

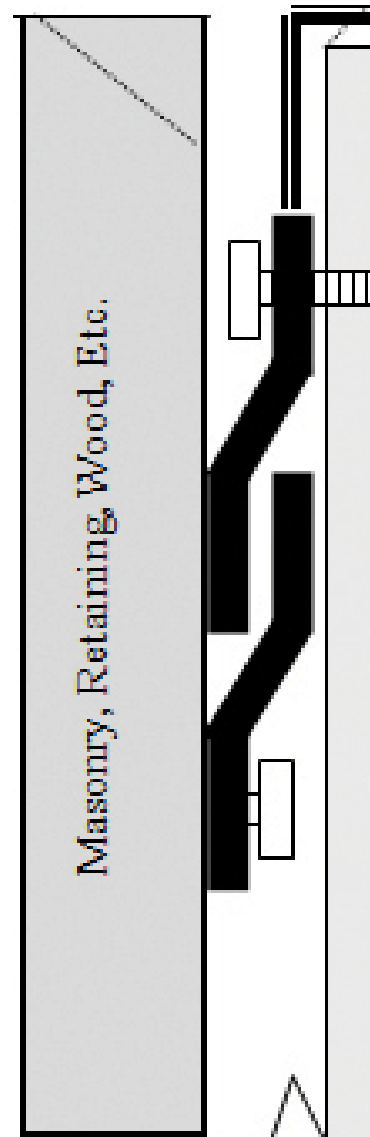
STADIUM PAD INSTALLATION HELPFUL TIPS

Attached are spec sheets for hardware that can be used when installing Stadium Pads. This hardware may vary depending on the actual site conditions.

The 1/4" x 1" Hex Head Self Drilling Screw is most commonly used when mounting the Z-Brackets to the Stadium Pads. The 1/4" x 1 1/2" Drive Pin Anchor can be used most of the time when mounting the ZBrackets onto either a Poured Concrete Wall, CMU Block Wall, or Brick Wall as long as the cores are backfilled with concrete in lieu of sand. If the Drive Pin Anchors don't work, we recommend a 1/4" x TBD" Flat Head Concrete Screw. The length of this particular hardware will be determined by the actual length it needs to be to bite into the wall.

When installing the Z-Brackets to the Stadium Pads, they are typically mounted 6" Down from the Top of the Pad and 6" Up from the Bottom of the Pad. The Z-Brackets mounted to the Wall need to be adjusted accordingly when securing them at a correct height that will allow the pads to be secured as shown in the section cut below.

In the case existing Z-Brackets are being used, the measurements provided above may differ.

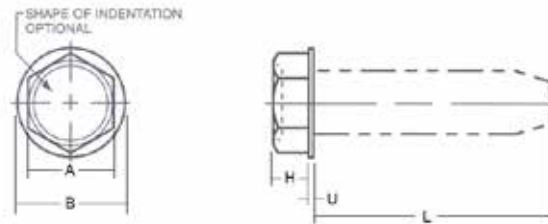


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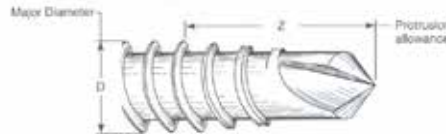


Self-Drilling Screws, Hex Washer Head, Zinc Plated

The information below lists the required dimensional, chemical and physical characteristics of the products in this purchase order. If the order received does not meet these requirements, it may result in a supplier corrective action request, which could jeopardize your status as an approved vendor. Unless otherwise specified, all referenced consensus standards must be adhered to in their entirety.



Nominal Size	A		H		B		U	
	Width Across Flats		Head Height		Washer Diameter		Washer Thickness	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
#4	0.188	0.181	0.060	0.049	0.243	0.225	0.019	0.011
#6	0.250	0.244	0.093	0.08	0.328	0.302	0.025	0.015
#8	0.250	0.244	0.110	0.096	0.348	0.322	0.031	0.019
#10	0.312	0.305	0.120	0.105	0.414	0.384	0.031	0.019
#12	0.312	0.305	0.155	0.139	0.432	0.398	0.039	0.022
1/4 (#14)	0.375	0.367	0.190	0.172	0.520	0.480	0.050	0.030
5/16	0.500	0.488	0.229	0.207	0.676	0.624	0.055	0.035



Nominal Size	Threads per Inch	Type BSD							Point Size
		D		d		Z	L		
		Major Diameter		Minor Diameter		Protusion	Formed	Milled	
		Max.	Min.	Max.	Min.	Ref.	90° Head	90° Head	
#4	24	.114	.110	.086	.082	.163	5/16	3/8	2
#6	20	.139	.135	.104	.099	.190	5/16	3/8	2
#8	18	.166	.161	.122	.116	.211	3/8	7/16	2
#10	16	.189	.183	.141	.135	.300	1/2	9/16	3
#12	14	.215	.209	.164	.157	.353	1/2	21/32	3
1/4 (#14)	14	.246	.240	.192	.185	.393	1/2	11/16	3
5/16	12	.314	.305	.244	.236	.421	5/8	-	3

Nominal Size	Threads per Inch	Type CSD						Point Size	
		D		d		Drill Point Length	L		Point Diameter
		Major Diameter		Minor Diameter			Formed*		
		Max.	Min.	Max.	Min.	Max./Min.	90° Head		Max./Min.
#12	24	.2160	.2094	-	-	.523/.495	7/8	.202/.190	4

*May be formed or milled

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Self-Drilling Screws, Hex Washer Head, Zinc Plated

5/16 Test Performance				
Test Plate	Axial Loading	Drill Speed	Time to Drive	Torsion
Inch	lbs	RPM	sec max	lb-in min
0.063	44.974	1800	5.0	289.5

Torsion is per SAE J933 Type B

Specification Requirements:

- **Dimensions:** #4 - 1/4": SAE J78
5/16": See dimensions above
- **Drive Style:** Hex
- **Material, Mechanical, & Performance:** #4 - 1/4": SAE J78. 5/16": See above.
- **Thread Requirements:** SAE J78
- **Point Style:** Sizes 4 to 8, #2
Sizes 10 to 5/16", #3
- **Finish:** Fe/Zn 3AT Per ASTM F1941
- **Hydrogen Embrittlement:** Baking to relieve internal hydrogen embrittlement is mandatory and shall be performed after electroplating prior to the application of conversion finish where baking temperatures can damage the conversion film. Baking may be allowed after conversion finish provided temperature does not alter performance. Part temperature shall reach 375°F to 425°F (190°C to 220°C) for a minimum of 4 hours, as soon as practical after plating.

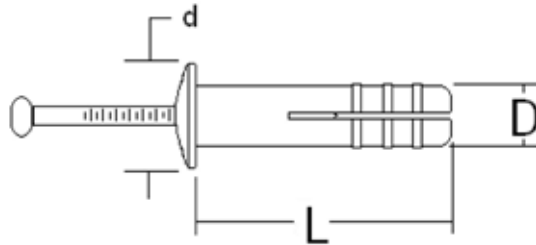
Hydrogen Embrittlement test results shall be maintained and supplied to Fastenal upon request.

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Anchor, Drive Pin, Mushroom Head, Cast Zinc

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D	d	L
Diameter (Inch)	Head Diameter	Length
Nominal		
3/16	3/8	7/8
1/4	7/16	3/4
		1
		1-1/4
		1-1/2
		2
		2-1/2
		3

Allowable Load Capacities for Drive in Normal-Weight Concrete			
Anchor		Min. Embedment Depth	Minimum Concrete Compressive Strength
Diameter	Length		3000 psi Tension Lbs. (max.)
3/16	7/8	5/8	400
1/4	3/4	5/8	500
	≤ 1	3/4	800

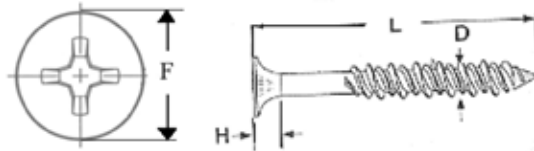
Allowable load is derived from a 4:1 safety factor
Not for overhead use

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Concrete Screw, Flat Head, Phillips, Blue Coated

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Size	Thread Size	Fixture Clearance Hole	H	F	Phillips Drive Bit Size
			Head Height	Head Diameter	
3/16	11-16	1/4	9/64	3/8	2
1/4	1/4-15	5/16	3/16	1/2	3

High-Low Screw Thread Dimensions						
Screw Size	D		B	P		Min. Torsional Strength lb. In.
	High Thread Diameter		Low Thread Diameter	Point Diameter		
	Min.	Max.	Nom.	Min.	Max.	
3/16	.185	.195	.145	.099	.110	30
1/4-15	.250	.260	.200	.161	.175	56

Tolerance on Length: Up to 1in., Incl.: +0, -.0469", Over 1in.: +0, -.0625"

Size	Tensile Strength in Light weight 70 pound per Cubic Foot Masonry Unit (lbs)	Tensile Strength in Medium Weight 117 pound per Cubic Foot Masonry Unit (lbs)	Shear Strength in Light weight 70 pound per Cubic Foot Masonry Unit (lbs)	Shear Strength in Medium Weight 117 pound per Cubic Foot Masonry Unit (lbs)	Embedment
	Avg	Avg	Avg	Avg	
3/16	40	60	85	130	1"
1/4	45	105	110	180	

Masonry Units conform to ASTM C90

Specification Requirements:

- **Dimensions:** See dimensions above
- **Drive Style:** Cross Recessed, Type I
- **Material & Mechanical Properties:** Case Hardened C1018-C1022 Steel, Core Hardness: HRC 32 to 39, Case Hardness: HRC 50 min. Torsional method per SAE J933 Tensile and Shear per ASTM E488
- **Thread Requirements:** See high-low dimensions above
- **Finish:** Blue multilayer coating over a zinc base, 1000 hr to red rust [ASTM B117].

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