

GENERAL INFORMATION

DRIVE®

Pin Anchor

PRODUCT DESCRIPTION

The Drive is a one-piece, tamperproof, pre-formed anchor available in carbon steel for use in concrete. Tie-Wire Drive anchors are designed for suspended ceiling applications. The flat head (counter-sunk) style is particularly suited for wood-to-concrete anchoring. The round head style can be used for other applications requiring fast, permanent installations.

GENERAL APPLICATIONS AND USES

- Tamperproof Applications
- Suspended Ceilings

FEATURE AND BENEFITS

- Pre-expanded anchor design allows for easy installation
- Round And Flat Head Anchors Are Tamperproof

APPROVALS AND LISTINGS

- Tested in accordance with ASTM E488
- Underwriters Laboratory (UL Listed) – VFXT. EX1289

GUIDE SPECIFICATIONS

CSI Divisions: 03 16 00 - Concrete Anchors and 05 05 19 - Post-Installed Concrete Anchors. Pre-expanded anchors shall be Drive as supplied by DEWALT, Towson, MD. Anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

MATERIAL SPECIFICATIONS

Anchor Component	Component Material
Anchor Body	Heat Treated Carbon Steel
Zinc Plating	ASTM B633, SC1, Type III (Fe/Zn 5)

INSTALLATION SPECIFICATIONS

Round Head Drive

Dimension	Anchor Size, d			
	3/16"	1/4"	3/8"	1/2"
ANSI Drill Bit Size (in.)	3/16	1/4	3/8	1/2
Fixture Clearance Hole (in.)	1/4	5/16	7/16	9/16
Head Height (in.)	3/32	1/8	3/16	1/4
Head Width (in.)	3/8	1/2	3/4	1

Flat Head Drive

Dimension	Anchor Size, d	
	3/16"	1/4"
ANSI Drill Bit Size (in.)	3/16	1/4
Fixture Clearance Hole (in.)	1/4	5/16
Head Height (in.)	7/64	9/64
Head Width (in.)	3/8	1/2

Tie-Wire Drive

Dimension	Anchor Size, d
	1/4"
ANSI Drill Bit Size (in.)	1/4
Head Height (in.)	5/8
Tie-Wire Hole Diameter (in.)	13/64

SECTION CONTENTS

General Information..... 1
 Installation Specifications 1
 Performance Data..... 2
 Design Criteria (Allowable Stress Design)..... 2
 Ordering Information..... 3



HEAD STYLES

- Round Head
- Flat Head
- Tie-Wire

ANCHOR MATERIALS

- Zinc Plated Carbon Steel

ANCHOR SIZE RANGE (TYP.)

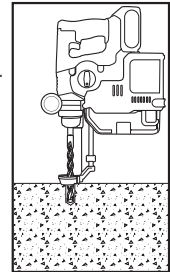
- 3/16" diameter to 1/2" diameter

SUITABLE BASE MATERIALS

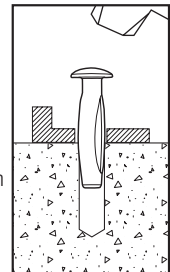
- Normal-weight concrete

Installation Guidelines

Drill a hole into the base material to a depth of at least 1/2" deeper than the embedment required. The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15. Remove dust and debris from the hole during drilling (e.g. dust extractor) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.



Drive the anchor into the hole until the head is firmly seated against the fixture. Be sure the anchor is driven to the required embedment depth. The tie-wire Drive should be driven in until the head is flush against the surface of the base material.



PERFORMANCE DATA

Ultimate Load Capacities for Mushroom and Flat Head Drive in Normal-Weight Concrete^{1,2}

Anchor Diameter d in.	Minimum Embedment Depth in.	Minimum Concrete Compressive Strength (f'c)					
		2,000 psi		4,000 psi		6,000 psi	
		Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
3/16	7/8	700	1,100	1,080	1,365	1,080	1,370
1/4	1-1/8	1,320	1,665	1,760	2,090	1,760	2,090
3/8	1-7/8	2,275	5,580	4,240	7,030	4,240	7,030
1/2	2-5/8	2,560	7,945	4,960	10,205	4,960	10,205

1. Tabulated load values are for anchors installed in concrete. Concrete compressive strength must be at the specified minimum at the time of installation.
2. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load. Consideration of safety factors of 10 or higher may be necessary depending upon the application such as life safety or overhead.

Allowable Load Capacities for Mushroom and Flat Head Drive in Normal-Weight Concrete^{1,2,3}

Anchor Diameter d in.	Minimum Embedment Depth in.	Minimum Concrete Compressive Strength (f'c)					
		2,000 psi		4,000 psi		6,000 psi	
		Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
3/16	7/8	175	275	270	340	270	345
1/4	1-1/8	330	415	440	525	440	525
3/8	1-7/8	570	1,395	1,060	1,760	1,060	1,760
1/2	2-5/8	640	1,985	1,240	2,550	1,240	2,550

1. Allowable load capacities listed are calculated using and applied safety factor of 4.0. Consideration of safety factors of 10 or higher may be necessary depending upon the application such as life safety or overhead.
2. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.
3. The tabulated load values are applicable to single anchors installed at critical edge and spacing distances. Allowable load capacities are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances.

Ultimate Load Capacities for Tie-Wire Drive in Normal-Weight Concrete^{1,2}

Anchor Diameter d in.	Minimum Embedment Depth in.	Minimum Concrete Compressive Strength (f'c)					
		2,000 psi		4,000 psi		6,000 psi	
		Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
1/4	1-1/8	1,320	1,100	1,760	1,560	1,760	1,560

1. Tabulated load values are for anchors installed in concrete. Concrete compressive strength must be at the specified minimum at the time of installation.
2. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load.

Allowable Load Capacities for Tie-Wire Drive in Normal-Weight Concrete^{1,2,3}

Anchor Diameter d in.	Minimum Embedment Depth in.	Minimum Concrete Compressive Strength (f'c)					
		2,000 psi		4,000 psi		6,000 psi	
		Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
1/4	1-1/8	330	275	440	390	440	390

1. Allowable load capacities listed are calculated using and applied safety factor of 4.0.
2. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.
3. The tabulated load values are applicable to single anchors installed at critical edge and spacing distances. Allowable load capacities are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances.

DESIGN CRITERIA (ALLOWABLE STRESS DESIGN)

Combined Loading

For anchors loaded in both shear and tension, the combination of loads should be proportioned as follows:

$$\left(\frac{N_u}{N_n}\right) + \left(\frac{V_u}{V_n}\right) \leq 1$$

Where: N_u = Applied Service Tension Load
 N_n = Allowable Tension Load

V_u = Applied Service Shear Load
 V_n = Allowable Shear Load

LOAD ADJUSTMENT FACTORS FOR SPACING AND EDGE DISTANCES¹

Anchor Installed in Normal-Weight Concrete

Anchor Dimension	Load Type	Critical Distance (Full Anchor Capacity)	Critical Load Factor	Minimum Distance (Reduced Capacity)	Minimum Load Factor
Spacing (s)	Tension and Shear	$S_{cr} = 10d$	$F_{NS} = F_{VS} = 1.0$	$S_{min} = 5d$	$F_{NS} = F_{VS} = 0.50$
Edge Distance (c)	Tension	$C_{cr} = 12d$	$F_{NC} = 1.0$	$C_{min} = 5d$	$F_{NC} = 0.80$
	Shear	$C_{cr} = 12d$	$F_{VC} = 1.0$	$C_{min} = 5d$	$F_{VC} = 0.50$

1. Allowable load values found in the performance data tables are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. When an anchor is affected by both reduced spacing and edge distance, the spacing and edge reduction factors must be combined (multiplied). Multiple reduction factors for anchor spacing and edge distance may be required depending on the anchor group configuration.

ORDERING INFORMATION

Round Head Drive

Cat. No.	Size	Drill Dia.	Min. Embed.	Std. Box	Std. Carton	Wt./100
3211	1/4" x 1-1/4"	1/4"	1-1/8"	100	1,000	1-3/4
3241	1/4" x 1-1/2"	1/4"	1-1/8"	100	1,000	2-1/2
3271	1/4" x 2"	1/4"	1-1/8"	100	1,000	3
3301	1/4" x 2-1/2"	1/4"	1-1/8"	100	1,000	3-3/4
3601	3/8" x 2"	3/8"	1-7/8"	25	250	7-1/2
3631	3/8" x 2-1/2"	3/8"	1-7/8"	25	250	8-1/2
3691	3/8" x 3-1/2"	3/8"	1-7/8"	25	250	11-3/4
3781	1/2" x 3"	1/2"	2-5/8"	25	125	25



Flat Head Drive

Cat. No.	Size	Drill Dia.	Min. Embed.	Std. Box	Std. Carton	Wt./100
3092	3/16" x 1-1/2"	3/16"	7/8"	100	1,000	1-1/4
3122	3/16" x 2"	3/16"	7/8"	100	1,000	1-3/4
3152	3/16" x 2-1/2"	3/16"	7/8"	100	1,000	2
3162	3/16" x 3"	3/16"	7/8"	100	1,000	2-1/2
3242	1/4" x 1-1/2"	1/4"	1-1/8"	100	1,000	2-1/2
3272	1/4" x 2"	1/4"	1-1/8"	100	1,000	3
3302	1/4" x 2-1/2"	1/4"	1-1/8"	100	1,000	3-3/4
3332	1/4" x 3"	1/4"	1-1/8"	100	1,000	4-1/2
3362	1/4" x 3-1/2"	1/4"	1-1/8"	100	1,000	5
3392	1/4" x 4"	1/4"	1-1/8"	100	500	5-3/4



Tie-Wire Drive (13/64" Tie-Wire Hole)

Cat. No.	Size	Drill Dia.	Min. Embed.	Std. Box	Std. Carton	Wt./100
3244	1/4" x 1 3/4" Master Pack	1/4"	1-1/8"	500	500	2-1/2
3245	1/4" x 1 3/4"	1/4"	1-1/8"	100	500	2-1/2
3250	Tie-Wire Setting Tool	-	-	1	1	1/4

