SINGLE<sup>TM</sup> Shield Expansion Ancho

# **GENERAL INFORMATION**

# **SINGLE**<sup>™</sup>

Shield Expansion Anchor

## PRODUCT DESCRIPTION

The Single is a machine bolt anchor designed for use in concrete. The Single consists of a preassembled set of expansion shields and an expander cone formed from zamac alloy. As the anchor is tightened, the wedge-shaped cone is drawn into the shields, compressing them against the base material. The Single is not recommended for use in overhead or life safety applications.

## FEATURES AND BENEFITS

- + Readily accepts machine bolts
- + Internally threaded anchor for easy removability and service work
- + Corrosion resistant body

## APPROVALS AND LISTINGS

- Tested in accordance with ASTM E488
- Federal GSA Specification Meets the descriptive and proof load requirements of CID A-A 1923A, Type 2

#### **GUIDE SPECIFICATIONS**

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

# **INSTALLATION AND MATERIAL SPECIFICATIONS**

#### **Installation Specifications**

Dimonsion	Rod/Anchor Diameter, d						
Dimension	1/4"	5/16"	3/8"	1/2"	5/8"		
ANSI Drill Bit Size, (in.)	1/2	5/8	5/8	7/8	1		
Max. Tightening Torque, (ftlbs.)	5	7	10	20	30		
Thread Size (UNC)	1/4-20	5/16-18	3/8-16	1/2-13	5/8-11		
Thread Length In Cone (in.)	5/16	5/16	5/16	7/16	5/8		
Overall Anchor Length (in.)	1-5/16	1-1/2	1-1/2	2-1/16	2-5/8		
Nominal outside diameter of anchor is the same as the corresponding ANSI drill bit size							

## **Material Specifications**

Anchor Component	Component Material		
Anchor Sleeve	Zamac Alloy		
Cone	Zamac Alloy		

## **Installation Guidelines**

Drill a hole into the base material to the minimum depth required. The tolerances of the drill bit used should meet the requirements of ANSI Standard B212.15. Remove dust and debris 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.



Do not expand the anchor prior to installation. Insert anchor into the hole, threaded cone end first and tap it flush to the surface.



Position fixture, then insert bolt and tighten. The bolt must engage a minimum of 2/3 of the anchor threads.



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SINGLE

## THREAD VERSION

• UNC Thread

## **ANCHOR MATERIALS**

Zamac Alloy

**ANCHOR SIZE RANGE (TYP.)** 

• 1/4" to 5/8" diameter

#### SUITABLE BASE MATERIALS

· Normal-weight concrete

## **PERFORMANCE DATA**

#### Ultimate Load Capacities for Single Expansion Anchor in Normal-Weight Concrete<sup>1,23</sup>

	Minimum	Minimum Concrete Compressive Strength (f´c)						
Rod/Anchor Size in. (mm)	Embedment Depth h. in. (mm)	2,000 psi (13.8 MPa)		4,000 psi (27.6 MPa)		6,000 psi (41.4 MPa)		
		Tension Ibs. (kN)	Shear Ibs. (kN)	Tension Ibs. (kN)	Shear Ibs. (kN)	Tension Ibs. (kN)	Shear Ibs. (kN)	
1/4	1-3/8	175	555	400	565	460	670	
(6.4)	(34.9)	(0.8)	(2.5)	(1.8)	(2.5)	(2.1)	(3.0)	
5/16	1-5/8	830	1,535	1,260	1,780	1,475	1,900	
(7.9)	(41.3)	(3.7)	(6.9)	(5.7)	(8.0)	(6.6)	(8.6)	
3/8	1-5/8	1,160	3,050	2,030	3,225	2,360	4,570	
(9.5)	(41.3)	(5.2)	(13.7)	(9.1)	(14.5)	(10.6)	(20.6)	
1/2	2-1/2	1,495	3,475	2,450	4,000	2,550	6,435	
(12.7)	(63.5)	(6.7)	(15.7)	(11.0)	(18.0)	(11.5)	(29.0)	
5/8	2-3/4	2,230	6,425	3,690	6,845	3,975	7,720	
(15.9)	(69.9)	(10.0)	(28.9)	(16.6)	(30.8)	(17.9)	(34.8)	

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. Anchors are not recommended for use overhead or for life safety. Consideration of safety factors of 20 or higher may be necessary depending upon the application such as in sustained tensile loading applications.

## Allowable Load Capacities for Single Expansion Anchor in Normal-Weight Concrete<sup>1,2,3</sup>

	Minimum	Minimum Concrete Compressive Strength (f´c)						
Rod/Anchor Size	Embedment Denth	2,000 psi (13.8 MPa)		4,000 psi (27.6 MPa)		6,000 psi (41.4 MPa)		
in. (mm)	h, in. (mm)	Tension Ibs. (kN)	Shear Ibs. (kN)	Tension Ibs. (kN)	Shear Ibs. (kN)	Tension Ibs. (kN)	Shear Ibs. (kN)	
1/4	1-3/8	45	140	100	140	115	170	
(6.4)	(34.9)	(0.2)	(0.6)	(0.5)	(0.6)	(0.5)	(0.8)	
5/16	1-5/8	210	385	315	445	370	475	
(7.9)	(41.3)	(0.9)	(1.7)	(1.4)	(2.0)	(1.7)	(2.1)	
3/8	1-5/8	290	765	510	805	590	1,145	
(9.5)	(41.3)	(1.3)	(3.4)	(2.3)	(3.6)	(2.7)	(5.1)	
1/2	2-1/2	375	870	615	1,000	640	1,610	
(12.7)	(63.5)	(1.7)	(3.9)	(2.8)	(4.5)	(2.9)	(7.2)	
5/8	2-3/4	560	1,605	925	1,710	995	1,930	
(15.9)	(69.9)	(2.5)	(7.2)	(4.2)	(7.7)	(4.5)	(8.7)	

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. Allowable load capacities listed are calculated using and applied safety factor of 4.0. Anchors are not recommended for use overhead or for life safety. Consideration of safety factors of 20 or higher may be necessary depending upon the application such as in sustained tensile loading applications.

3. Linear interpolation may be used to determine loads for intermediate compressive strengths.

## **ORDERING INFORMATION**

#### **Single Expansion Anchor**

Cat. No.	Rod/Anchor Dia.	Drill Diameter	Min. Hole Depth	Std. Box	Std. Carton	Wt./100
9650	1/4"	1/2"	1-3/8"	50	250	3-3/4
9655	5/16"	5/8"	1-5/8"	50	250	5-1/2
9665	3/8"	5/8"	1-5/8"	50	250	5-1/4
9675	1/2"	7/8"	2-1/2"	25	125	15-1/4
9685	5/8"	1"	2-3/4"	25	125	24



