GENERAL INFORMATION

CRETE-FLEX®

410 Stainless Steel Concrete and Masonry Fasteners

PRODUCT DESCRIPTION

The Crete-Flex anchor is a 410 stainless steel screw anchor for light to medium duty applications in concrete and masonry block base materials. Crete-Flex anchors utilize more robust threads for enhanced thread engagement and "V" notches for efficient tapping. These features provide reduced installation torque and increased performance. Crete-Flex anchors feature a Stalgard coating and provide enhanced corrosion resistance over carbon steel fasteners.

GENERAL APPLICATIONS AND USES

- Window Frames
- Screens and Utilities
- Light Duty Industrial Applications
- Metal Door Frames
- Shutters and Guards
- Light Duty Fixtures

FEATURES AND BENEFITS

+ Special heat treament provides increased ductility and corrosison resistance
+ Larger-than-normal root diameters offers improved performance, including higher shear strengths
+ Stalgard® coating provides 1000 hours of salt spray protection when tested in accordance with ASTM B117
+ Available in various head styles to fit the intended application

APPROVALS AND LISTINGS

- Miami-Dade County Notice of Acceptance (NOA) No. 19-0619.01
- Florida Statewide Product Approval FL29068.1

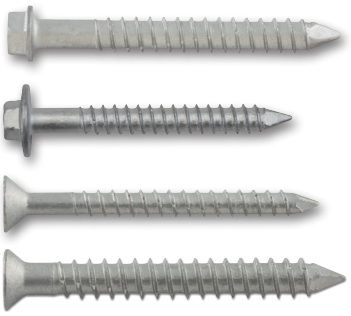
GUIDE SPECIFICATIONS

CSI Divisions: 03 16 00 - Concrete Anchors, 04 05 19.16 - Masonry Anchors and 05 05 19 - Post-Installed Concrete Anchors. Screw anchors shall be Crete-Flex as supplied by DEWALT, Towson, MD. Concrete screw anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

MATERIAL SPECIFICATIONS

Anchor Component	Specification
Anchor Body	Type 410 Stainless Steel
Coating/Plating/Finish	Stalgard® 1000 hour rating for ASTM B117 salt spray test

SECTION CONTENTS



CRETE-FLEX

HEAD STYLES

- Hex Washer Head
- Hex Flange Head
- Phillips Flat Head
- Phillips TrimFit® Flat Head

ANCHOR MATERIALS

- Type 410 Stainless Steel with Stalgard® Coating

ANCHOR SIZE RANGE

- 3/16" diameter x 1-1/4" to 3-1/4" lengths
- #14 diameter x 1-1/4" to 6" lengths

SUITABLE BASE MATERIALS

- Normal-weight Concrete
- Grouted Concrete Masonry
- Hollow Concrete Masonry (CMU)

INSTALLATION SPECIFICATIONS

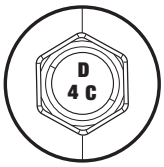
Crete-Flex 410 Stainless Steel Carbon Steel Hex Head

Dimension	Nominal Anchor Diameter					
	3/16" HWH	3/16" PFH	#14 HWH	#14 HFH	#14 PFH	#14 TFH
Drill Bit Size (in)	5/32 UltraCon+ Bit	5/32 UltraCon+ Bit	7/32 ANSI	7/32 ANSI	7/32 ANSI	7/32 ANSI
Typ. Fixture Clearance hole (in)	1/4	1/4	5/16	5/16	5/16	5/16
Head Height[1] (in.)	7/64	5/32	9/64	7/32	5/32	9/64
Head Width (in)	1/4	13/32	5/16	5/16	1/2	13/32
Washer O.D. (in)	11/32	N/A	13/32	5/8	N/A	N/A
Washer Thickness (in)	1/32	N/A	3/64	N/A	N/A	N/A
Hex Driver (in)/ Phillips Driver	1/4	#3	5/16	5/16	#3	#3

1. Head Height of Hex Flange Head Anchors include the thickness of the flange.

Crete-Flex Identification

Hex Washer Head



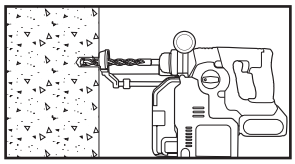
Hex Flange Head

Phillips Flat Head

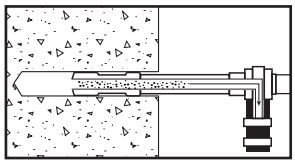
TrimFit Flat Head

The head markings consist of a "D" for the DEWALT brand, the number "4" for the 410 series stainless steel classification, and the length code. TrimFit flat head variations also include a star

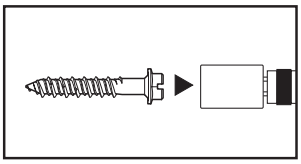
Installation Instruction



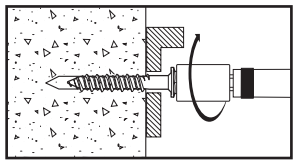
Step 1
Using the proper drill bit size, drill a hole into the base material to the required depth, h_o, which is a 1/4-inch deeper than the minimum embedment depth, h_{nom}.



Step 2
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.



Step 3
Attach a UltraCon+ installation socket tool for the selected anchor size to a percussion drill and set the drill to rotary only mode. Mount the screw anchor head into the socket. For flat head versions a bit tip must be used with the socket tool.



Step 4
Place the point of the Crete-Flex 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 Crete-Flex.

Crete-Flex Length Code Identification System

Length ID marking on head		☐	A	B	C	D	E	F	G	H
Overall anchor length ℓ_{anch} (inches)	From	1"	1-1/2"	2"	2-1/2"	3-1/4"	3-1/2"	4"	4-1/2"	5-1/2"
	Up to but not including	1-1/2"	2"	2-1/2"	3-1/4"	3-1/2"	4"	4-1/2"	5-1/2"	6-1/2"

Installation Table for Crete-Flex in Concrete[1]

Anchor Property/ Setting Information	Notation	Units	Nominal Anchor Diameter	
			3/16	#14
Anchor Shank Diameter	d_a	in.	0.160	0.215
Typ. diameter of hole clearence in fixture	d_h	in.	1/4	5/16
Nominal drill bit diameter[2]	d_{bit}	in.	5/32 UltraCon+ Bit	7/32 ANSI
Bit tolerance range	-	in.	0.170 to 0.176	0.229 to 0.237
Minimum nominal embedment depth[3]	h_{nom}	in.	1-1/4	1
Minimum hole depth	h_o	in.	Embedment + 1/4	Embedment + 1/4
Hex Head Socket size	-	in.	1/4	5/16
Phillips Bit Size	-	No.	#3	#3

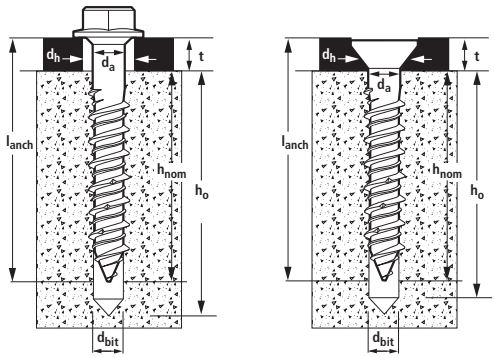
1. The minimum base material thickness must be $1.5h_{nom}$ or 3", whichever is greater.
2. 3/16" diameter Crete-Flex anchors require the use of a special tolerance UltraCon+ Drill Bit.
3. See performance data tables for additional embedment depths.

Installation Table for Crete-Flex in Masonry

Anchor Property/ Setting Information	Notation	Units	Nominal Anchor Diameter	
			3/16	#14
Anchor Shank Diameter	d_a	in.	0.160	0.215
Typ. diameter of clearence hole in fixture	d_h	in.	1/4	5/16
Nominal drill bit diameter[1]	d_{bit}	in.	5/32 UltraCon+ Bit	7/32 ANSI
Bit tolerance range	-	in.	0.170 to 0.176	0.229 to 0.237
Minimum nominal embedment depth	h_{nom}	in.	1-1/4	1-1/4
Minimum hole depth	h_o	in.	Embedment + 1/4	Embedment + 1/4
Hex Head Socket size	-	in.	1/4	5/16
Phillips Bit Size	-	No.	#3	#3

1. 3/16" diameter Crete-Flex anchors require the use of a special tolerance UltraCon+ drill bit.

Anchor Detail



Nomenclature

d_a = Diameter of anchor
d_{bit} = Diameter of drill bit
d_h = Diameter of fixture clearance hole
h_{nom} = Minimum embedment depth
h = Base material thickness
The minimum value of h should be $1.5h_{nom}$ or 3" whichever is greater
h_o = Minimum hole depth

PERFORMANCE DATA

Ultimate Load Capacities for Crete-Flex in Normal Weight Concrete[1,2]

Nominal Anchor Diameter	Min. Embed. (in.)	Min. Edge Dist. (in.)	Min. Spacing (in.)	Minimum Concrete Compressive Strength							
				2,000 psi		2,500 psi		3,000 psi		4,000 psi	
				Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)
3/16"	1-1/4	2-1/2	3	850	1,575	900	1,665	940	1,675	980	1,675
	1-1/2			1,200	1,800	1,265	1,900	1,325	1,915	1,380	1,915
	1-3/4			1,360	1,800	1,435	1,900	1,505	1,915	1,565	1,915
#14	1	1	6	535	445	575	480	610	500	645	500
	1	1-3/4		585	765	630	825	670	860	710	860
	1	2-1/2		675	945	725	1,015	775	1,060	815	1,060
	1-3/4	1	1-1/2	1,115	-	1,200	-	1,280	-	1,350	-
	1-3/4		3	1,115	635	1,200	680	1,280	710	1,350	710
	1-3/4		6	1,115	1,105	1,200	1,185	1,280	1,240	1,350	1,240
	1-3/4	1-3/4	6	1,165	1,600	1,250	1,720	1,330	1,800	1,405	1,800
	1-3/4	2-1/2	3	1,115	1,660	1,200	1,785	1,280	1,870	1,350	1,870
	1-3/4		6	1,165	2,295	1,250	2,470	1,330	2,580	1,405	2,580
	2	1	6	1,390	1,105	1,495	1,185	1,590	1,240	1,675	1,240
	2	1-3/4		1,520	1,600	1,635	1,720	1,740	1,800	1,835	1,800
	2	2-1/2		1,520	2,295	1,635	2,470	1,740	2,580	1,835	2,580

1. Tabulated load values are for anchors installed in uncracked 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 and higher may be necessary depending upon the application such as life safety or overhead.

Allowable Load Capacities for Crete-Flex in Normal Weight Concrete[1,2]

Nominal Anchor Diameter	Min. Embed. (in.)	Min. Edge Dist. (in.)	Min. Spacing (in.)	Minimum Concrete Compressive Strength							
				2,000 psi		2,500 psi		3,000 psi		4,000 psi	
				Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)
3/16"	1-1/4	2-1/2	3	215	395	225	415	235	420	245	420
	1-1/2			300	450	315	475	330	480	345	480
	1-3/4			340	450	360	475	375	480	390	480
#14	1	1	6	135	110	145	120	155	125	160	125
	1	1-3/4		145	190	160	205	170	215	180	215
	1	2-1/2		170	235	180	255	195	265	205	265
	1-3/4	1	1-1/2	280	-	300	-	320	-	340	-
	1-3/4		3	280	160	300	170	320	180	340	180
	1-3/4		6	280	275	300	295	320	310	340	310
	1-3/4	1-3/4	6	290	400	315	430	335	450	350	450
	1-3/4	2-1/2	3	280	415	300	445	320	470	340	470
	1-3/4		6	290	575	315	620	335	645	350	645
	2	1	6	350	275	375	295	400	310	420	310
	2	1-3/4		380	400	410	430	435	450	460	450
	2	2-1/2		380	575	410	620	435	645	460	645

1. Tabulated load values are for anchors installed in uncracked concrete. Concrete compressive strength must be at the specified minimum at the time of installation.
2. Allowable load capacities listed are calculated using an applied safety factor of 4.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.

Ultimate and Allowable Load Capacities for Crete-Flex in Grouted and Hollow Concrete Masonry[1,2]

Nominal Anchor Diameter	Min. Embed. (in.)	Min. Edge Dist. (in.)	Min. Spacing (in.)	Ultimate Load		Allowable Load	
				Tension (lbs.)	Shear (lbs.)	Tension (lbs.)	Shear (lbs.)
3/16"	1-1/4	2-1/2	3	765	1305	155	260
#14	1-1/4	1	6	780	420	155	85
	1-1/4	1-3/4		1,160	1,320	230	265
	1-1/4	2-1/2	1-1/2	505	1,065	100	215
	1-1/4		3	505	1,235	100	245
	1-1/4		6	1,220	1,320	245	265
	1-5/8	1	6	1,240	540	250	110

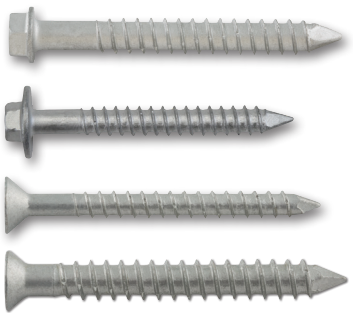
1. Tabulated load values are for anchors installed in minimum 8" wide, Type II, lightweight, medium-weight or normal-weight concrete masonry units conforming to ASTM C-90. Mortar must be minimum Type N.
2. Allowable load capacities listed are calculated using an applied safety factor of 5.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.

ORDERING INFORMATION

Crete-Flex

Cat. No.				Screw Size	Standard Box	Standard Carton
HWH	HFH	PFH	TFH			
DFM4EMH500	-	DFM4EMF610	-	3/16" X 1-1/4"	100	500
DFM4EMH510	-	DFM4EMF620	-	3/16" X 1-3/4"	100	500
DFM4EMH530	-	DFM4EMF630	-	3/16" X 2-1/4"	100	500
DFM4EMH550	-	DFM4EMF640	-	3/16" X 2-3/4"	100	500
-	-	DFM4EMF650	-	3/16" X 3-1/4"	100	500
DFM4EMF310	-	DFM4EMF690	-	#14 X 1-1/4"	100	500
DFM4EMF330	DFM4EMF340	DFM4EMF710	DFM4EMF510	#14 X 1-3/4"	100	500
DFM4EMF350	DFM4EMF360	DFM4EMF730	DFM4EMF530	#14 X 2-1/4"	100	500
DFM4EMF370	-	DFM4EMF750	DFM4EMF550	#14 X 2-3/4"	100	500
DFM4EMF390	-	DFM4EMF770	-	#14 X 3-1/4"	100	500
DFM4EMF410	-	DFM4EMF790	-	#14 X 3-3/4"	100	500
DFM4EMF430	-	DFM4EMF810	-	#14 X 4"	100	500
DFM4EMF450	-	DFM4EMF830	-	#14 X 5"	100	500
DFM4EMF470	-	DFM4EMF850	-	#14 X 6"	100	500

- HWH = Hex Washer Head, HFH = Hex Flange Head, PFH = Phillips Flat Head, TFH = TrimFit® Flat Head
- One straight shank drill bit included in each standard box.
- Hex Washer Head and Hex Flange Head Crete-Flex anchors are measured from below the washer. Phillips Flat Head and TrimFit Flat head CreteFlex anchors are measured end to end. To select the proper minimum anchor length, determine the embedment depth required to obtain the desired load capacity. Then add the thickness of the fixture, including any spacers or shims, to the embedment depth.



Drill Bits

Cat. No.	Description
DW5381	5/32 x 7" UltraCon+ SDS bit
DW5410	7/32" x 6" SDS Plus 2 Cutter Drill Bit
DW5412	7/32" x 10" SDS Plus 2 Cutter Drill Bit

Installation Kit

Cat. No.	Description
DW5366	UltraCon®+ Installation Kit includes: 5/32"and 3/16" UltraCon+ bit, 1/4" and 5/16" nutsetters, #2 and #3 Phillips bits, Phillipsflat head adapter, percussion adapter, drive sleeve and 1/8" allen wrench

Rotary Hammers

Cat. No.	Description
DCH273	20V Max* XR Brushless 1" L-Shape SDS Plus Rotary Hammer
DCH133	20V Max* XR Brushless 1" D-Handle SDS Plus Rotary Hammer

Accessories

Cat. No.	Description
DWH303DH	Onboard Dust Extractor for 1 in. SDS Plus Hammers
DWH050	Large Hammer Dust Extraction - Hole Cleaning
DWH200	Dust Extraction Tube Kit with Hose

Dust Extractors

Cat. No.	Description
DCV585	Flexvolt® 60V Max* Dust Extractor
DVW010	8 Gallon Wet Dry Hepa/Rrp Dust Extractor
DWV012	10 Gallon Wet Dry Hepa/Rrp Dust Extractor
DWH161D1	20V Max* XR Brushless Universal Dust Extractor Kit