GENERAL INFORMATION

SINGLE™

Shield Expansion Anchor

PRODUCT DESCRIPTION

The Single is a machine bolt anchor designed for use in concrete. The Single consists of a pre-assembled 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.

SECTION CONTENTS

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

INSTALLATION AND MATERIAL SPECIFICATIONS

Installation Specifications

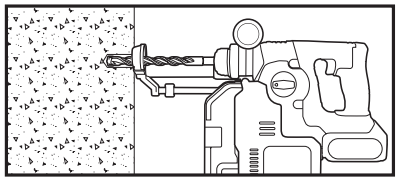
Dimension	Rod/Anchor Diameter, d				
	1/4"	5/16"	3/8"	1/2"	5/8"
ANSI Drill Bit Size, (in.)	1/2	5/8	5/8	7/8	1
Max. Tightening Torque, (ft.-lbs.)	5	7	10	20	30
Thread Size (UNC)	1/4-20	5/16-18	3/8-16	1/2-13	5/8-11
Thread Length In Cone (in.)	5/16	5/16	5/16	7/16	5/8
Overall Anchor Length (in.)	1-5/16	1-1/2	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

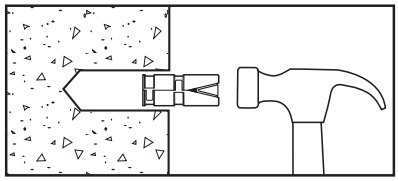
Anchor Component	Component Material
Anchor Sleeve	Zamac Alloy
Cone	Zamac Alloy

Installation Guidelines

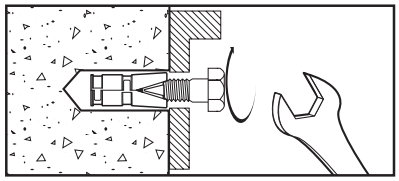
Drill a hole into the base material to the minimum depth required. The tolerances of the drill bit used should meet the requirements of ANSI Standard B212.15. Remove dust and debris from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract 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.



PERFORMANCE DATA

Ultimate Load Capacities for Single Expansion Anchor in Normal-Weight Concrete[1,2,3]

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

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