223	Aaron Minnis	303-922-9202	303-922-9228
Detroit	21600 Wyoming Avenue, Oak Park, MI 48237	Glen Gaskill	248-543-8600	248-543-8601
Florida	9208 Palm River Road, Bldg. 3, Suite 305, Tampa, FL 33619	Mark Mamula	813-626-4500	813-626-4545
Houston	20 North Sampson Street, Houston, TX 77003	Chris Salisbury	713-228-1524	713-228-1528
Indianapolis	15290 Stony Creek Way, Noblesville, IN 46060	Bill Trainor	317-773-1668	317-773-1690
Kansas City / St Louis	716 East 16th Avenue, North Kansas City, MO 64116	Don James, Jr.	816-472-5038	816-472-5040
Los Angeles	2761 Dow Avenue, Tustin, CA 92780	Jack Stewart	714-731-2500	714-731-2566
Maryland	3137-B Pennsy Drive, Landover, MD 20785	Gary Engleman	301-773-1722	301-341-5119
Milwaukee	12020 W. Feerick Street, Milwaukee, WI 53222	Donn Raduenz	414-466-2400	414-466-3993
Minneapolis	351 Wilson Street, NE Minneapolis, MN 55413	Rick Gruye	612-331-3756	612-331-3549
Nashville/Memphis	221 Blanton Avenue, Nashville, TN 37210	Ira Liss	615-248-2667	615-248-2676
New Orleans	20 North Sampson Street, Houston, TX 77003	Cal Zenor	985-966-6490	713-228-1528
New York	2 Powers Lane, Brewster, NY 10509	John Partridge	914-235-6300	914-576-6483
Philadelphia	2 Powers Lane, Brewster, NY 10509	Curtis Fickert	800-524-3244	914-576-6483
Phoenix	3602 E. Southern Ave, Suite 5 Phoenix, AZ 85040	Craig Hering	602-431-8024	602-431-8027
Pittsburgh	1360 Island Avenue, McKees Rocks, PA 15136	Bill Dugan	412-771-3010	412-771-9858
Rochester	40 Harrison Street, Rochester, NY 14605	Mike Kolstad	585-288-2080	585-288-8732
Salt Lake City	2212 SW Temple #4, Salt Lake City, UT 84115	Ted McComb	801-466-3406	801-484-0731
San Francisco	28970 Hopkins Street, Suite B+C, Hayward, CA 94545	Frans Honig	510-293-1500	510-293-1505
Seattle	129 South Kenyon, Seattle, WA 98108	Darin Arnold/Jim Swink	206-762-5812	206-762-5817

### INTERNATIONAL LOCATIONS

CITY	ADDRESS	CONTACT	PHONE	FAX
Australia	Factory 3, 205 Abbotts Road, Dandenong, South Victoria 3175	Phil Rose	+61 3 8787 5888	+61 3 8787 5899
British Columbia	63 Fawcett Road Coquitlam, V3K 6V2	Distributor	604-540-0200	604-540-0212
Canada	6950 Edwards Blvd. Mississauga Ontario L5T 2W2	Mark Russell	905-673-7295	905-673-6490
Europe	Westrak 208, 1771 SV Wieringerwerf, Netherlands	Paul Geuvers	+31 888 769 377	+31 227 594 759
Manitoba	1810 Dublin Avenue Man. Winnipeg, R3H 0H3	Distributor	204-633-0064	204-694-1261
New Zealand	PO Box 302 076 North Harbour Auckland	Claye Sesto	+64 9415 2425	+64 9415 2627
Quebec	For name of nearest distributor call Powers Industries Ltd at	Mark Russell	905-673-7295	905-673-6490
Thailand	80/89 MOO4 Petchakasem Road, Bangkai Bangkok 10160	Chalee Surakavanichakorn	+661 826 5821	

### LATIN & CARIBBEAN DISTRIBUTION INQUIRIES

COUNTRY/REGION	ADDRESS	CONTACT	PHONE	FAX
Latin America	9208 Palm River Road, Ste 305, Tampa, Florida 33619	Michael Gaffigan	954-914-6665	813-626-4545

### LATIN & CARIBBEAN DISTRIBUTION

COUNTRY/REGION	ADDRESS	CONTACT	PHONE	FAX
Brazil	HARD, Rua Dr. Humberto Pinheiro Viera, 150 Lote B, 1 B Distrito Industrial, Joinville, Brazil		(55) 4749 7209	
Colombia	Electrogeno, S.A., Carrera 52 #71c-38, Bogota, Colombia		(57) 1 6600 9436	
Costa Rica	Electro Mechanics Supply, La Uruca Contiguo Banco Ntnl., De Costa Rica Condominio, Horizontal Bodega #9, San Jose, Costa Rica		(506) 2233-2595	
Dominican Republic	Calle Estancia Nueva #17 E Esquina Cul-De-Sac 9, San Geronimo, Santo Domingo	Rodfor Team	809-224-5615	809-472-8640
Ecuador	Av. Colon E 4 - 127 (1424), Entre Amazonas Y 9 De Octubre Los Rios #100 Y Manual Galecio	Sermaco - Quito (Casa Matriz) Sermaco - Guayaquil	593-2254-3703	593-2250-5013
Guatemala	Tecnofijaciones, 6 Avenue 8-56 Zona 9, Zona 9, Guatemala	Oscar Lucas Penagos	502-233-4-3478	-
Panama	Centro-Industrial, Via Cincuentenario, No. 7910, Ciudad Panama, Panama		(507) 302-8022	
Venezuela	Calle Sucre/Qta. Maudora, #1721 Entre Cec Acosta Y San Ignacio Chacao, Caracas	Distributor	58 212 264 1313	58 212 263 0219
Trinidad - Tobago	Ft. Farfan, 3-5 Ibis Avenue, Ibis Acres, San Juan	Derek Cumming	(868) 674-7896	

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**Powers Fasteners** 2 Powers Lane, Brewster, NY 10509 P: (914) 235-6300 F: (914) 576-6483

**Powers Fasteners Canada Ltd.** 6950 Edwards Boulevard Mississauga Ontario L5T-2W2 Canada  
P: (905) 673-7295 or 1-800-387-3480 F: (905) 673-6490

[www.powers.com](http://www.powers.com)

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