NCHORS

Threaded Expansion Anchor

C ř

Π nternally

I

GENERAL INFORMATION

STEEL DROPIN[™]

Internally Threaded Expansion Anchor

PRODUCT DESCRIPTION

The Steel Dropin is an all-steel, machine bolt anchor available in carbon steel and two types of stainless steel. It can be used in solid concrete, including lightweight concrete and concrete-filled steel deck members. The anchors can also be considered for hard stone and solid block base materials. A coil thread version for forming applications is also available.

GENERAL APPLICATIONS AND USES

• Suspending Conduit

Concrete Formwork

Suspended Lighting

• Fire Sprinkler Supports

Pipe Supports

· Cable Trays and Strut

FEATURES AND BENEFITS

- + Internally threaded anchor for easy bolt removability and service work
- + Flanged (lipped) version installs flush for easy inspection and standard embedment
- + Smooth wall dropin can be installed flush mounted or below the base material surface (optionally available with a knurled body)
- + Coil thread version accepts coil rod and typically used for concrete formwork applications

TESTING, APPROVALS AND LISTINGS

- Tested in accordance with ASTM E488 in uncracked concrete
- Underwriters Laboratory (UL Listed) File No. EX1289, see listing for sizes
- FM Approvals (Factory Mutual) File No. 3059197, see approval for sizes

GUIDE SPECIFICATIONS

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

SECTION CONTENTS

| General Information | 1 |
|--|---|
| Material Specifications | 2 |
| Installation Specifications | 2 |
| Performance Data (ASD) | 3 |
| Design Criteria (Allowable Stress Design) | 4 |
| Ordering Information | 6 |





FLANGE (LIPPED) DROPIN

THREAD VERSION

- UNC Coarse Thread
- Coil Thread

ANCHOR MATERIALS

- Zinc Plated Carbon Steel
- 303 Stainless Steel (Domestic Version)
- 304 Stainless Steel
- 316 Stainless Steel

ROD/ANCHOR SIZE RANGE (TYP.)

- 1/4" to 3/4" diameter UNC (Coarse Thread)
- 1/2" and 3/4" diameter Coil Thread

SUITABLE BASE MATERIALS

- Normal-weight Concrete
- Lightweight Concrete



MATERIAL SPECIFICATIONS

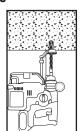
| Anchor Component | Carbon Steel | 300 Series Stainless Steel | Type 316 Stainless Steel |
|------------------|------------------------------------|-----------------------------------|--------------------------|
| Anchor Body | AISI 1008 | Type 303/304 Stainless Steel | Type 316 Stainless Steel |
| Plug | AISI 1018 | Type 303/304 Stainless Steel | Type 316 Stainless Steel |
| Zinc Plating | ASTM B633, SC1, Type III (Fe/Zn 5) | Not Applica | able |

INSTALLATION SPECIFICATIONS

| | | | Rod// | Anchor Dia | meter, d | | |
|---|---------|---------|---------|------------------------|----------|---------|------------------------|
| Parameter | 1/4" | 3/8" | 1/2" | 1/2" Coil Thread | 5/8" | 3/4" | 3/4" Coil Thread |
| ANSI Drill Bit Size, dbit (in.) Nominal Outside Diameter of Anchor, d (in.) | 3/8 | 1/2 | 5/8 | 5/8 | 7/8 | 1 | 1 |
| Maximum Tightening Torque, T _{max} (ftlbs.) | 5 | 10 | 20 | 20 | 40 | 80 | 80 |
| Internal Thread Size (UNC) | 1/4"-20 | 3/8"-16 | 1/2"-13 | 1/2"-6 | 5/8"-11 | 3/4"-10 | 3/4"-4-1⁄2 |
| Thread Depth (in.) | 7/16 | 5/8 | 13/16 | 13/16 | 1-3/16 | 1-3/8 | 1-3/8 |
| Flange Size, Lipped Version (in.) | 7/16 | 9/16 | 45/64 | - | - | - | - |
| Min. concrete thickness, h (in.) | 3 | 3 | 3-1/2 | 3-1/2 | 4-1/2 | 5-1/2 | 5-1/2 |
| Anchor Length, I (in.) Embedment, hv (in.) Hole depth, h₀ (in.) | 1 | 1-9/16 | 2 | 2 | 2-1/2 | 3-3/16 | 3-3/16 |

Installation Procedure

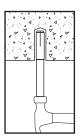
Using the proper drill bit size, drill a hole into the base material to the depth of embedment required. The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15. Do not over drill the hole unless the application calls for a subset anchor.



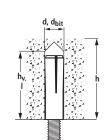
Remove dust and debris from the hole dust and debits from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling Insert the anchor into the hole and tap flush with surface.

Using a DEWALT setting tool specifically, set the anchor by driving the tool with a sufficient number of hammer blows until the shoulder of the tool is seated against the anchor. Note: anchor will not hold published load if shoulder of DEWALT setting tool does not seat against anchor.

If using a fixture, position it, insert bolt and tighten. Most overhead applications typically utilize threaded rod. Minimum thread engagement should be at least one anchor diameter.





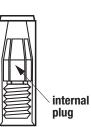


Nomenclature

h

hv

- d = Diameter of anchor = Diameter of drill bit dbit
 - Min. base material thickness =
 - = Minimum embedment depth
 - = Overall length of anchor
- $T_{max} =$ Maximum tightening torque



ECHANICAL ANCHORS

PERFORMANCE DATA (ASD)

Ultimate and Allowable Load Capacities for Steel Dropin in Normal-Weight Concrete^{1,2,3,45}

| Rod/Anchor | Minimum | | | Ten | sion | | | Shear | |
|------------|-----------|----------------------|-----------|-----------|----------------------|----------|------------|---------------------------|-----------|
| Diameter | Embedment | 2,000 psi (13.8 MPa) | | 4,000 psi | 4,000 psi (27.6 MPa) | | (41.4 MPa) | f'c ≥ 2000 psi (13.8 MPa) | |
| a | (mm) (mm) | Ultimate | Allowable | Ultimate | Allowable | Ultimate | Allowable | Ultimate | Allowable |
| in. | | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. |
| (mm) | | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) |
| 1/4 | 1 | 1,140 | 285 | 1,985 | 495 | 2,080 | 520 | 2,120 | 530 |
| (6.4) | (25.4) | (5.1) | (1.3) | (8.9) | (2.2) | (9.4) | (2.3) | (9.5) | (2.4) |
| 3/8 | 1-9/16 | 2,180 | 545 | 4,180 | 1,045 | 4,950 | 1,240 | 4,585 | 1,145 |
| (9.5) | (39.7) | (9.8) | (2.5) | (18.8) | (4.7) | (22.3) | (5.6) | (20.6) | (5.2) |
| 1/2 | 2 | 4,105 | 1,025 | 5,760 | 1,440 | 6,585 | 1,645 | 6,400 | 1,600 |
| (12.7) | (50.8) | (18.5) | (4.6) | (25.9) | (6.5) | (29.6) | (7.4) | (28.8) | (7.2) |
| 5/8 | 2-1/2 | 4,665 | 1,165 | 7,440 | 1,860 | 10,400 | 2,600 | 12,380 | 3,095 |
| (15.9) | (63.5) | (21.0) | (5.2) | (33.5) | (8.4) | (46.3) | (11.6) | (55.7) | (13.9) |
| 3/4 | 3-3/16 | 8,580 | 2,145 | 9,405 | 2,350 | 11,300 | 2,825 | 15,680 | 3,920 |
| (19.1) | (81.0) | (38.6) | (9.7) | (41.8) | (10.5) | (50.3) | (12.6) | (70.6) | (17.6) |

1. Tabulated load values are applicable to carbon and stainless steel anchors.

2. Tabulated load values are for anchors installed in uncracked concrete. Concrete compressive strength must be at the specified minimum at the time of installation.

3. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load.

4. Allowable load capacities for 3000 psi concrete may be calculated by reducing the tabulated allowable load values in 4000 psi concrete by 9 percent. Allowable load capacities for 5000 psi concrete may be calculated by reducing the tabulated allowable load values in 6000 psi concrete by 6 percent.

5. The tabulated capacities are for the steel dropin anchors which must be checked against the steel strength of the corresponding threaded rod or bolt size and type, the lowest load level controls.

Ultimate and Allowable Load Capacities for Steel Dropin in Lightweight Concrete^{1,2,3,4,5,6}

| Rod/Anchor Minimum | | | | Ten | sion | | | Shear | | |
|--------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|--|-----------|--|
| Diameter | Embedment | 2,000 psi (13.8 MPa) | | 4,000 psi (27.6 MPa) | | 6,000 psi (41.4 MPa) | | f ⁱ c ≥ 2000 psi (13.8 MPa) | | |
| a | (mm) (mm) | Ultimate | Allowable | Ultimate | Allowable | Ultimate | Allowable | Ultimate | Allowable | |
| in. | | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | Ibs. | |
| (mm) | | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) | (kN) | |
| 1/4 | 1 | 1,060 | 265 | 1,360 | 340 | 1,660 | 415 | 1,920 | 480 | |
| (6.4) | (25.4) | (4.8) | (1.2) | (6.1) | (1.5) | (7.5) | (1.9) | (8.6) | (2.2) | |
| 3/8 | 1-9/16 | 2,040 | 510 | 3,780 | 945 | 4,520 | 1,130 | 4,120 | 1,030 | |
| (9.5) | (39.7) | (9.1) | (2.3) | (17.0) | (4.3) | (20.3) | (5.1) | (18.5) | (4.6) | |
| 1/2 | 2 | 3,840 | 960 | 4,840 | 1,210 | 5,460 | 1,365 | 5,680 | 1,420 | |
| (12.7) | (50.8) | (17.1) | (4.3) | (21.8) | (5.4) | (24.6) | (6.1) | (25.6) | (6.4) | |
| 5/8 | 2-1/2 | 4,200 | 1,050 | 6,325 | 1,580 | 8,840 | 2,210 | 8,135 | 2,050 | |
| (15.9) | (63.5) | (18.7) | (4.7) | (28.1) | (7.0) | (39.8) | (9.9) | (36.5) | (9.1) | |
| 3/4 | 3-3/16 | 7,295 | 1,825 | 7,995 | 2,000 | 9,605 | 2,400 | 13,330 | 3,335 | |
| (19.1) | (81.0) | (32.5) | (8.1) | (35.6) | (8.9) | (42.7) | (10.7) | (59.3) | (14.8) | |

1. Tabulated load values are applicable to carbon and stainless steel anchors.

2. Tabulated load values are for anchors installed in uncracked concrete. Concrete compressive strength must be at the specified minimum at the time of installation.

3. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load.

4. Allowable load capacities for 3000 psi concrete may be calculated by reducing the tabulated allowable load values in 4000 psi concrete by 9 percent. Allowable load capacities for 5000 psi concrete may be calculated by reducing the tabulated allowable load values in 6000 psi concrete by 6 percent.

5. Allowable load capacities are multiplied by reduction factors found in the Design Criteria section when anchor spacing or edge distances are less than critical distances.

6. The tabulated capacities are for the steel dropin anchors which must be checked against the steel strength of the corresponding threaded rod or bolt size and type, the lowest load level controls.

UL Listings and FM Approvals for Supporting Fire Protection Services & Automatic Sprinkler Systems

| Listing/Approval | | Steel | Dropin, Smootl | n Wall | Steel Dropin, Flanged (Lipped) and Knurled Wall | | | |
|---|--------------------|--------------|----------------|--------|---|------|------|------|
| 3 1 | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1/4" | 3/8" | 1/2" |
| UL Max. Pipe Size | N/A | 4" | 8" | 12" | 12" | N/A | 4" | 8" |
| FM Max. Pipe Size | N/A | 4" | 8" | 12" | 12" | N/A | 4" | 8" |
| Underwriters Laboratories (UL Listed) – File No. EX1289 | | | | | | | | |
| FM Approvals (Factory N | lutual) – File No. | J.I. 3059197 | | | | | | |

TECHNICAL GUIDE – MECHANICAL ANCHORS © 2021 DEWALT – REV. D

Ultimate and Allowable Load Capacities for Steel Dropin in Lightweight Concrete over Steel Deck^{1,2,3,4,5,6,7}

| | | Lightweight Concrete over Steel Deck, f'c \ge 3,000 (20.7 MPa) | | | | | | | | | |
|------------------------|-------------------------|--|-------------------------|-----------------------|-------------------------|-----------------------|-------------------------|-----------------------|--------------|--|--|
| Rod/Anchor Diameter | Minimum Embedment | | Minimum 4-1 | /2" Wide Deck | | | Minimum 1-1 | /2" Wide Deck | | | |
| d Deptn | | Ultima | te Load | Allowa | Allowable Load Ultima | | te Load Allow | | able Load | | |
| in. in. (mm) (mm) | Tension Ibs. (kN) | Shear Ibs. (kN) | Tension Ibs. (kN) | Shear Ibs. (kN) | Tension Ibs. (kN) | Shear Ibs. (kN) | Tension Ibs. (kN) | Shear Ibs. (kN) | | | |
| 1/4 (6.4) | 1 (25.4) | 760 (3.4) | 2,040 (9.2) | 190 (0.8) | 510 (2.3) | 400 (1.8) | 2,040 (9.2) | 100 (0.4) | 510 (2.3) | | |
| 3/8 (9.5) | 1-9/16 (39.7) | 960 (4.3) | 2,760 (12.3) | 240 (1.1) | 690 (3.1) | 600 (2.7) | 2,760 (12.3) | 150 (0.7) | 690 (3.1) | | |
| 1/2 (12.7) | 2 (50.8) | 2,740 (12.3) | 5,560 (25.0) | 685 (3.1) | 1,390 (6.3) | - | - | - | - | | |

1. Tabulated load values are for carbon steel and stainless steel anchors installed in uncracked sand-lightweight concrete over steel deck. Concrete compressive strength must be at the specified minimum at the time of installation.

2. Allowable load capacities listed are calculated using and applied safety factor of 4.0.

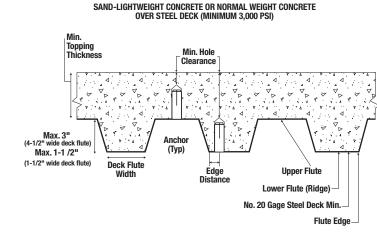
3. Allowable load capacities are multiplied by reduction factors found in the Design Criteria section when anchor spacing distances are less than critical distances.

4. For tabulated load capacities in 4-1/2" wide deck flute, the minimum lower flute edge distance is 1-1/4". Tabulated load capacities in 1-1/2" wide deck flute are for anchors installed in the center of the lower flute.

5. For installations into the lower flute the minimum topping thickness is 2 inches. For installations into the upper flute, the minimum topping thickness is 3" for 1/4-inch and 3/8-inch diameter anchors; and 3-1/2" for 1/2-inch diameter anchors. Allowable shear loads for anchors installed through steel deck into concrete may be applied in any direction.

6. Anchors can be considered for use in the lower or upper flute of the steel deck provided the installation specifications and procedures are maintained.

7. The tabulated capacities are for the steel dropin anchors which must be checked against the steel strength of the corresponding threaded rod or bolt size and type, the lowest load level controls.



DESIGN CRITERIA (ALLOWABLE STRESS DESIGN)

Combined Loading

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

$$\left(\frac{Nu}{Nn}\right) + \left(\frac{Vu}{Vn}\right) \le 1$$

 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 DISTANCES

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 | $s_{\text{cr}}=3.0h_{\text{v}}$ | $F_{\text{NS}}=F_{\text{VS}}=1.0$ | $S_{min} = 1.5 h_v$ | $F_{NS}=F_{VS}\ =0.50$ |
| Edge Distance (a) | Tension | $c_{cr} = 14d$ | Fnc= 1.0 | $C_{min} = 7d$ | Fnc = 0.90 |
| Edge Distance (c) | Shear | $c_{cr} = 14d$ | Fvc = 1.0 | $C_{min} = 7d$ | Fvc = 0.50 |

Where:

Anchor Installed in Lightweight Concrete

| | <u> </u> | | | | |
|---------------------|-------------------|---|-------------------------|--|--------------------------|
| Anchor Dimension | Load Type | Critical Distance (Full Anchor Capacity) | Critical Load Factor | Minimum Distance (Reduced Capacity) | Minimum Load Factor |
| Spacing (s) | Tension and Shear | $s_{cr} = 3.0 h_{v}$ | $F_{NS} = F_{VS} = 1.0$ | Smin = 1.5hv | $F_{NS} = F_{VS} = 0.50$ |
| | Tension | $c_{cr} = 14d$ | $F_{NC} = 1.0$ | $c_{min} = 7d$ | $F_{\text{NC}} = 0.80$ |
| Edge Distance (c) | Shear | $c_{cr} = 14d$ | $F_{VC} = 1.0$ | $c_{\text{min}} = 7d$ | $F_{VC} = 0.50$ |

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.

– REV. D

TECHNICAL GUIDE - MECHANICAL ANCHORS ©2021 DEWALT

LOAD ADJUSTMENT FACTORS FOR NORMAL-WEIGHT AND LIGHTWEIGHT CONCRETE

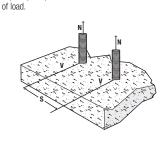
Spacing, Tension (F_{NS}) & Shear (F_{VS})

DEWALT

ANCHORS & FASTENERS

Dia. (in.) 1/4 3/8 1/2 5/8 3/4 **h**_v (in.) 1 1-1/2 2 2-1/2 3 3 9 Scr (in.) 4-1/2 6 7-1/2 Smin (in.) 1-1/2 2-1/4 3 3-3/4 4-1/2 1 - 1/20.50 2-1/4 0.75 0.50 Spacing Distance (inches) 0.67 0.50 3 1.00 _ _ 3-3/4 1.00 0.83 0.63 0.50 0.89 0.67 4 1.00 0.53 4-1/2 1.00 1.00 0.75 0.60 0.50 5 1.00 1.00 0.83 0.67 0.56 6 1.00 1.00 1.00 0.80 0.67 7-1/2 1.00 1.00 1.00 1.00 0.83 9 1.00 1.00 1.00 1.00 1.00

Notes: For anchors loaded in tension and shear, the critical spacing (s_{e_2}) is equal to 3 embedment depths (3h) at which the anchor achieves 100% of load. Minimum spacing (s_{min}) is equal to 1.5 embedment depths (1.5h) at which the anchor achieves 50%



Edge Distance, Tension (F_{NC}) (Normal-Weight concrete only)

| Dia | (in.) | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
|---------------------------|------------|-------|-------|-------|-------|--------|
| | (in.) | 3-1/2 | 5-1/4 | 7 | 8-3/4 | 10-1/2 |
| | <u>. ,</u> | | 2-5/8 | | 4-3/8 | 5-1/4 |
| Cmin (in.) | | 1-3/4 | 2-3/8 | 3-1/2 | 4-3/0 | 3-1/4 |
| | 1-3/4 | 0.90 | - | - | - | - |
| | 2 | 0.91 | - | - | - | - |
| 8 | 2-5/8 | 0.95 | 0.90 | - | - | - |
| ģ | 3 | 0.97 | 0.91 | - | - | - |
| Ē | 3-1/2 | 1.00 | 0.93 | 0.90 | - | - |
| ė, | 4-3/8 | 1.00 | 0.97 | 0.93 | 0.90 | - |
| anc | 5-1/4 | 1.00 | 1.00 | 0.95 | 0.92 | 0.90 |
| list | 6 | 1.00 | 1.00 | 0.97 | 0.94 | 0.91 |
| Edge Distance, c (inches) | 7 | 1.00 | 1.00 | 1.00 | 0.96 | 0.93 |
| Ē | 8 | 1.00 | 1.00 | 1.00 | 0.98 | 0.95 |
| | 8-3/4 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 |
| | 10-1/2 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

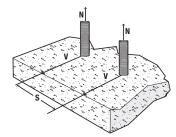
Notes: For anchors loaded in tension, the critical edge (c_o) is equal to 14 anchors diameters (14d) at which the anchor achieves 100% of load. Minimum edge distance (c_{min}) is equal to 7 anchor diameters (7d) at which the anchor achieves 90% of load for normal-weight concrete and 80% of load for light-weight concrete.

Edge Distance, Tension (F_{NC}) (Lightweight concrete only) Dia. (in.) 1/4 3/8 1/2

| Cor | (in.) | 3-1/2 | 5-1/4 | 7 | 8-3/4 | 10-1/2 | |
|-----------|--------|-------|-------|-------|-------|--------|--|
| Cmin | (in.) | 1-3/4 | 2-5/8 | 3-1/2 | 4-3/8 | 5-1/4 | |
| | 1-3/4 | 0.80 | - | - | - | - | |
| | 2 | 0.83 | - | - | - | - | |
| (sa | 2-5/8 | 0.90 | 0.80 | - | - | - | |
| (inches) | 3 | 0.94 | 0.83 | - | - | - | |
| c (j. | 3-1/2 | 1.00 | 0.87 | 0.80 | - | - | |
| | 4-3/8 | 1.00 | 0.93 | 0.85 | 0.80 | - | |
| Distance, | 5-1/4 | 1.00 | 1.00 | 0.90 | 0.84 | 0.80 | |
| Dist | 6 | 1.00 | 1.00 | 0.94 | 0.87 | 0.83 | |
| l l | 7 | 1.00 | 1.00 | 1.00 | 0.92 | 0.87 | |
| Edge | 8 | 1.00 | 1.00 | 1.00 | 0.97 | 0.90 | |
| | 8-3/4 | 1.00 | 1.00 | 1.00 | 1.00 | 0.93 | |
| | 10-1/2 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |

5/8

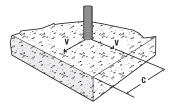
3/4



Edge Distance, Shear (Fvc)

| Dia | . (in.) | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 |
|------------------|---------|-------|-------|-------|-------|--------|
| Co | (in.) | 3-1/2 | 5-1/4 | 7 | 8-3/4 | 10-1/2 |
| Cmin (in.) | | 1-3/4 | 2-5/8 | 3-1/2 | 4-3/8 | 5-1/4 |
| | 1-3/4 | 0.50 | - | - | - | - |
| | 2 | 0.57 | - | - | - | - |
| | 2-5/8 | 0.75 | 0.50 | - | - | - |
| es) | 3 | 0.86 | 0.57 | - | - | - |
| (inches) | 3-1/2 | 1.00 | 0.67 | 0.50 | - | - |
| E. | 4-3/8 | 1.00 | 0.83 | 0.63 | 0.50 | - |
| ų. | 5 | 1.00 | 0.95 | 0.71 | 0.57 | - |
| Edge Distance, c | 5-1/4 | 1.00 | 1.00 | 0.75 | 0.60 | 0.50 |
| Dist | 6 | 1.00 | 1.00 | 0.86 | 0.69 | 0.57 |
| je [| 7 | 1.00 | 1.00 | 1.00 | 0.80 | 0.67 |
| Edi | 8 | 1.00 | 1.00 | 1.00 | 0.91 | 0.76 |
| | 8-3/4 | 1.00 | 1.00 | 1.00 | 1.00 | 0.83 |
| | 10 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| | 10-1/2 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Notes: For anchors loaded in shear, the critical edge distance ($c_{\rm c}$) is equal to 14 anchor diameters (14d) at which the anchor achieves 100% of load. Minimum edge distance ($c_{\rm min}$) is equal to 7 anchor diameters (7d) at which the anchor achieves 50% of load.



TECHNICAL GUIDE - MECHANICAL ANCHORS © 2021 DEWALT - REV. D

5



ORDERING INFORMATION

Carbon Steel Smooth Wall Dropin

| Cat. No. | Domestic Cat. No. | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|-----------|----------------------|--------------------|----------------|---------------------|-----------|-------------|
| 06304-PWR | 6304USA-PWR | 1/4" | 1" | 3/8" | 100 | 1000 |
| 06306-PWR | 6306USA-PWR | 3/8" | 1-9/16" | 1/2" | 50 | 500 |
| 06308-PWR | 6308USA-PWR | 1/2" | 2" | 5/8" | 50 | 300 |
| 06320-PWR | 6320USA-PWR | 5/8" | 2-1/2" | 7/8" | 25 | 125 |
| 06312-PWR | 6312USA-PWR | 3/4" | 3-13/16" | 1" | 10 | 50 |

Carbon Steel Flanged Dropin (Lipped)

| Cat. No. | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|-----------|------------------------|----------------|------------------|-----------|-------------|
| 06324-PWR | 1/4" | 1" | 3/8" | 100 | 1,000 |
| 06326-PWR | 3/8" | 1-9/16" | 1/2" | 50 | 500 |
| 06328-PWR | 1/2" | 2" | 5/8" | 50 | 300 |

Carbon Steel Knurled Wall Dropin

| Cat. No. | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|-----------|-----------------|----------------|------------------|-----------|-------------|
| 06340-PWR | 1/4" | 1" | 3/8" | 100 | 1,000 |
| 06342-PWR | 3/8" | 1-9/16" | 1/2" | 50 | 500 |
| 06344-PWR | 1/2" | 2" | 5/8" | 50 | 250 |

Type 300 Series Stainless Steel Dropin

| Cat. No. (Type 304) | Domestic Cat. No. (Type 303) | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|------------------------|------------------------------------|--------------------|----------------|---------------------|-----------|-------------|
| 06204-PWR | 6204USA-PWR | 1/4" | 1" | 3/8" | 100 | 1000 |
| 06206-PWR | 6206USA-PWR | 3/8" | 1-9/16" | 1/2" | 50 | 500 |
| 06208-PWR | 6208USA-PWR | 1/2" | 2" | 5/8" | 50 | 300 |
| 06210-PWR | 6210USA-PWR | 5/8" | 2-1/2" | 7/8" | 25 | 125 |
| 06212-PWR | 6212USA-PWR | 3/4" | 3-13/16" | 1" | 10 | 50 |

Type 316 Stainless Steel Dropin

| Cat. No. | Domestic Cat. No. | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|-----------|----------------------|--------------------|----------------|---------------------|-----------|-------------|
| 06224-PWR | 6224USA-PWR | 1/4" | 1" | 3/8" | 100 | 1000 |
| 06226-PWR | 6226USA-PWR | 3/8" | 1-9/16" | 1/2" | 50 | 500 |
| 06228-PWR | 6228USA-PWR | 1/2" | 2" | 5/8" | 50 | 300 |
| 06230-PWR | 6230USA-PWR | 5/8" | 2-1/2" | 7/8" | 25 | 125 |
| 06232-PWR | 6232USA-PWR | 3/4" | 3-13/16" | 1" | 10 | 50 |

Carbon Steel Coil Thread Dropin

| Cat. No. | Rod/Anchor Size | Overall Length | Outside Diameter | Pack Qty. | Carton Qty. |
|-----------|-----------------|-----------------------|------------------|-----------|-------------|
| 06330-PWR | 1/2" | 2" | 5/8" | 50 | 300 |
| 06332-PWR | 3/4" | 3-3/16" | 1" | 10 | 50 |

Setting Tools for Steel Dropin

| Cat. No. | 06305-PWR | 06307-PWR | 06309-PWR | 06311-PWR | 06313-PWR |
|------------------------|-----------|-----------|-----------|-----------|-----------|
| Rod/Anchor Size | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" |
| Pin Length | 39/64" | 61/64" | 1-3/16" | 1-5/16" | 1-61/64" |
| Pack Qty. | 1 | 1 | 1 | 1 | 1 |

Accu-Bit[™] Drill Stop for Steel Dropin

| Cat. No. | Rod/Anchor Size | Drill Stop | Pack Qty. |
|----------|-------------------------------------|------------|-----------|
| DWA5493 | 1/2" Accu-Bit for 3/8" Steel Dropin | 1-13/16" | 1 |
| DWA5495 | 5/8" Accu-Bit for 1/2" Steel Dropin | 2-3/8" | 1 |















- REV. D

TECHNICAL GUIDE - MECHANICAL ANCHORS ©2021 DEWALT