

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

APPROVALS AND LISTINGS

- Tested in accordance with ASTM E488
- Miami-Dade County Notice of Acceptance (NOA) No. 21-0201.08
- Florida Statewide Product Approval FL29068.1

GUIDE SPECIFICATIONS

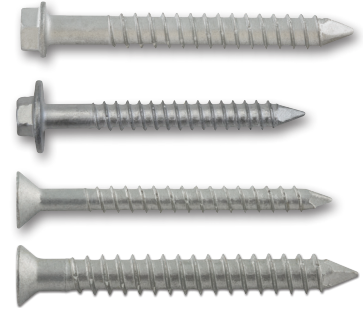
CSI Divisions: 03 16 00 - Concrete Anchors, 04 05 19.16 - Masonry Anchors and 05 05 19 - Post-Installed Concrete Anchors. Screw anchors shall be Crete-Flex as supplied by DEWALT, Towson, MD. Concrete screw anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

MATERIAL SPECIFICATIONS

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

SECTION CONTENTS

General Information..... 1
 Material Specifications 1
 Installation Specifications 2
 Installation Instructions 2
 Performance Data (ASD)..... 3
 Ordering Information..... 4



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)
- Wood

INSTALLATION SPECIFICATIONS

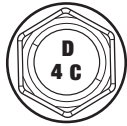
Crete-Flex 410 Stainless Steel Carbon Steel Hex Head^{1,4}

Dimension	Nominal Anchor Diameter					
	3/16" HWH	3/16" PFH	#14 HWH	#14 HFH	#14 PFH	#14 TFH
Anchor Shank Diameter (in.)	0.160	0.160	0.215	0.215	0.215	0.215
Drill Bit Size ² (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 ³ (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

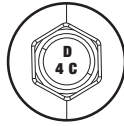
HWH = Hex Washer Head, HFH = Hex Flange Head, PFH = Phillips Flat Head, TFH = TrimFit® Flat Head

- For minimum nominal embedment depths, h_{nom} , see the performance data tables. The minimum hole depth, h_o , is 1/4-inch more than the selected nominal embedment depth.
- 3/16-inch diameter Crete-Flex anchors require the use of a special tolerance UltraCon+ drill bit which have a tolerance range of 0.170" to 0.176".
- Head Height of Hex Flange Head Anchors include the thickness of the flange.
- Pre-drilling is not required for Crete-Flex into wood (but can be considered).

Crete-Flex Identification



Hex Washer Head (HWH)



Hex Flange Head (HFH)



Phillips Flat Head (PFH)



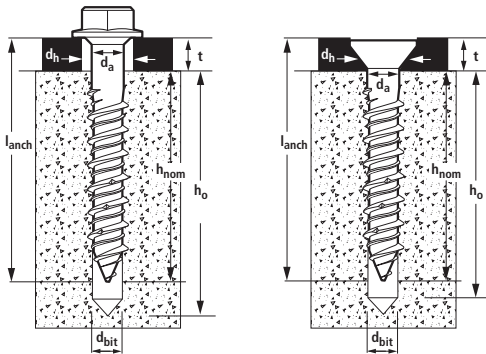
TrimFit Flat Head (TFH)

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

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"

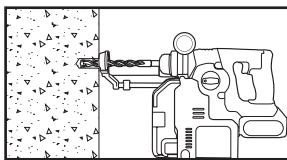
Anchor Detail



Nomenclature

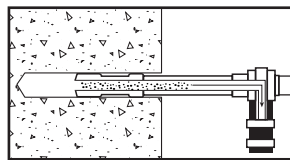
- d_a = Diameter of anchor
- d_{bit} = Diameter of drill bit
- d_h = Diameter of fixture clearance hole
- h_{nom} = Minimum embedment depth
- h = Base material thickness
The minimum value of h should be $1.5h_{nom}$ or 3" whichever is greater
- h_o = Minimum hole depth

INSTALLATION INSTRUCTIONS



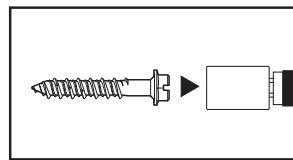
Step 1

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} .



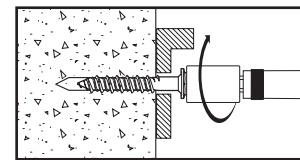
Step 2

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 an UltraCon+ installation socket 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 screw anchor.

PERFORMANCE DATA (ASD)

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	1,390	1,105	1,495	1,185	1,590	1,240	1,675	1,240
	2	1-3/4	6	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	350	275	375	295	400	310	420	310
	2	1-3/4	6	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.

MECHANICAL ANCHORS

CRETE-FLEX®

410 Stainless Steel Concrete and Masonry Fasteners

Ultimate and Allowable Load Capacities for Crete-Flex in Grouted and Hollow Concrete Masonry^{1,2,3}



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 ³		1	6	1,240	540	250

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 C90. 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.
3. Tabulated load values for #14 screws with 1-5/8" embedment are applicable to grouted concrete masonry only.

Average Withdrawal Capacity Crete-Flex in Wood^{1,2}

Nominal Anchor Diameter in.	Minimum Embedment in.	Minimum Edge Distance in.	Withdrawal Capacity lbs.
#14	1	1-3/4	260
	1-1/2	1-3/4	735

1. Ultimate load capacities are based on laboratory tests and must be reduced by a minimum safety factor of 3.0 or greater to determine allowable working load.
2. Tests in Southern Yellow Pine (SYP) with minimum Specific Gravity of 0.55; screws oriented tangential to wood grain.

ORDERING INFORMATION

Crete-Flex

Cat. No.				Screw Size	Approximate Thread Length	Pack Qty.	Carton Qty.
HWH	HFH	PFH	TFH				
DFM4EMH500	-	DFM4EMF610	-	3/16" X 1-1/4"	1"	100	500
DFM4EMH510	-	DFM4EMF620	-	3/16" X 1-3/4"	1-1/2"	100	500
DFM4EMH530	-	DFM4EMF630	-	3/16" X 2-1/4"	1-3/4"	100	500
DFM4EMH550	-	DFM4EMF640	-	3/16" X 2-3/4"	1-3/4"	100	500
-	-	DFM4EMF650	-	3/16" X 3-1/4"	1-3/4"	100	500
DFM4EMF310	-	DFM4EMF690	-	#14 X 1-1/4"	1"	100	500
DFM4EMF330	DFM4EMF340	DFM4EMF710	DFM4EMF510	#14 X 1-3/4"	1-1/2"	100	500
DFM4EMF350	DFM4EMF360	DFM4EMF730	DFM4EMF530	#14 X 2-1/4"	1-3/4"	100	500
DFM4EMF370	-	DFM4EMF750	DFM4EMF550	#14 X 2-3/4"	1-3/4"	100	500
DFM4EMF390	-	DFM4EMF770	-	#14 X 3-1/4"	1-3/4"	100	500
DFM4EMF410	-	DFM4EMF790	-	#14 X 3-3/4"	1-3/4"	100	500
DFM4EMF430	-	DFM4EMF810	-	#14 X 4"	1-3/4"	100	500
DFM4EMF450	-	DFM4EMF830	-	#14 X 5"	1-3/4"	100	500
DFM4EMF470	-	DFM4EMF850	-	#14 X 6"	1-3/4"	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 (e.g. required to obtain desired load capacity), then add the thickness of the fixture, including any spacers or shims, to the embedment depth.



Drill Bits

Cat. No.	Description
DFX153255	5/32" x 5-1/2" UltraCon+ straight shank bit
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" 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
DWW010	8 Gallon Wet Dry Hepa/Rrp Dust Extractor
DWW012	10 Gallon Wet Dry Hepa/Rrp Dust Extractor
DWH161D1	20V Max* XR Brushless Universal Dust Extractor Kit

