

**DESCRIPTION**

The UCAN WAG anchor is a fully threaded torque controlled expansion anchor assembled with a three segment expansion clip. All parts are galvanized for extended corrosion protection and include nut and washer.

The UCAN ISS and IST stainless steel anchors are fully threaded torque controlled expansion anchor assembled with a three segment expansion clip. The anchors are manufactured from stainless steel including the expansion clip, nut and washer.

Both anchor type are most suitable for corrosion resistive anchoring applications for static loading, and can be loaded immediately.

**FEATURES**

- Fast torque up
- Anchor size = hole size
- Non bottom bearing
- Through fastening type +1/8" clearance hole diameter required
- Fully threaded

**LIMITATIONS**

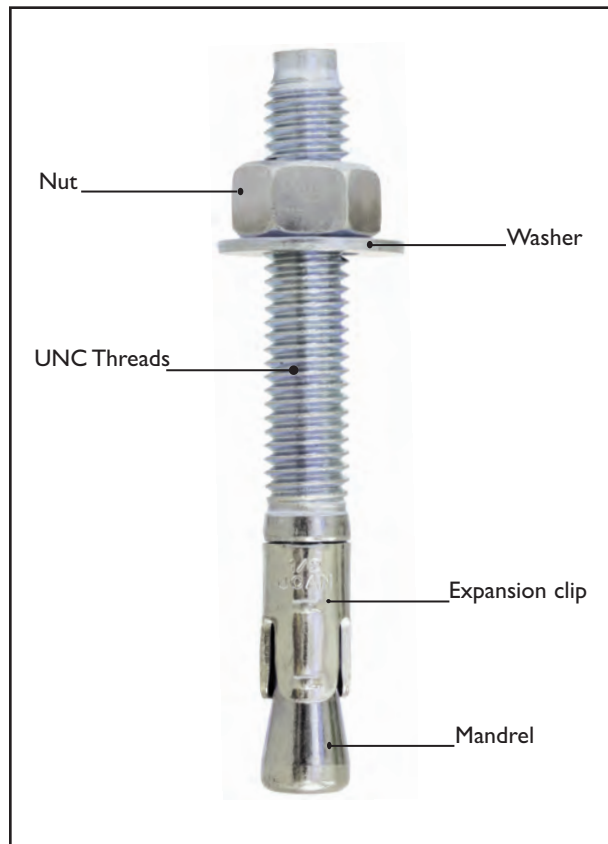
Not recommended for uncured concrete (less than 7 days old), lightweight concrete, masonry block or brick.

**TYPICAL APPLICATIONS**

- Exterior anchoring
- Safety equipment
- Fence installation
- Curtain wall
- Balcony railings
- Mechanical equipment
- Pipe support in corrosive environment
- Brick shelf angles

**MATERIAL SPECIFICATIONS**

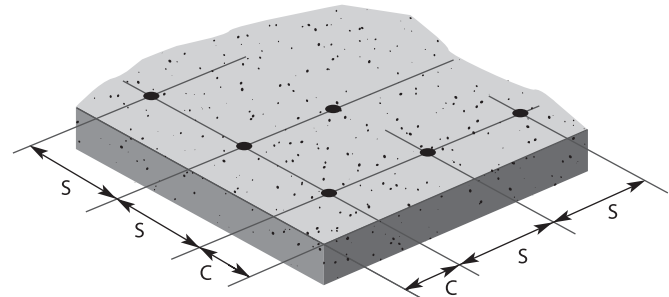
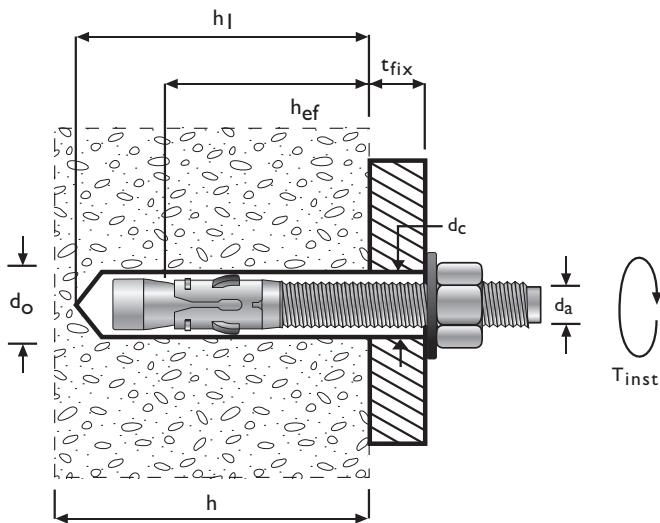
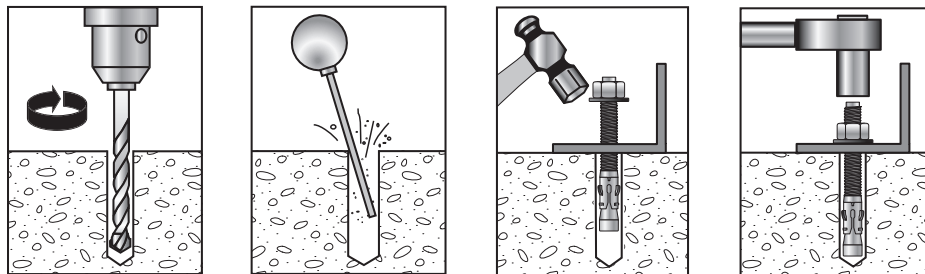
Anchor Component	Material / Standard
Carbon steel anchor body (galvanized anchor)	1/4" – 3/4" (AISI 1022 - AISI 1035) 7/8" - 1-1/4" (AISI 1008)
Clip (galvanized anchor)	AISI 1018 - 1010
Stainless steel, 304 Anchor body and clip	ASTM F593 (AISI 304)
Stainless steel, 316 Anchor body and clip	ASTM F593 (AISI 316)
Corrosion protection (galvanized anchor)	ASTM B695 - 04 Class 65, Type I mechanically galvanized



**INSTALLATION**

Setting Details	Anchor Diameter (in)					
	1/4	3/8	1/2	5/8	3/4	1
Nominal drill bit dia. $d_o$ (in.)	1/4	3/8	1/2	5/8	3/4	1
Minimum embedment (test) $h_{ef}$ (in.)	1-1/2	2	2-1/2	3	3-1/2	4-1/2
Clearance hole dia. $d_c$ (in.)	3/8	1/2	5/8	3/4	7/8	1-1/8
Required anchor spacing for 100% performance $s$ (in.)	3-1/2	4	5-1/2	6-1/2	8	9
Minimum anchor spacing in tension $s_{min}$ (in.)	1-1/2	2	2-1/2	3	3-1/2	4-1/2
Required edge distance for 100% performance $c$ (in.)	3	4	4	4-1/2	5-1/2	6-1/2
Minimum edge distance (tension; shear) $c_{min}$ (in.)	1-1/2	2	2-1/2	3	4-1/2	5-1/2
Installation torque $T_{inst}$ (ft. lbs.)	8	20	40	60	110	N/A
Minimum base material thickness $h$ (in.)	3" or $1.5 \times h_{ef}$ - whichever is greater					

**Note:** Carbide tipped drill bit shall conform to ANSI B 212.15



**ANCHOR SELECTION**

Size	Carbon Steel Galvanized	Stainless Steel (304)	Stainless Steel (316)	Hole Diameter inch	Minimum Embedment inch	Overall Anchor Length inch	Fixture Thickness inch
1/4 x 1-3/4		ISS14134	IST 14134	1/4	1-1/8	1-3/4	1/4
1/4 x 2-1/4		ISS14214	IST14214	1/4	1-1/8	2-1/4	7/8
1/4 x 3-1/4		ISS14314	IST14314	1/4	1-1/8	3	1-5/8
		ISS38214		3/8	1-5/8	2-1/4	1/4
3/8 x 2-3/4	WAG38234	ISS38234	IST38234	3/8	1-5/8	2-3/4	3/4
3/8 x 3		ISS383		3/8	1-5/8	3	1
3/8 x 3-3/4	WAG38334	ISS38334	IST38334	3/8	1-5/8	3-3/4	1-3/4
3/8 x 5		ISS385	IST385	3/8	1-5/8	5	3
1/2 x 2-3/4		ISS12234	IST12234	1/2	2-1/4	2-3/4	1/8
1/2 x 3-3/4		ISS12334	IST12334	1/2	2-1/4	3-3/4	1
1/2 x 4-1/4	WAG12414	ISS12412		1/2	2-1/4	4-1/4	1-1/2
1/2 x 5-1/2	WAG12512	ISS12512		1/2	2-1/4	5-1/2	2-3/4
1/2 x 7		ISS127		1/2	2-1/4	7	4-1/4
5/8 x 3-1/2		ISS58312		5/8	2-3/4	3-1/2	1/8
5/8 x 4-1/2	WAG58412	ISS58412	IST58412	5/8	2-3/4	4-1/2	1-1/8
5/8 x 6	WAG586	ISS586	IST586	5/8	2-3/4	6	2-5/8
5/8 x 7			IST587	5/8	2-3/4	7	3-5/8
3/4 x 4-1/4	WAG34414	ISS34414	IST34414	3/4	3-1/4	4-1/4	1/4
3/4 x 5-1/2	WAG34512	ISS34512		3/4	3-1/4	5-1/2	1-1/2
3/4 x 7	WAG347	ISS347	IST347	3/4	3-1/4	7	3
3/4 x 10		ISS3410		3/4	3-1/4	10	6
1 x 6		ISS16		1	4-1/2	6	1/2
1 x 9		ISS19		1	4-1/2	9	3-1/2

**WEDGE ANCHOR GALVANIZED  
AND STAINLESS STEEL**

**DESIGN DATA**

**Average Ultimate Tension and Shear Loads  
Normal weight stone aggregate concrete**

Anchor Diameter (in)	Minimum Embedment (in)	Tension						Shear	
		2,000 psi Concrete		4,000 psi Concrete		6,000 psi Concrete		4,000 psi Concrete	
		lbf	kN	lbf	kN	lbf	kN	lbf	kN
1/4	1-1/2	1,210	5.38	1,560	6.94	1,800	8.01	1,450	6.45
	2-1/4	1,900	8.45	2,100	9.34	2,030	9.03	1,823	8.11
3/8	2	2,875	12.79	4,550	20.24	5,776	25.69	4,860	21.62
	4-1/2	3,600	16.01	6,024	26.80	7,250	32.25	5,150	22.91
1/2	2-1/2	4,428	19.70	5,940	26.42	7,411	32.97	8,990	39.99
	4-3/4	7,150	31.80	9,284	41.30	12,100	53.82	9,870	43.90
5/8	3	6,187	27.52	8,050	35.81	10,589	47.10	12,083	53.75
	5-1/2	11,500	51.15	14,180	63.08	14,950	66.50	17,800	79.18
3/4	3-1/2	8,133	36.18	10,020	44.57	12,094	53.80	15,489	68.90
	5	12,010	53.42	15,600	69.39	23,450	104.31	21,200	94.30
1	4-1/2	10,226	45.49	15,670	69.70	18,800	83.63	26,997	120.09
	6	16,700	74.29	21,500	95.64	27,800	123.66	31,540	139.90

**Note:** Tabulated values are developed using independent laboratory and in-house testing data.

**Allowable Tension and Shear Loads  
Normal weight stone aggregate concrete**

Anchor Diameter (in)	Minimum Embedment (in)	Tension						Shear	
		2,000 psi Concrete		4,000 psi Concrete		6,000 psi Concrete		4,000 psi Concrete	
		lbf	kN	lbf	kN	lbf	kN	lbf	kN
1/4	1-1/2	318	1.42	411	1.83	474	2.11	382	1.70
	2-1/4	500	2.22	553	2.46	534	2.38	480	2.13
3/8	2	757	3.37	1,197	5.33	1,520	6.76	1,279	5.69
	4-1/2	947	4.21	1,585	7.05	1,908	8.49	1,355	6.03
1/2	2-1/2	1,165	5.18	1,563	6.95	1,950	8.68	2,366	10.52
	4-3/4	1,882	8.37	2,443	10.87	3,184	14.16	2,597	11.55
5/8	3	1,628	7.24	2,118	9.42	2,787	12.40	3,180	14.14
	5-1/2	3,026	13.46	3,732	16.60	3,934	17.50	4,684	20.84
3/4	3-1/2	2,140	9.52	2,637	11.73	3,183	14.16	5,276	23.47
	5	3,161	14.06	4,105	18.26	6,171	27.45	5,579	24.82
1	4-1/2	2,691	11.97	4,124	18.34	4,947	22.01	7,104	31.60
	6	4,395	19.55	5,658	25.17	7,316	23.54	8,276	36.81

**DESIGN DATA**

**Load Adjustment Factors - Spacing**

Anchor Dia. (in)	Anchor in Tension											
	1/4		3/8		1/2		5/8		3/4		1	
Embedment (in)	1.5	2.25	2	4.5	2.5	4.75	3	5.5	3.5	5	4.5	6
Spacing (in)												
1.5	0.65											
2	0.74		0.65									
2.5	0.83	0.65	0.74		0.65							
3	0.91	0.72	0.83		0.71		0.65					
3.5	1.00	0.79	0.91		0.77		0.70		0.65			
3.75		0.83	0.96		0.80		0.73		0.67			
4		0.86	1.00		0.83	0.65	0.75		0.69			
4.5		0.93		0.65	0.88	0.69	0.80		0.73		0.65	
5		1.00		0.68	0.94	0.72	0.85		0.77	0.65	0.69	
5.5				0.71	1.00	0.76	0.90	0.65	0.81	0.69	0.73	
6				0.75		0.79	0.95	0.69	0.84	0.72	0.77	0.65
6.5				0.78		0.83	1.00	0.72	0.88	0.76	0.81	0.67
7.5				0.84		0.90		0.79	0.96	0.83	0.88	0.72
8				0.87		0.93		0.83	1.00	0.86	0.92	0.74
9				0.94		1.00		0.90		0.93	1.00	0.79
10				1.00				0.97		1.00		0.84
10.5								1.00				0.86
12												0.93
13.5												1.00

**Load Adjustment Factors - Edge Distance**

Anchor Dia. (in)	Anchor in Tension											
	1/4		3/8		1/2		5/8		3/4		1	
Embedment (in)	1.5	2.25	2	4.5	2.5	4.75	3	5.5	3.5	5	4.5	6
Spacing (in)												
1.5	0.70											
2	0.80	0.70	0.70									
2.5	0.90	0.78	0.78		0.70							
3	1.00	0.85	0.85		0.80		0.70					
3.5		0.93	0.93		0.90		0.80		0.70			
3.75		0.96	0.96		0.95		0.85		0.74			
4		1.00	1.00		1.00		0.90		0.78			
4.5				0.70		0.70	1.00		0.85		0.70	
5				0.76		0.76			0.93	0.70	0.76	
5.5				0.82		0.82		0.70	1.00	0.75	0.82	
6				0.88		0.88		0.76		0.80	0.88	0.70
6.5				0.94		0.94		0.82		0.85	0.94	0.75
7				1.00		1.00		0.88		0.90	1.00	0.80
8								1.00		1.00		0.90
9												1.00

**DESIGN DATA**

**Load Adjustment Factors - Edge Distance**

Anchor Dia. (in)	Anchor in Shear					
	1/4	3/8	1/2	5/8	3/4	1
Embedment (in)	1.5	2	2.5	3	3.5	4.5
Edge (in)						
1.5	0.50					
2	0.67	0.50				
2.5	0.83	0.63	0.50			
3	1.00	0.75	0.63	0.50		
3.5		0.88	0.75	0.57		
3.75		0.94	0.88	0.61		
4		1.00	0.94	0.64		
4.5			1.00	0.71	0.50	
5				0.79	0.56	
5.5				0.86	0.61	
6				0.93	0.67	0.50
6.5				1.00	0.72	0.54
7					0.78	0.57
8					0.89	0.64
9					1.00	0.71
13						1.00

**SPECIFICATION**

The following sample specification clause is arranged for inclusion in any one of a variety of master specification sections utilizing the Construction Specifications Canada (CSC) format. Square brackets [ ] indicate alternatives, data required, or need for the specifier to fill in information.

**ANCHORS (FASTENERS)**

Expansion anchors shall be UCAN Wedge Anchors [diameter and length to suit load and fixture requirements], supplied by UCAN Fastening Products. Anchors to be zinc plated (stainless steel, AISI grade 304 or 316) and installed according to UCAN's published instructions.