

**DESCRIPTION**

The UCAN wedge anchor is a fully threaded, high-grade, steel anchor assembled with a three-segment expansion clip. This fastener is supplied complete with nut and washer. All parts are zinc plated for added corrosion resistance. The UCAN wedge anchor is also available in 304 or 316 grade stainless steel. It is most suitable for static applications, 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**

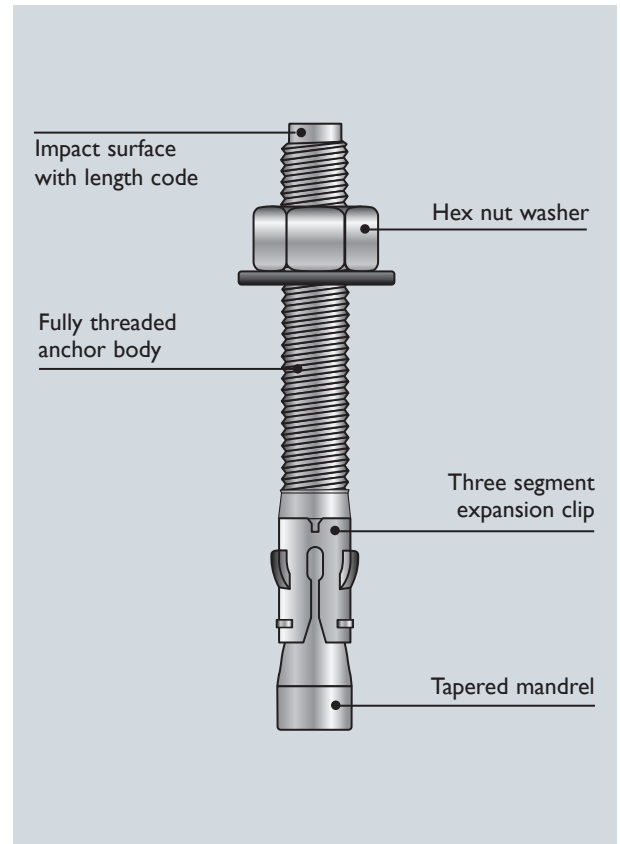
Not recommended for uncured concrete (less than 7 days old), light-weight concrete, masonry block or brick.

**TYPICAL APPLICATIONS**

- Steel base plates
- Storage racking
- Seating
- Curtain wall
- Tilt-up braces
- Mechanical equipment
- Cable trays
- Pipe support
- Brick shelf angles

**MATERIAL SPECIFICATIONS**

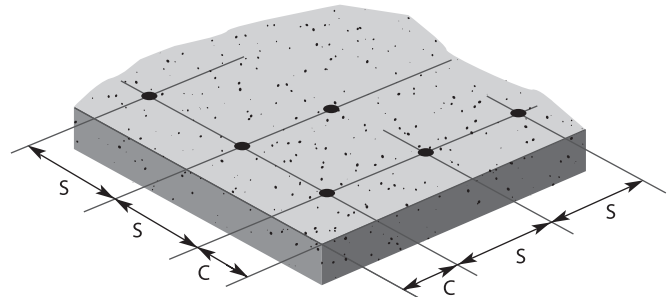
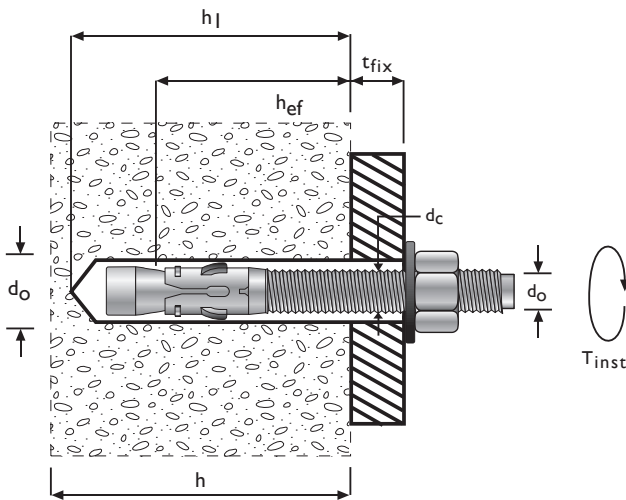
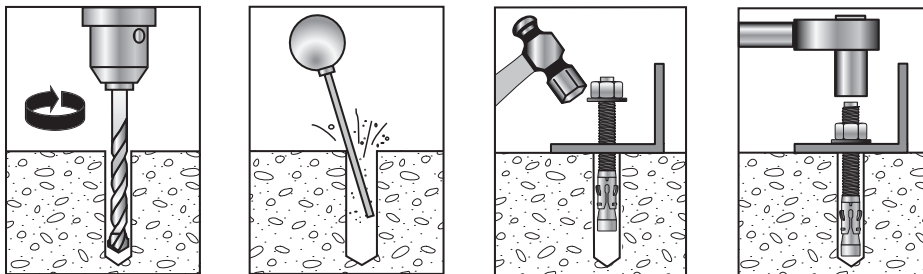
Anchor Component	Material / Standard
Carbon steel anchor body	1/4" – 3/4" (AISI 1022 - AISI 1035) 7/8" – 1-1/4" (AISI 1008)
Clip	AISI 1008 – 1010
Stainless steel, 304	ASTM F593 (AISI 304)
Anchor body and clip	
Stainless steel, 316	ASTM F593 (AISI 316)
Anchor body and clip	
Corrosion protection	ASTM B633 – 98e1      0.0002" (5 micron) (electrodeposited) 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	1-1/4
Nominal drill bit dia. $d_o$ (in.)	1/4	3/8	1/2	5/8	3/4	1	1-1/4
Minimum embedment (test) $h_{ef}$ (in.)	1-1/2	2	2-1/2	3	3-1/2	4-1/2	N/A
Clearance hole dia. $d_c$ (in.)	3/8	1/2	5/8	3/4	7/8	1-1/8	1-5/16
Required anchor spacing for 100% performance $s$ (in.)	3-1/2	4	5-1/2	6-1/2	8	9	N/A
Minimum anchor spacing in tension $s_{min}$ (in.) @ min. emb.	1-1/2	2	2-1/2	3	3-1/2	4-1/2	N/A
Required edge distance in tension for 100% performance $c$ (in.) @ min. emb.	3	4	4	4-1/2	5-1/2	6-1/2	N/A
Minimum edge distance (tension; shear) $c_{min}$ (in.) @ min. emb.	1-1/2	2	2-1/2	3	4-1/2	5-1/2	N/A
Installation torque $T_{inst}$ (ft. lbs.)	8	30	60	90	130	N/A	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 Zinc plated	Stainless Steel (304)	Stainless Steel (316)	Hole Diameter	Minimum Embedment	Thread Length	Overall Anchor Length	Fixture Thickness
				inch	inch	inch	inch	inch
1/4 x 1-3/4	WED14134	ISS14134		1/4	1-1/8	3/4	1-3/4	1/4
1/4 x 2-1/4	WED14214	ISS14214	IST14214	1/4	1-1/8	1-1/8	2-1/4	7/8
1/4 x 3-1/4	WED14314	ISS14314	IST14314	1/4	1-1/8	2-1/8	3	1-5/8
3/8 x 2-1/4	WED38214	ISS38214		3/8	1-5/8	3/4	2-1/4	1/4
3/8 x 2-3/4	WED38234	ISS38234	IST38234	3/8	1-5/8	1-3/8	2-3/4	3/4
3/8 x 3	WED383	ISS383		3/8	1-5/8	1-1/2	3	1
3/8 x 3-3/4	WED38334	ISS38334	IST38334	3/8	1-5/8	2-1/4	3-3/4	1-3/4
3/8 x 5	WED385	ISS385	IST385	3/8	1-5/8	3-5/8	5	3
1/2 x 2-3/4	WED12234	ISS12234	IST12234	1/2	2-1/4	1-1/8	2-3/4	1/8
1/2 x 3-3/4	WED12334	ISS12334	IST12334	1/2	2-1/4	2-1/8	3-3/4	1
1/2 x 4-1/4	WED12414	ISS12414		1/2	2-1/4	2-5/8	4-1/4	1-1/2
1/2 x 5-1/2	WED12512	ISS12512	IST12512	1/2	2-1/4	4	5-1/2	2-3/4
1/2 x 7	WED127	ISS127		1/2	2-1/4	4	7	4-1/4
1/2 x 8-1/2	WED12812			1/2	2-1/4	4	8-1/2	5-3/4
1/2 x 10	WED1210			1/2	2-1/4	4	10	7-1/4
5/8 x 3-1/2	WED58312	ISS58312		5/8	2-3/4	1-5/8	3-1/2	1/8
5/8 x 4-1/2	WED58412	ISS58412	IST58412	5/8	2-3/4	2-5/8	4-1/2	1-1/8
5/8 x 5	WED585			5/8	2-3/4	3-1/8	5	1-5/8
5/8 x 6	WED586	ISS586	IST586	5/8	2-3/4	4	6	2-5/8
5/8 x 7	WED587			5/8	2-3/4	4	7	3-5/8
5/8 x 8-1/2	WED58812			5/8	2-3/4	4	8-1/2	5-1/8
5/8 x 10	WED5810			5/8	2-3/4	4	10	6-5/8
3/4 x 4-1/4	WED34414	ISS34414	IST34414	3/4	3-1/4	2	4-1/4	1/4
3/4 x 4-3/4	WED34434			3/4	3-1/4	2-1/2	4-3/4	3/4
3/4 x 5-1/2	WED34512	ISS34512	IST34512	3/4	3-1/4	3-1/4	5-1/2	1-1/2
3/4 x 6-1/4	WED34614			3/4	3-1/4	4	6-1/4	2-1/4
3/4 x 7	WED347	ISS347	IST347	3/4	3-1/4	4	7	3
3/4 x 8-1/2	WED34812			3/4	3-1/4	4	8-1/2	4-1/2
3/4 x 10	WED3410	ISS3410		3/4	3-1/4	4	10	6
3/4 x 12	WED3412			3/4	3-1/4	4	12	8
7/8 x 6	WED786			7/8	4	3-1/2	6	1-1/8
7/8 x 8	WED788			7/8	4	4	8	3-1/8
7/8 x 10	WED7810	ISS7810		7/8	4	4	10	5-1/2
1 x 6	WED16			1	4-1/2	3-1/2	6	1/2
1 x 9	WED19	ISS19		1	4-1/2	4	9	3-1/2
1 x 12	WED112			1	4-1/2	4	12	6-1/2
1-1/4 x 9	WED1149			1-1/4	5-1/2	4	9	2-1/4
1-1/4 x 12	WED11412			1-1/4	5-1/2	4	12	5-1/4

**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 Anchor in Tension  
 – Spacing –**

Anchor in Tension												
Anchor Dia. (in)	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 in Tension												
Anchor Dia. (in)	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.