

DESCRIPTION

The UCAN sleeve anchor is a light-medium duty anchor ideal for applications in concrete, hollow block and brick. It is a mechanical expansion anchor assembled with an expansion sleeve, spacer, nut and washer. It is also available with flat head and hex bolt head types.

FEATURES

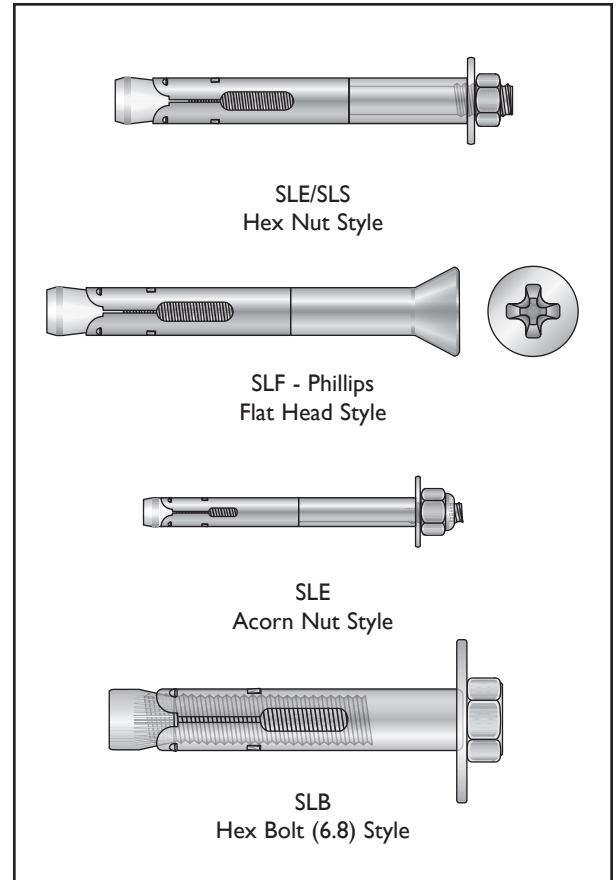
- Through fastening
- Anchor size is same as drill bit size
- Greater expansion than other types of anchors
- Suitable for hollow materials
- Long expansion sleeve
(less concentration of stress on masonry)

LIMITATIONS

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

TYPICAL APPLICATIONS

- Fastening into block and brick
- Shelving and racking
- Window and door frames
- Sill plates
- Cable trays



MATERIAL SPECIFICATIONS

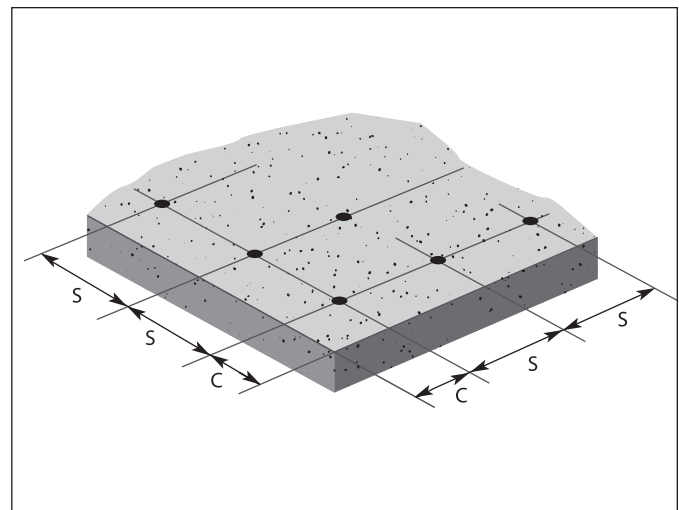
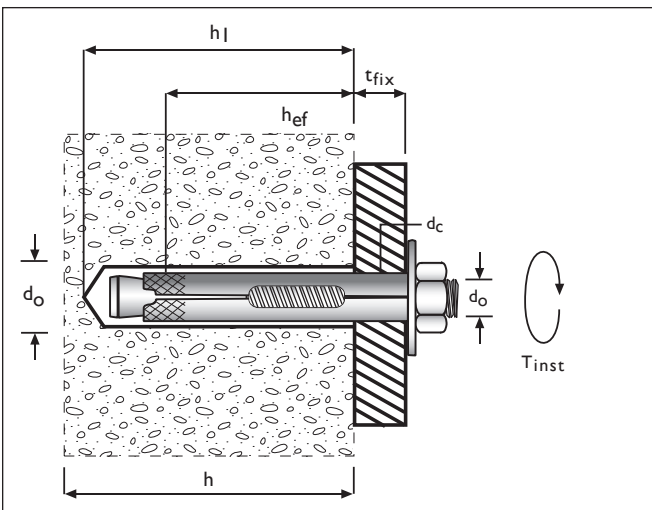
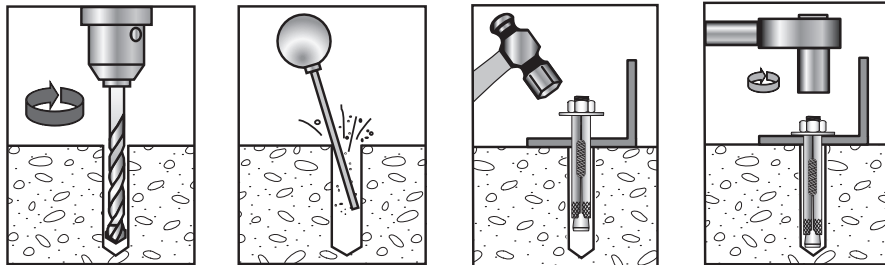
Anchor Component	Material Standard	Mechanical Properties	
		F _y	F _u
Carbon steel anchor body	AISI C 1008-C1010	248.2 MPa (36 ksi)	413.7 MPa (60 ksi)
Carbon steel spacer and expansion sleeves	cold rolled steel		
Stainless steel (304) anchor body, spacer and expansion sleeves	AISI grade 304	241.3 MPa (35 ksi)	586.1 MPa (85 ksi)
Corrosion protection (carbon steel anchors)	ASTM B633 - 98e1	0.0002" (5 micron) electrodeposited	

INSTALLATION

SLEEVE ANCHOR SETTING DETAILS

Details	Anchor size					
	1/4	5/16	3/8	1/2	5/8	3/4
Anchor size / Drill bit / hole nominal diameter d_o (in)	1/4	5/16	3/8	1/2	5/8	3/4
Internal thread dia. d_a (in)	3/16	1/4	5/16	3/8	1/2	5/8
Clearance hole dia. d_c (in)	5/16	3/8	7/16	9/16	11/16	13/16
Effective embedment / hole depth h_{ef} / h_l (in)	1-1/8	1-7/16	1-1/2	2-1/4	2-3/4	3-3/8
Required anchor spacing for 100% performance s (in)	2-1/2	3	3-3/4	5	6-1/4	7-1/2
Minimum anchor spacing s_{min}	1-1/4	1-1/2	1-7/8	2-1/2	3-1/8	3-3/4
Required edge distance for 100% performance c (in)	1-1/4	1-1/2	1-3/4	2-1/4	3-1/8	3-3/4
Minimum edge distance c_{min}	5/8	3/4	1	1-1/4	1-1/2	1-7/8
Minimum base material thickness h (in)	3	3	3	4	4-1/2	5
Max. installation torque T_{inst} (ft x lbf)	3	5	12	20	50	85

Note: Carbide tipped drill bits shall conform to ANSI B 212.15



DESIGN DATA

AVERAGE ULTIMATE LOADS
 Normal weight stone aggregate concrete

Anchor Size in	Embedment inch (mm)	2000 psi (14.0 MPa)				4000 psi (27.6 MPa)			
		Tension		Shear		Tension		Shear	
		lbf	kN	lbf	kN	lbf	kN	lbf	kN
1/4	1-1/8 (28)	959	4.3	1,428	6.4	1,342	6.0	1,428	6.4
5/16	1-7/16 (36)	1,248	5.6	2,169	9.7	1,327	5.9	2,169	9.7
3/8	1-1/2 (38)	1,625	7.2	3,064	13.6	3,080	13.7	3,064	13.6
1/2	2-1/4 (57)	3,172	14.1	5,017	22.3	4,743	21.1	5,017	22.3
5/8	2-3/4 (69)	4,556	20.3	8,552	37.9	6,179	27.5	8,552	37.9
3/4	3-3/8 (76)	6,943	30.9	10,036	44.6	9,525	42.4	10,036	44.6

ALLOWABLE LOADS
 Normal weight stone aggregate concrete

Anchor Size in	Embedment inch (mm)	2000 psi (14.0 MPa)				4000 psi (27.6 MPa)			
		Tension		Shear		Tension		Shear	
		lbf	kN	lbf	kN	lbf	kN	lbf	kN
1/4	1-1/8 (28)	240	1.1	357	1.6	335	1.5	357	1.6
5/16	1-7/16 (36)	312	1.4	542	2.4	332	1.5	542	2.4
3/8	1-1/2 (38)	406	1.8	766	3.4	770	3.42	766	3.4
1/2	2-1/4 (57)	793	3.6	1,254	5.6	1,185	5.3	1,254	5.6
5/8	2-3/4 (69)	1,139	5.1	2,138	9.5	1,545	6.9	2,138	9.5
3/4	3-3/8 (76)	1,736	7.7	2,509	11.2	2,381	10.6	2,509	11.2

LOAD ADJUSTMENT FACTORS - ANCHOR SPACING

Anchor Spacing (inch)	Anchor Diameter						
	1/4	5/16	3/8	1/2	5/8	3/4	
1-1/4	0.70						
1-1/2	0.76	0.70					
1-7/8	0.85	0.78	0.70				
2-1/2	1.00	0.90	0.80	0.70			
2-3/4	1.00	0.95	0.84	0.73			
3		1.00	0.88	0.76			
3-1/8			0.92	0.79	0.70		
3-3/4			1.00	0.85	0.75	0.70	
4-1/4				0.91	0.80	0.74	
5				1.00	0.88	0.81	
5-3/4					0.95	0.87	
6-1/4					1.00	0.91	
7						0.98	
7-1/2						1.00	

SLEEVE ANCHOR

LOAD ADJUSTMENT FACTORS - EDGE DISTANCE

SHEAR							TENSION						
Edge Dist. inch	Anchor Diameter						Edge Dist. inch	Anchor Diameter					
	1/4	5/16	3/8	1/2	5/8	3/4		1/4	5/16	3/8	1/2	5/8	3/4
5/8	0.50						5/8	0.60					
3/4	0.60	0.50					3/4	0.72	0.60				
1	0.93	0.63	0.50				1	0.86	0.69	0.60			
1-1/4	1.00	0.83	0.67	0.50			1-1/4	1.00	0.87	0.69	0.60		
1-1/2		1.00	0.80	0.60			1-1/2		1.00	0.83	0.76	0.60	
1-3/4			0.93	0.70	0.50		1-3/4			0.93	0.83	0.62	
1-7/8			1.00	0.75	0.55	0.50	1-7/8			1.00	0.85	0.73	0.60
2-1/4				0.90	0.68	0.60	2-1/4				0.90	0.74	0.62
2-1/2				1.00	0.77	0.67	2-1/2				1.00	0.76	0.66
2-3/4					0.86	0.73	2-3/4					0.88	0.74
3-1/8					1.00	0.83	3-1/8					1.00	0.87
3-1/2						0.93	3-1/2						0.95
3-3/4						1.00	3-3/4						1.00

ANCHOR SELECTION

Hex Nut Style

Part No.	Bolt Dia. (inch)	Anchor Dia. (inch)	Anchor Length (inch)	Min. Embedment (inch)	Fastens material up to (inch)
SLE14138*	3/16	1/4	1-3/8	1	3/8
SLE14214*	3/16	1/4	2-1/4	1	1-1/4
SLE516112	1/4	5/16	1-1/2	1	1/2
SLE516212	1/4	5/16	2-1/2	1	1-1/2
SLE38178	5/16	3/8	1-7/8	1-1/4	5/8
SLE383	5/16	3/8	3	1-1/4	1-3/4
SLE12214	3/8	1/2	2-1/4	1-1/2	3/4
SLE123	3/8	1/2	3	1-1/2	1-1/2
SLE124	3/8	1/2	4	1-1/2	2-1/2
SLE126	3/8	1/2	6	1-1/2	4-1/2
SLE58214	1/2	5/8	2-1/4	2	1/4
SLE58414	1/2	5/8	4-1/4	2	2-1/4
SLE586	1/2	5/8	6	2	4
SLE34212	5/8	3/4	2-1/2	2-1/4	1/4
SLE34414	5/8	5/8	4-1/4	2-1/4	2
SLE34614	5/8	3/4	6-1/4	2-1/4	4

*Acorn Nut

Hex Bolt Style

Part No.	Bolt Dia. (inch)	Anchor Dia. (inch)	Anchor Length (inch)	Min. Embedment (inch)	Fastens material up to (inch)
SLB38178	5/16	3/8	1-7/8	1-3/8	1/4
SLB38214	5/16	3/8	2-1/4	1-3/8	7/8
SLB383	5/16	3/8	3	1-3/8	1-5/8
SLB12214	3/8	1/2	2-1/4	1-3/4	1/2
SLB12234	3/8	1/2	2-3/4	1-3/4	1
SLB124	3/8	1/2	4	1-3/4	2-1/4

ANCHOR SELECTION CONT'D

Flat Head Style

Part No.	Bolt Dia. (in)	Anchor Dia. (in)	Anchor Length (in)	Min. Embedment (in)	Fastens material up to (in)
SLF14138	3/16	1/4	1-3/8	1	3/8
SLF142	3/16	1/4	2	1	1
SLF143	3/16	1/4	3	1	2
SLF144	3/16	1/4	4	1	3
SLF14514	3/16	1/4	5-1/4	1	4-1/4
SLF516212	1/4	5/16	2-1/2	1	1-1/2
SLF516312	1/4	5/16	3-1/2	1	2-1/2
SLF38234	5/16	3/8	2-3/4	1-1/4	1-1/2
SLF384	5/16	3/8	4	1-1/4	2-3/4
SLF385	5/16	3/8	5	1-1/4	3-3/4
SLF386	5/16	3/8	6	1-1/4	4-3/4

Hex Nut Style (Stainless Steel)

Part No.	Bolt Dia. (inch)	Anchor Dia. (inch)	Anchor Length (inch)	Min. Embedment (inch)	Fastens material up to (inch)
SLS14138	3/16	1/4	1-3/8	1	3/8
SLS516112	1/4	5/16	1-1/2	1	1/2
SLS516212	1/4	5/16	2-1/2	1	1-1/2
SLS38178	5/16	3/8	1-7/8	1	7/8
SLS383	5/16	3/8	3	1-1/4	1-3/4
SLS123	3/8	1/2	3	1-1/2	1-1/2

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 [diameter and length to suit load and fixture requirements] UCAN Sleeve Anchors, supplied by UCAN Fastening Products. Anchors to be [zinc plated and have grade ASTM A307 carbon steel] [Type 304 Stainless Steel] anchor body, and installed according to the manufacturers published instructions.