TECHNICAL DATA SHEET:

Wedge Drop-In Anchor – Zinc

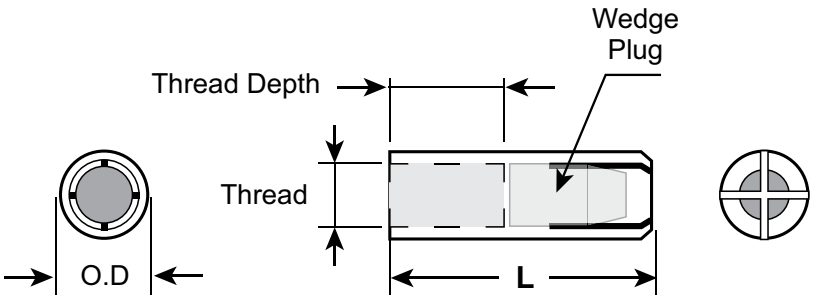
The Wedge Drop-In anchor features an internal thread and is classed as an expansion anchor. Pre assembled with a wedge plug the drop-in anchor can used in solid concrete, hard stone and solid brick. Designed to be paired with any fasteners with matching threads in suspended (cantanery) systems for pipes, air ducts, or sprinkler (HVAC) systems.

A simple and quick installation system suitable as a connecting anchor point, the anchor is expanded with its matching setting tool designed to protect the internal thread. The Wedge Drop-In anchor is particularly well suited to close-to-edge or close-to-anchor fixing as it does not disrupt and burst the surrounding substrate.

MATERIAL SPECIFICATION

Drop-in anchors are manufactured from carbon steel that is electroplated with commercial bright zinc with a secondary chromate treatment

Anchor barrel :	carbon steel
Wedge cone :	carbon steel
Plating :	electroplated zinc coating to 5 microns minimum thickness
Thread :	metric



Stock Code	Description	Drill Dia.	Drill Depth	Thread		
1DIYM08	M8 x 30mm	10mm	32mm	M8	100	1000
1DIYM10	M10 x 40mm	12mm	42mm	M10	50	500
1DIYM12	M12 x 50mm	15mm	52mm	M12	50	400
1DIYM16	M16 x 65mm	20mm	67mm	M16	25	100

PERFORMANCE DATA

Working Stress Design

Allowable working load capacities for Drop-in anchors

Drop-In	Drill ø	Embed. Depth	Torque Guide	15MPa Concrete		32MPa Concrete		40MPa Concrete	
	mm	mm	Nm	Tension kN	Shear kN	Tension kN	Shear kN	Tension kN	Shear kN
M8	10	32	11	2.8	3.4	4.1	3.4	4.6	3.
M10	12	42	22	3.8	5.3	5.2	5.1	6.0	5.3
M12	15	52	38	5.6	7.5	8.2	7.5	9.2	7.6
M16	20	67	95	7.7	13.9	11.2	13.9	12.2	13.9

Incorporated safety factors: Fsc = 3 (concrete) – tension; Fss = 2.5 (steel) – shear

Limit State Design

Limit state design load capacities for Drop-in anchors

Drop-In	Drill ø	Embed. Depth	Torque Guide	15MPa Concrete		32MPa Concrete		40MPa Concrete	
	mm	mm	Nm	Tension kN	Shear kN	Tension kN	Shear kN	Tension kN	Shear kN
M8	10	32	11	5	6.5	7.4	6.5	8.3	6.5
M10	12	42	22	6.7	10.2	9.6	10.4	10.6	10.5
M12	15	52	38	10.3	15	14.7	15.2	16.5	15.1
M16	20	67	95	13.6	25	19.7	25	22	25

Incorporated strength reduction factors: ϕ =0.6 (concrete) – tension; ϕ =0.8 (steel) – shear

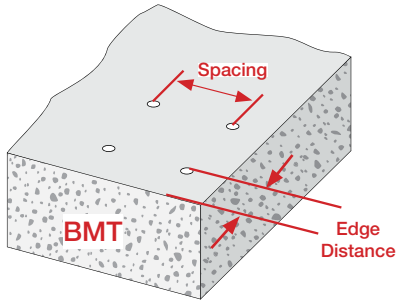
SETTING

Base Material Thickness (BMT)

There is a recommended minimum thickness of the solid base material that the anchor can be set in. The minimum is based on 1.25 times of the calculated embedment to be used. Eg. an anchor to be installed to a depth of 52 mm, the base material should be minimum 65 mm deep.

Embedment - a pre-determined depth to obtain the required load capacity. Equal to or greater than the minimum embedment allowance.

Drill Depth - is the required embedment depth into the substrate plus a cavity allowance.



Spacing

Anchor spacing should be determined by 10 times the selected anchor diameter (10d) to obtain the maximum load in tension or shear. This spacing can be reduced but the load value should also be reduced. The recommended minimum spacing is 5 times the selected anchor diameter (5d), which will have a load rating reduced to 50%.

Anchor SPACING LOAD CAPACITY	10 x *d*	9 x *d*	8 x *d*	7 x *d*	6 x *d*	5 x *d*
Reduce by	100%	10%	20%	30%	40%	50%
Reduction Factor	1.00	0.90	0.80	0.70	0.60	0.50

Edge Distance – in tension

Should be determined by 12 times the selected anchor diameter (12d) to obtain the maximum load in tension and shear. The recommended minimum edge spacing is 8 times the selected anchor diameter (8d).

In tension – reducing the edge distance to the minimum, the load value will reduce by 20%.

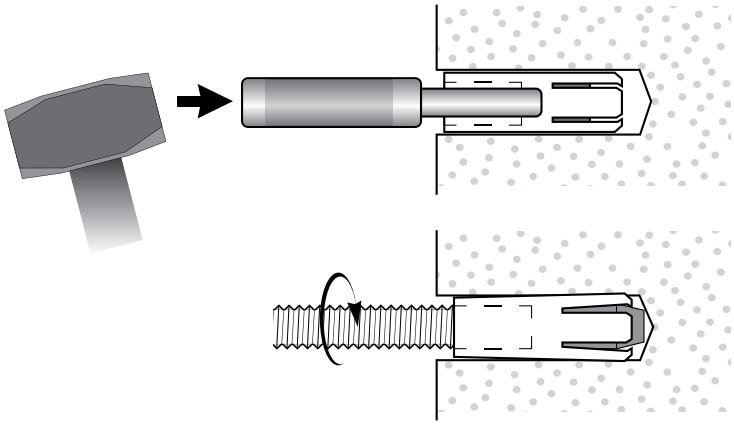
Edge Distance in TENSION only					
LOAD CAPACITY	12 x d	11 x d	10 x d	9 x d	8 x d
Reduce by	100%	5%	10%	15%	20%
Reduction factor	1.00	0.95	0.90	0.85	0.80

In shear – reducing the edge distance to the minimum, the load value will reduce by 50%

Edge Distance in SHEAR only					
LOAD CAPACITY	12 x d	11 x d	10 x d	9 x d	8 x d
Reduce by	100%	13%	25%	37%	50%
Reduction factor	1.00	0.88	0.75	0.63	0.50

INSTALLATION

1. Drill a hole to the recommended diameter and depth using the fixture as a template.
2. Clean the hole thoroughly removing debris with a hand pump, compressed air, or vacuum.
3. Insert drop-in anchor with thread opening facing out, and tap until fully seated in the hole
4. Using the correct setting tool, set the anchor by placing the tool into the anchor until the tool is seated. Hammer in the anchor with 1 to 2 firm hits.
5. Remove setting tool, place fixture, insert bolt or thread rod and tighten. Don't over tighten the anchor as it is already expanded.



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