The following excerpt are pages from the North American Product Technical Guide, Volume 2: Anchor Fastening, Edition 21.

Please refer to the publication in its entirety for complete details on this product including data development, product specifications, general suitability, installation, corrosion and spacing and edge distance guidelines.
US&CA: https://submittals.us.hilti.com/PTGVol2/

To consult directly with a team member regarding our anchor fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am – 6:00pm CST.
US: 877-749-6337 or HNATechnicalServices@hilti.com
CA: 1-800-363-4458, ext. 6 or CATechnicalServices@hilti.com

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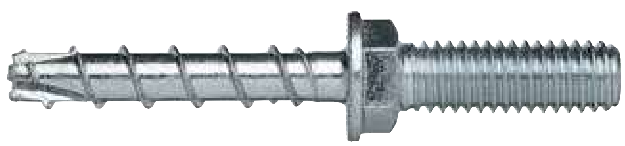
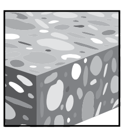
3.3.8 KWIK HUS-EZ I AND KWIK HUS-EZ E CARBON STEEL SCREW ANCHOR

3.3.8 KWIK HUS-EZ I AND KWIK HUS-EZ E CARBON STEEL SCREW ANCHOR

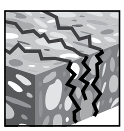
PRODUCT DESCRIPTION

KWIK HUS EZ I and KWIK HUS-EZ E carbon steel anchors

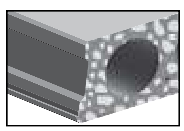
Anchor System		Features and Benefits
	Carbon Steel 1/4", 3/8" KWIK HUS-EZ I	• OSHA compliant installation options including the Hilti SafeSet™ hollow drill bit technology • Easy installation using impact tool or torque wrench • Product and length identification marks facilitate quality control after installation • Thread design enables quality setting and exceptional load values in wide variety of base material strengths • 1/4" diameter available in internally and externally threaded head styles • Anchor is fully removable • Anchor diameter is same as drill bit diameter. No special diameter bit requiredt. • Suitable for reduced edge distances and spacing • Suitable for seismic and non-seismic areas
	Carbon Steel 1/4" KWIK HUS EZ E	



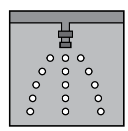
Uncracked concrete



Cracked concrete



Hollowcore concrete



Fire sprinkler listings

SAFESET

SafeSet™ System with Hollow Drill Bit

Profis Anchor design software

Approvals/Listings	
ICC-ES (International Code Council)	ESR-3027 in concrete per ACI 318 Ch. 17 / ACI 355.2/ ICC-ES AC193
City of Los Angeles	City of Los Angeles 2020 LABC Supplement (within ESR-3027)
FM (Factory Mutual)	Pipe hanger components for automatic sprinkler systems for KH-EZ I and KH-EZ E

LA DBS DEPARTMENT OF BUILDING AND SAFETY

FM APPROVED

INSTALLATION PARAMETERS

Table 1 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E specifications[1,2]

Setting information	Symbol	Units	Nominal anchor diameter					
			1/4					3/8
Head style			KH-EZ E	KH-EZ I				
Internal thread or external thread diameter		in.	3/8	1/4		3/8		1/2
Nominal bit diameter	d_{bit}	in.	1/4					3/8
Nominal embedment	h_{nom}	in.	1-5/8	1-5/8	2-1/2	1-5/8	2-1/2	2-1/8
Effective embedment	h_{ef}	in.	1.18	1.18	1.92	1.18	1.92	1.54
Minimum hole depth	h_o	in.	2	2	2-7/8	2	2-7/8	2-3/8
Installation torque	T_{inst}	ft-lb (N-m)	18 (24)					40 (54)
Wrench size		in.	1/2	3/8		1/2		11/16

1 T_{inst} is the maximum installation torque that may be applied with a torque wrench.

2 See table 5 and figure 2 of section 3.3.6 for spacing, edge distance, and concrete thickness parameters

Figure 1 — KWIK HUS-EZ I anchor installation details

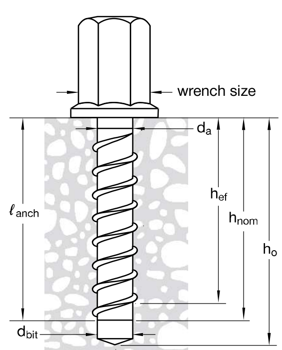
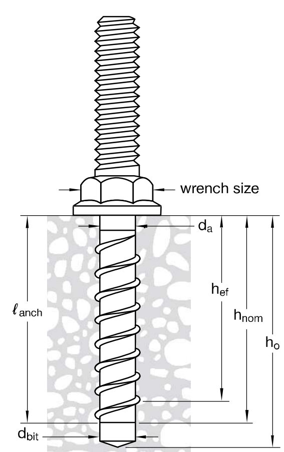


Figure 2 — KWIK HUS-EZ E anchor installation details



DESIGN INFORMATION IN CONCRETE PER ACI 318

ACI 318 Chapter 17 design

The load values contained in this section are Hilti Simplified Design Tables. The load tables in this section were developed using the Strength Design parameters and variables of ESR-3027 and the equations within ACI 318 Chapter 17. For a detailed explanation of the Hilti Simplified Design Tables, refer to section 3.1.8. Data tables from ESR-3027 are not contained in this section, but can be found at www.icc-es.org or at www.hilti.com.

Table 2 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E design strength with concrete / pullout failure in uncracked concrete[1,2,3,4]

Nominal anchor diameter in.	Nominal embed. depth in. (mm)	Tension - ϕN_n							Shear - ϕV_n			
		f'_c = 2,500 psi (17.2 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 5,000 psi (34.5 MPa) lb (kN)	f'_c = 6,000 psi (41.4 MPa) lb (kN)	f'_c = 7,000 psi (48.3 MPa) lb (kN)	f'_c = 8,000 psi (55.2 MPa) lb (kN)	f'_c = 2,500 psi (17.2 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 6,000 psi (41.4 MPa) lb (kN)
1/4	1-5/8	585	620	675	725	765	800	830	1,075	1,180	1,360	1,670
	(41)	(2.6)	(2.8)	(3.0)	(3.2)	(3.4)	(3.6)	(3.7)	(4.8)	(5.2)	(6.0)	(7.4)
	2-1/2	1,525	1,670	1,930	2,160	2,365	2,555	2,730	2,235	2,450	2,825	3,460
	(64)	(6.8)	(7.4)	(8.6)	(9.6)	(10.5)	(11.4)	(12.1)	(9.9)	(10.9)	(12.6)	(15.4)
3/8	2-1/8	1,490	1,635	1,885	2,110	2,310	2,495	2,665	1,605	1,760	2,030	2,485
	(54)	(6.6)	(7.3)	(8.4)	(9.4)	(10.3)	(11.1)	(11.9)	(7.1)	(7.8)	(9.0)	(11.1)

Table 3 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E design strength with concrete/pullout failure in cracked concrete[1,2,3,4,5]

Nominal anchor diameter in.	Nominal embed. depth in. (mm)	Tension - ϕN_n							Shear - ϕV_n			
		f'_c = 2,500 psi (17.2 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 5,000 psi (34.5 MPa) lb (kN)	f'_c = 6,000 psi (41.4 MPa) lb (kN)	f'_c = 7,000 psi (48.3 MPa) lb (kN)	f'_c = 8,000 psi (55.2 MPa) lb (kN)	f'_c = 2,500 psi (17.2 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 6,000 psi (41.4 MPa) lb (kN)
1/4	1-5/8	300	315	345	370	390	410	425	765	835	965	1,180
	(41)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)	(1.8)	(1.9)	(3.4)	(3.7)	(4.3)	(5.2)
	2-1/2	760	830	960	1,070	1,175	1,270	1,355	1,585	1,735	2,000	2,450
	(64)	(3.4)	(3.7)	(4.3)	(4.8)	(5.2)	(5.6)	(6.0)	(7.1)	(7.7)	(8.9)	(10.9)
3/8	2-1/8	1,055	1,155	1,335	1,495	1,635	1,765	1,890	1,135	1,245	1,440	1,760
	(54)	(4.7)	(5.1)	(5.9)	(6.7)	(7.3)	(7.9)	(8.4)	(5.0)	(5.5)	(6.4)	(7.8)

3.3.8

1 See section 3.1.8 to convert design strength value to ASD value.
2 Linear interpolation between embedment depths and concrete compressive strengths is not permitted.
3 Apply spacing, edge distance, and concrete thickness factors in tables 5 and 6 as necessary. Compare to the steel values in table 4. The lesser of the values is to be used for the design.
4 Tabular values are for normal weight concrete only. For lightweight concrete multiply design strength by λ_a as follows: for sand-lightweight, λ_a = 0.68; for all-lightweight, λ_a = 0.60
5 Tabular values are for static loads only. For seismic tension loads, multiply cracked concrete tabular values in tension by the following reduction factors:
1/4-in diameter by 1-5/8-in nominal embedment depth - $\alpha_{N,seis}$ = 0.60
1/4-in diameter by 2-1/2-in nominal embedment depth - $\alpha_{N,seis}$ = 0.75
3/8-in diameter by 2-1/8-in nominal embedment depth - $\alpha_{N,seis}$ = 0.75
No reduction needed for seismic shear. See Section 3.1.8 for additional information on seismic applications.

Table 4 — Steel design strength for Hilti KWIK HUS-EZ I and KWIK HUS-EZ E anchors[1,2]

Nominal anchor diameter in.	Nominal internal thread diameter in.	Tensile[3] ϕN_{sa} lb (kN)	Shear[4] ϕV_{sa} lb (kN)	Seismic shear[5] ϕV_{sa} lb (kN)
1/4	1/4-20	3,680	815	365
	UNC	(16.4)	(3.6)	(1.6)
	3/8-16	3,680	790	670
	UNC	(16.4)	(3.5)	(3.0)
3/8	1/2-13	5,990	1,130	1,130
	UNC	(26.6)	(5.0)	(5.0)

1 See section 3.1.8 to convert design strength value to ASD value.
2 Hilti KWIK HUS-EZ I anchors are to be considered brittle steel elements.
3 Tension $\phi N_{sa} = \phi A_{se,N} f_{uta}$ as noted in ACI 318 Chapter 17.
4 Shear determined by static tests with $\phi V_{sa} < \phi\ 0.60 A_{se,V} f_{uta}$ as noted in ACI 318 Chapter 17.
5 Seismic shear values determined by seismic shear tests with $\phi V_{sa} \leq \phi\ 0.60 A_{se,V} f_{uta}$ as noted in ACI 318 Chapter 17. See Section 3.1.8 for additional information on seismic applications.

Table 5 — Load adjustment factors for 1/4-in. diameter Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in uncracked concrete[1,2]

1/4-in. KH-EZ uncracked concrete			Spacing factor in tension f_{AN}		Edge distance factor in tension f_{RN}		Spacing factor in shear[3] f_{AV}		Edge distance in shear: ⊥ toward edge f_{RV}		Edge distance in shear: II to and away from edge f_{RV}		Conc. thickness factor in shear[4] f_{HV}	
Embedment h_{nom}	in.	(mm)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)
Spacing (s) / edge distance (c_a) / concrete thickness (h) - in. (mm)	1-1/2	(38)	0.71	0.63	0.78	0.65	0.59	0.56	0.40	0.21	0.78	0.42	n/a	n/a
	2	(51)	0.78	0.67	1.00	0.77	0.62	0.58	0.61	0.33	1.00	0.65	n/a	n/a
	2-1/2	(64)	0.85	0.72		0.90	0.65	0.60	0.86	0.46		0.90	n/a	n/a
	3	(76)	0.92	0.76		1.00	0.68	0.62	1.00	0.60		1.00	n/a	n/a
	3-1/4	(83)	0.96	0.78			0.70	0.63		0.68			0.88	n/a
	3-1/2	(89)	0.99	0.80			0.71	0.64		0.76			0.92	n/a
	4	(102)	1.00	0.85			0.74	0.66		0.92			0.98	n/a
	4-1/8	(105)		0.86			0.75	0.66		0.97			1.00	0.81
	4-1/2	(114)		0.89			0.77	0.68		1.00				0.84
	5	(127)		0.93			0.80	0.70						0.89
	5-1/2	(140)		0.98			0.83	0.72						0.93
	6	(152)		1.00			0.86	0.74						0.97
	7	(178)					0.92	0.78						1.00
	8	(203)					0.98	0.82						
	9	(229)					1.00	0.86						
	10	(254)						0.89						
	11	(279)						0.93						
	12	(305)						0.97						
	14	(356)						1.00						

Table 6 — Load adjustment factors for 1/4-in. diameter Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in cracked concrete[1,2]

1/4-in. KH-EZ cracked concrete			Spacing factor in tension f_{AN}		Edge distance factor in tension f_{RN}		Spacing factor in shear[3] f_{AV}		Edge distance in shear: ⊥ toward edge f_{RV}		Edge distance in shear: II to and away from edge f_{RV}		Conc. thickness factor in shear[4] f_{HV}	
Embedment h_{nom}	in.	(mm)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)	1-5/8 (41)	2-1/2 (64)
Spacing (s) / edge distance (c_a) / concrete thickness (h) - in. (mm)	1-1/2	(38)	0.71	0.63	0.88	0.65	0.59	0.56	0.40	0.21	0.80	0.43	n/a	n/a
	2	(51)	0.78	0.67	1.00	0.77	0.62	0.58	0.62	0.33	1.00	0.66	n/a	n/a
	2-1/2	(64)	0.85	0.72		0.90	0.65	0.60	0.87	0.46		0.90	n/a	n/a
	3	(76)	0.92	0.76		1.00	0.68	0.62	1.00	0.60		1.00	n/a	n/a
	3-1/4	(83)	0.96	0.78			0.70	0.63		0.68			0.89	n/a
	3-1/2	(89)	0.99	0.80			0.71	0.64		0.76			0.92	n/a
	4	(102)	1.00	0.85			0.74	0.66		0.93			0.98	n/a
	4-1/8	(105)		0.86			0.75	0.66		0.97			1.00	0.81
	4-1/2	(114)		0.89			0.77	0.68		1.00				0.85
	5	(127)		0.93			0.80	0.70						0.89
	5-1/2	(140)		0.98			0.83	0.72						0.93
	6	(152)		1.00			0.86	0.74						0.98
	7	(178)					0.92	0.78						1.00
	8	(203)					0.98	0.82						
	9	(229)					1.00	0.86						
	10	(254)						0.90						
	11	(279)						0.94						
	12	(305)						0.98						
	14	(356)						1.00						

1 Linear interpolation not permitted.

2 When combining multiple load adjustment factors (e.g. for a 4 anchor pattern in a corner with thin concrete member) the design can become very conservative. To optimize the design, use Hilti PROFIS Engineering software or perform anchor calculation using design equations from ACI 318 Chapter 17.

3 Spacing factor reduction in shear, f_{AV}, assumes an influence of a nearby edge. If no edge exists, then $f_{AV} = f_{AN}$.

4 Concrete thickness reduction factor in shear, f_{HV}, assumes an influence of a nearby edge. If no edge exists, then f_{HV} = 1.0.

(Shaded cell) If a reduction factor value is in a shaded cell, this indicates that this specific edge distance may not be permitted with a certain spacing (or vice versa). Check with table 5 and figure 2 of section 3.3.6 to calculate permissable edge distance, spacing and concrete thickness combinations.

Table 7 — Load Adjustment Factors for 3/8-in. diameter KWIK HUS-EZ I and KWIK HUS-EZ E in uncracked concrete [1,2]

3/8-in. KH-EZ uncracked concrete	Spacing factor in tension f_{AN}				Edge distance factor in tension f_{RN}				Spacing factor in shear [3] f_{AV}				Edge distance in shear: ⊥ toward edge f_{RV}				Edge distance in shear: II to and away from edge f_{RV}				Conc. thickness factor in shear [4] f_{HV}			
Embedment h_{nom} in. (mm)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)
Spacing (s)/edge distance (c_a)/concrete thickness (h) - in. (mm)																								
1-1/2 (38)	n/a	n/a	n/a	n/a	0.58	0.62	0.63	0.57	n/a	n/a	n/a	n/a	0.49	0.32	0.25	0.08	0.58	0.62	0.50	0.17	n/a	n/a	n/a	n/a
2 (51)	n/a	n/a	n/a	n/a	0.76	0.75	0.75	0.66	n/a	n/a	n/a	n/a	0.75	0.49	0.38	0.13	0.76	0.75	0.75	0.26	n/a	n/a	n/a	n/a
2-1/4 (57)	0.84	0.74	0.70	0.65	0.86	0.82	0.81	0.70	0.65	0.62	0.60	0.55	0.90	0.59	0.46	0.16	0.90	0.82	0.81	0.31	n/a	n/a	n/a	n/a
2-1/2 (64)	0.88	0.77	0.72	0.67	0.95	0.91	0.88	0.75	0.67	0.63	0.61	0.55	1.00	0.69	0.54	0.18	1.00	0.91	0.88	0.37	n/a	n/a	n/a	n/a
3 (76)	0.95	0.82	0.77	0.70	1.00	1.00	1.00	0.85	0.71	0.66	0.63	0.56		0.90	0.71	0.24		1.00	1.00	0.48	n/a	n/a	n/a	n/a
3-1/4 (83)	0.99	0.85	0.79	0.72				0.90	0.72	0.67	0.64	0.57		1.00	0.80	0.27				0.54	0.95	n/a	n/a	n/a
3-1/2 (89)	1.00	0.88	0.81	0.73				0.95	0.74	0.68	0.65	0.58			0.89	0.30				0.61	0.98	n/a	n/a	n/a
4 (102)		0.93	0.86	0.77				1.00	0.78	0.71	0.68	0.59			1.00	0.37				0.74	1.00	0.91	0.84	n/a
4-1/2 (114)		0.99	0.90	0.80					0.81	0.73	0.70	0.60				0.44				0.88			0.89	n/a
4-3/4 (121)		1.00	0.93	0.82					0.83	0.75	0.71	0.60				0.48				0.96			0.91	0.639
5 (127)			0.95	0.83					0.84	0.76	0.72	0.61				0.52				1.00			0.94	0.655
6 (152)			1.00	0.90					0.91	0.81	0.76	0.63				0.68							1.00	0.718
7 (178)				0.97					0.98	0.86	0.81	0.65				0.86								0.775
8 (203)				1.00					1.00	0.91	0.85	0.67				1.00								0.829
9 (229)										0.97	0.90	0.69												0.879
10 (254)										1.00	0.94	0.71												0.927
11 (279)											0.98	0.74												0.972
12 (305)											1.00	0.76												1.000
14 (356)												0.80												
16 (406)												0.84												
18 (457)												0.89												
20 (508)												0.93												
24 (610)												1.000												

Table 8 — Load Adjustment Factors for 3/8-in. diameter Hilti KWIK HUS-EZ I and KWIZ HUS-EZ E in cracked concrete [1,2]

3.3.6

3/8-in. KH-EZ cracked concrete	Spacing factor in tension f_{AN}				Edge distance factor in tension f_{RN}				Spacing factor in shear [3] f_{AV}				Edge distance in shear: ⊥ toward edge f_{RV}				Edge distance in shear: II to and away from edge f_{RV}				Conc. thickness factor in shear [4] f_{HV}			
Embedment h_{nom} in. (mm)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)	1-5/8 (41)	2-1/8 (54)	2-1/2 (64)	3-1/4 (83)
Spacing (s)/edge distance (c_a)/concrete thickness (h) - in. (mm)																								
1-1/2 (38)	n/a	n/a	n/a	n/a	0.92	0.74	0.66	0.57	n/a	n/a	n/a	n/a	0.49	0.32	0.25	0.09	0.92	0.64	0.50	0.17	n/a	n/a	n/a	n/a
2 (51)	n/a	n/a	n/a	n/a	1.00	0.90	0.79	0.66	n/a	n/a	n/a	n/a	0.76	0.50	0.39	0.13	1.00	0.90	0.77	0.26	n/a	n/a	n/a	n/a
2-1/4 (57)	0.84	0.74	0.70	0.65	1.00	0.98	0.85	0.70	0.66	0.62	0.60	0.55	0.90	0.59	0.46	0.16	1.00	0.98	0.85	0.31	n/a	n/a	n/a	n/a
2-1/2 (64)	0.88	0.77	0.72	0.67	1.00	1.00	0.92	0.75	0.67	0.63	0.61	0.55	1.00	0.69	0.54	0.18	1.00	1.00	0.92	0.37	n/a	n/a	n/a	n/a
3 (76)	0.95	0.82	0.77	0.70	1.00		1.00	0.85	0.71	0.66	0.63	0.56	1.00	0.91	0.71	0.24	1.00	1.00	1.00	0.48	n/a	n/a	n/a	n/a
3-1/4 (83)	0.99	0.85	0.79	0.72				0.90	0.73	0.67	0.64	0.57		1.00	0.80	0.27				0.55	0.95	n/a	n/a	n/a
3-1/2 (89)	1.00	0.88	0.81	0.73				0.95	0.74	0.68	0.65	0.58			0.90	0.31				0.61	0.98	n/a	n/a	n/a
4 (102)		0.93	0.86	0.77				1.00	0.78	0.71	0.68	0.59			1.00	0.37				0.75	1.00	0.91	0.84	n/a
4-1/2 (114)		0.99	0.90	0.80					0.81	0.73	0.70	0.60				0.44				0.89		0.97	0.89	n/a
4-3/4 (121)		1.00	0.93	0.82					0.83	0.75	0.71	0.60				0.48				0.97		1.00	0.92	0.64
5 (127)			0.95	0.83					0.85	0.76	0.72	0.61				0.52				1.00			0.94	0.66
6 (152)			1.00	0.90					0.92	0.81	0.77	0.63				0.69							1.00	0.72
7 (178)				0.97					0.98	0.87	0.81	0.65				0.86								0.78
8 (203)				1.00					1.00	0.92	0.85	0.67				1.00								0.83
9 (229)										0.97	0.90	0.69												0.88
10 (254)										1.00	0.94	0.72												0.93
11 (279)											0.99	0.74												0.97
12 (305)											1.00	0.76												1.00
14 (356)												0.80												
16 (406)												0.85												
18 (457)												0.89												
20 (508)												0.93												
24 (610)												1.00												

1 Linear interpolation not permitted.

2 When combining multiple load adjustment factors (e.g. for a 4 anchor pattern in a corner with thin concrete member) the design can become very conservative. To optimize the design, use Hilti PROFIS Engineering software or perform anchor calculation using design equations from ACI 318 Chapter 17.

3 Spacing factor reduction in shear, f_{AV}, assumes an influence of a nearby edge. If no edge exists, then $f_{AV} = f_{AN}$.

4 Concrete thickness reduction factor in shear, f_{HV}, assumes an influence of a nearby edge. If no edge exists, then f_{HV} = 1.0.

[shaded cell] If a reduction factor value is in a shaded cell, this indicates that this specific edge distance may not be permitted with a certain spacing (or vice versa). Check table 5 and figure 2 of this section to calculate permissable edge distance, spacing and concrete thickness combinations.

Table 9 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in the soffit of uncracked lightweight concrete over metal deck[1,2,3,4,5,6]

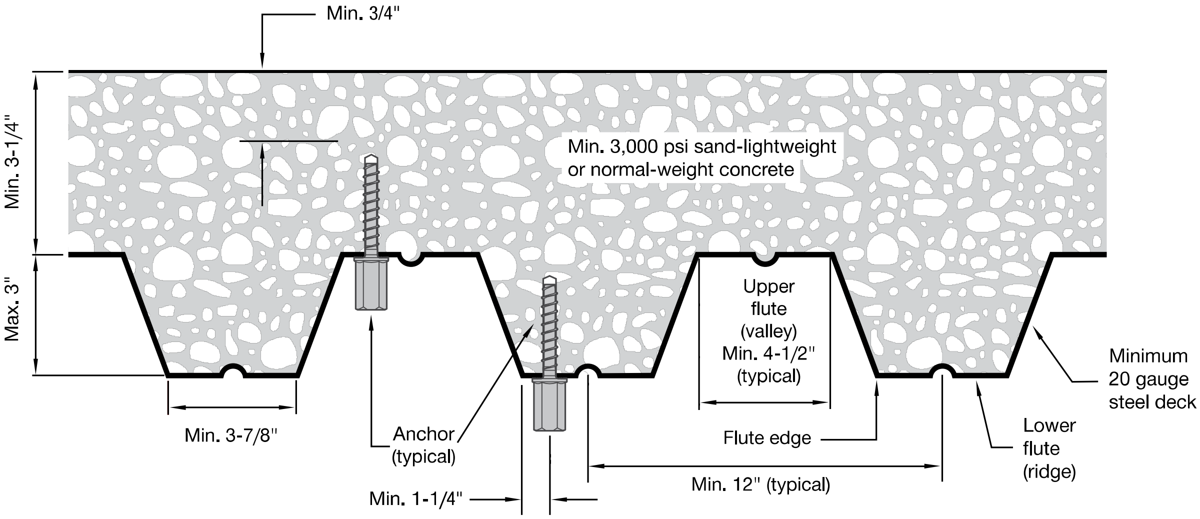
Nominal anchor diameter in.	Nominal internal thread diameter in.	Nominal embed. depth in. (mm)	Installation in lower flute				Installation in upper flute			
			Tension - ϕN_n		Shear - ϕV_n		Tension - ϕN_n		Shear - ϕV_n	
			f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)
1/4	1/4-20 UNC	1-5/8	545	595	515	515	670	730	610	610
		(41)	(2.4)	(2.6)	(2.3)	(2.3)	(3.0)	(3.2)	(2.7)	(2.7)
		2-1/2	1,220	1,410	515	515	1,275	1,470	610	610
		(64)	(5.4)	(6.3)	(2.3)	(2.3)	(5.7)	(6.5)	(2.7)	(2.7)
	3/8-16 UNC	1-5/8	545	595	615	615	670	730	915	915
		(41)	(2.4)	(2.6)	(2.7)	(2.7)	(3.0)	(3.2)	(4.1)	(4.1)
		2-1/2	1,220	1,410	615	615	1,275	1,470	915	915
		(64)	(5.4)	(6.3)	(2.7)	(2.7)	(5.7)	(6.5)	(4.1)	(4.1)
3/8	1/2-13	2-1/8	1,120	1,295	1,430	1,430	1,730	2,000	2,190	2,190
	UNC	(54)	(5.0)	(5.8)	(6.4)	(6.4)	(7.7)	(8.9)	(9.7)	(9.7)

Table 10 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in the soffit of cracked lightweight concrete over metal deck[1,2,3,4,5,6,7,8]

Nominal anchor diameter in.	Nominal internal thread diameter in.	Nominal embed. depth in. (mm)	Installation in lower flute				Installation in upper flute			
			Tension - ϕN_n		Shear - ϕV_n		Tension - ϕN_n		Shear - ϕV_n	
			f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)	f'_c = 3,000 psi (20.7 MPa) lb (kN)	f'_c = 4,000 psi (27.6 MPa) lb (kN)
1/4	1/4-20 UNC	1-5/8	280	305	515	515	330	360	610	610
		(41)	(1.2)	(1.4)	(2.3)	(2.3)	(1.5)	(1.6)	(2.7)	(2.7)
		2-1/2	605	700	515	515	635	735	610	610
		(64)	(2.7)	(3.1)	(2.3)	(2.3)	(2.8)	(3.3)	(2.7)	(2.7)
	3/8-16 UNC	1-5/8	280	325	615	615	330	380	915	915
		(41)	(1.2)	(1.4)	(2.7)	(2.7)	(1.5)	(1.7)	(4.1)	(4.1)
		2-1/2	605	700	615	615	635	735	915	915
		(64)	(2.7)	(3.1)	(2.7)	(2.7)	(2.8)	(3.3)	(4.1)	(4.1)
3/8	1/2-13	2-1/8	795	920	1,430	1,430	1,225	1,415	2,190	2,190
	UNC	(54)	(3.5)	(4.1)	(6.4)	(6.4)	(5.4)	(6.3)	(9.7)	(9.7)

1 See Section 3.1.8 to convert design strength value to ASD value.
2 Linear interpolation between embedment depths and concrete compressive strengths is not permitted.
3 Tabular value is for one anchor per flute. Minimum spacing along the length of the flute is 3 x h_{nom} (nominal embedment).
4 Tabular values are lightweight concrete and no additional reduction factor is needed.
5 No additional reduction factors for spacing or edge distance need to be applied.
6 Comparison of the tabular values to the steel strength is not necessary. Tabular Values control.
7 Tabular values are for static loads only. For seismic tenison loads, multiply cracked concrete tabular values in tension by $\alpha_{N,seis}$ = 0.75.
8 For seismic shear, an additional factor must be applied to the cracked concrete tabular values for seismic conditions:
1/4-in diameter by 1-5/8-in nominal embedment depth - $\alpha_{V,seis}$ = 0.44
1/4-in diameter by 2-1/2-in nominal embedment depth - $\alpha_{V,seis}$ = 0.85
See Section 3.1.8 for additional information on seismic applications.

Figure 2 — Installation of Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in soffit of concrete over steel deck floor and roof assemblies



1 Anchors may be placed in the upper or lower flute of the steel deck profile provided the minimum concrete cover above the drilled hole is satisfied. Anchors in the lower flute may be installed with a maximum 1-inch offset in either direction from the center of the flute. The offset distance may be increased proportionally for profiles with lower flute widths greater than those shown provided the minimum lower flute edge distance is also satisfied.

DESIGN INFORMATION IN CONCRETE PER CSA A23.3

Limit State Design of anchors is described in the provisions of CSA A23.3 Annex D for post-installed anchors tested and assessed in accordance with ACI 355.2 for mechanical anchors and ACI 355.4 for adhesive anchors. This section contains the Limit State Design tables with unfactored characteristic loads that are based on the published loads in ICC Evaluation Services ESR-3027. These tables are followed by factored resistance tables. The factored resistance tables have characteristic design loads that are prefactored by the applicable reduction factors for a single anchor with no anchor-to-anchor spacing or edge distance adjustments for the convenience of the user of this document. All the figures in the previous ACI 318 Chapter 17 design section are applicable to Limit State Design and the tables will reference these figures.

For a detailed explanation of the tables developed in accordance with CSA A23.3 Annex D, refer to Section 3.1.8. Technical assistance is available by contacting Hilti Canada at (800) 363-4458 or at www.hilti.com.

Table 11 — Steel resistance for Hilti KWIK HUS-EZ I and KWIK HUS-EZ E carbon steel screw anchor[1,2]

Nominal anchor diameter in.	Internal thread diameter (UNC)	Tensile[3] N_{sar} lb (kN)	Shear[4] V_{sar} lb (kN)	Seismic shear[5] $V_{sar,eq}$ lb (kN)
1/4	1/4-20	3,370 (15.0)	750 (3.3)	335 (1.5)
1/4	3/8-16	3,370 (15.0)	725 (3.2)	620 (2.8)
3/8	1/2-13	5,515 (24.5)	1,040 (4.6)	1,040 (4.6)

1 See Section 3.1.8 of Hilti Product Technical Guide Ed 21 to convert factored resistance value to ASD value.
2 Hilti KWIK HUS-EZ I carbon steel screw anchors are to be considered brittle steel elements.
3 Tensile $N_{sar} = A_{se,N}\ \phi_s\ f_{uta}\ R$ as noted in CSA A23.3 Annex D.
4 Shear determined by static shear tests with $V_{sar} < 0.6\ A_{se,V}\ \phi_s\ f_{uta}\ R$ as noted in CSA A23.3 Annex D.
5 Seismic shear values determined by seismic shear tests with $V_{sar,eq} \leq 0.60\ A_{se,V}\ \phi_s\ f_{uta}\ R$ as noted in CSA A23.3 Annex D. See Section 3.1.8 of Hilti Product Technical Guide Ed 21 for additional information on seismic applications.

Table 12 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E design information in accordance with CSA A23.3 Annex D[1]

Design parameter		Symbol	Units	Nominal anchor diameter 1/4		3/8	Ref A23.3
Anchor O.D.		d_a	in. (mm)	0.25 (6.4)		0.375 (9.5)	
Effective embedment[2]		h_{ef}	in. (mm)	1.18 (30)	1.92 (49)	1.54 (39)	
Minimum nominal embedment[2]		h_{nom}	in. (mm)	1-5/8 (41)	2-1/2 (64)	2 1/8 (54)	
Minimum concrete thickness		h_{min}	in. (mm)	3-1/4 (83)	4-1/8 (105)	3 5/8 (92)	
Critical edge distance		c_{ac}	in. (mm)	2.00 (51)	2.78 (71)	2.75 (70)	
Minimum spacing at critical edge distance		$s_{min,cac}$	in. (mm)	1.5 (38)		2.25 (57)	
Minimum edge distance		c_{min}	in. (mm)	1.50 (38)		1.5 (38)	
Minimum anchor spacing at minimum edge distance		for s >	in. (mm)	3.0 (76)		3 (76)	
Mininimum hole depth in concrete		h_0	in. (mm)	2 (51)	2-7/8 (73)	2 3/8 (60)	
Minimum specified ultimate strength		f_{uta}	psi (N/mm²)	125,000 (862)		106,975 (826)	
Effective tensile stress area		$A_{se,N}$	in² (mm²)	0.045 (29.0)		0.086 (55.5)	
Steel embed. material resistance factor for reinforcement		ϕ_s	-	0.85			8.4.3
Resistance modification factor for tension, steel failure modes[3]		R	-	0.70			D.5.3
Resistance modification factor for shear, steel failure modes[3]		R	-	0.65			D.5.3
Factored steel resistance in tension		N_{sar}	lb (kN)	3,370 (15.0)		5,475 (24.4)	D.6.1.2
Factored steel resistance in shear	1/4-20 UNC internal thread	V_{sar}	lb (kN)	750 (3.3)		N/A	D.7.1.2
Factored steel resistance in shear, seismic	1/4-20 UNC internal thread	$V_{sar,eq}$	lb (kN)	335 (1.5)		N/A	
Factored steel resistance in shear	3/8-16 UNC internal thread	V_{sar}	lb (kN)	725 (3.2)		N/A	D.7.1.2
Factored steel resistance in shear, seismic	3/8-16 UNC internal thread	$V_{sar,eq}$	lb (kN)	620 (2.8)		N/A	
Factored steel resistance in shear	1/2-13 UNC internal thread	V_{sar}	lb (kN)	N/A		1040 (4.6)	
Factored steel resistance in shear, seismic	1/2-13 UNC internal thread	$V_{sar,eq}$	lb (kN)	N/A		1040 (4.6)	
Coeff. for factored conc. breakout resistance, uncracked concrete		$k_{c,uncr}$	-	10			D.6.2.2
Coeff. for factored conc. breakout resistance, cracked concrete		$k_{c,cr}$	-	7			D.6.2.2
Modification factor for anchor resistance, tension, uncracked conc.[4]		$\psi_{c,N}$	-	1.0			D.6.2.6
Anchor category		-	-	3	1	1	D.5.3 (c)
Concrete material resistance factor		ϕ_c	-	0.65			8.4.2
Resistance modification factor for tension and shear, concrete failure modes, Condition B[5]		R	-	0.75	1.00	1.00	D.5.3 (c)
Factored pullout resistance in 20 MPa uncracked concrete[6]		$N_{pr,uncr}$	lb (kN)	665 (3.0)	1,645 (7.3)	N/A	D.6.3.2
Factored pullout resistance in 20 MPa cracked concrete[6]		$N_{pr,cr}$	lb (kN)	340 (1.5)	815 (3.6)	N/A	D.6.3.2
Factored seismic pullout resistance in 20 MPa cracked concrete[6]		$N_{pr,eq}$	lb (kN)	275 (1.2)	815 (3.6)	N/A	D.6.3.2

1 Design information in this table is taken from ICC-ES ESR-3027, tables 6, 7, and 8, and converted for use with CSA A23.3 Annex D.
2 See figure 1 of this section.
3 The KWIK HUS-EZ I is considered a brittle steel element as defined by CSA A23.3 Annex D section D.2.
4 For all design cases, $\psi_{c,N}$ = 1.0. The appropriate coefficient for breakout resistance for cracked concrete ($k_{c,cr}$) or uncracked concrete ($k_{c,uncr}$) must be used.
5 For use with the load combinations of CSA A23.3 chapter 8. Condition B applies where supplementary reinforcement in conformance with CSA A23.3 section D.5.3 is not provided, or where pullout or pryout strength governs. For cases where the presence of supplementary reinforcement can be verified, the resistance modification factors associated with Condition A may be used.
6 For all design cases, $\psi_{c,P}$ = 1.0. NA (not applicable) denotes that this value does not control for design. See section 4.1.4 of ESR-3027 for additional information.

Table 13 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E carbon steel screw anchor factored resistance with concrete/pullout failure in uncracked concrete[1,2,3,4,5]

Nominal anchor diameter in.	Effective embed. in. (mm)	Nominal embed. in. (mm)	Effectiveness Factor	Strength Reduction Factor Tension	Concrete material resistance factor	Pullout Strength (2500 psi concrete)	Tension - N_r				Shear - V_r			
							f'_c = 20 MPa (2,900 psi) lb (kN)	f'_c = 25 MPa (3,625 psi) lb (kN)	f'_c = 30 MPa (4,350 psi) lb (kN)	f'_c = 40 MPa (5,800 psi) lb (kN)	f'_c = 20 MPa (2,900 psi) lb (kN)	f'_c = 25 MPa (3,625 psi) lb (kN)	f'_c = 30 MPa (4,350 psi) lb (kN)	f'_c = 40 MPa (5,800 psi) lb (kN)
1/4	1.18 (30)	1-5/8 (41)	10	0.75	0.65	1305 (5.8)	665 (3.0)	710 (3.2)	750 (3.3)	820 (3.6)	805 (3.6)	900 (4.0)	985 (4.4)	1,135 (5.1)
	1.92 (49)	2-1/2 (64)	10	1	0.65	2350 (10.5)	1,645 (7.3)	1,840 (8.2)	2,015 (9.0)	2,325 (10.3)	2,225 (9.9)	2,490 (11.1)	2,725 (12.1)	3,145 (14.0)
3/8	1.54 (39)	2-1/8 (54)	10	1	0.65	N/A	1,595 (7.1)	1,785 (7.9)	1,955 (8.7)	2,260 (10.0)	1,595 (7.1)	1,785 (7.9)	1,955 (8.7)	2,260 (10.0)

Table 14 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E carbon steel screw anchor factored resistance with concrete/pullout failure in cracked concrete[1,2,3,4,5]

Nominal anchor diameter in.	Effective embed. in. (mm)	Nominal embed. in. (mm)	Effectiveness Factor	Strength Reduction Factor Tension	Concrete material resistance factor	Pullout Strength (2500 psi concrete)	Tension - N_r				Shear - V_r			
							f'_c = 20 MPa (2,900 psi) lb (kN)	f'_c = 25 MPa (3,625 psi) lb (kN)	f'_c = 30 MPa (4,350 psi) lb (kN)	f'_c = 40 MPa (5,800 psi) lb (kN)	f'_c = 20 MPa (2,900 psi) lb (kN)	f'_c = 25 MPa (3,625 psi) lb (kN)	f'_c = 30 MPa (4,350 psi) lb (kN)	f'_c = 40 MPa (5,800 psi) lb (kN)
d_a in (mm)	h_{ef} (mm)	h_{nom} (mm)	k_{cr}	R	Φ_c	$N_{p,uncr}$ (N/mm²)	20	25	30	40	20	25	30	40
1/4	1.18 (30)	1-5/8 (41)	7	0.75	0.65	665 (3.0)	340 (1.5)	360 (1.6)	385 (1.7)	415 (1.9)	565 (2.5)	630 (2.8)	690 (3.1)	795 (3.5)
	1.92 (49)	2-1/2 (64)	7	1	0.65	1165 (5.2)	815 (3.6)	910 (4.1)	1,000 (4.4)	1,155 (5.1)	1,800 (8.0)	1,740 (7.7)	1,910 (8.5)	2,205 (9.8)
3/8	1.54 (39)	2-1/8 (54)	7	1	0.65	N/A	1,120 (5.0)	1,250 (5.6)	1,370 (6.1)	1,580 (7.0)	1,120 (5.0)	1,250 (5.6)	1,370 (6.1)	1,580 (7.0)

3.3.8

1 See section 3.1.8 to convert design strength value to ASD value.

2 Linear interpolation between embedment depths and concrete compressive strengths is not permitted.

3 Apply spacing, edge distance, and concrete thickness factors in tables 5 to 6 as necessary. Compare to the steel values in table 9. The lesser of the values is to be used for the design.

4 Tabular values are for normal weight concrete only. For lightweight concrete multiply design strength by λ_a as follows: for sand-lightweight, λ_a = 0.68; for all-lightweight, λ_a = 0.60

5 5 Tabular values are for static loads only. Seismic design is not permitted for uncracked concrete. For seismic tension loads, multiply cracked concrete tabular values in tension by the following reduction factors:
1/4-in diameter by 1-5/8-in nominal embedment depth - $\alpha_{N,seis}$ = 0.60
1/4-in diameter by 2-1/2-in nominal embedment depth - $\alpha_{N,seis}$ = 0.75.
No reduction needed for seismic shear. See section 3.1.8 for additional information on seismic applications.

Table 15 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in the soffit of uncracked lightweight concrete over metal deck[1,2,3,4,5,6,7]

Nominal anchor diameter in.	Nominal internal thread diameter in.	Nominal embed. depth in. (mm)	Installation in lower flute				Installation in upper flute			
			Tension - N_r		Shear - V_r		Tension - N_r		Shear - V_r	
			f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN
1/4	1/4-20 UNC	1-5/8 (41)	585 (2.6)	660 (2.9)	475 (2.1)	475 (2.1)	720 (3.2)	810 (3.6)	560 (2.5)	560 (2.5)
		2-1/2 (64)	1,200 (5.3)	1,470 (6.5)			1,255 (5.6)	1,535 (6.8)		
1/4	3/8-16 UNC	1-5/8 (41)	585 (2.6)	660 (2.9)	565 (2.5)	565 (2.5)	720 (3.2)	810 (3.6)	845 (3.8)	845 (3.8)
		2-1/2 (64)	1,200 (5.3)	1,470 (6.5)			1,255 (5.6)	1,535 (6.8)		
3/8	1/2-13 UNC	2-1/8 (54)	1,100 (4.9)	1,345 (6.0)	1,315 (5.8)	1,315 (5.8)	1,865 (8.3)	2,280 (10.1)	2,015 (9.0)	2,015 (9.0)

Table 16 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E in the soffit of cracked lightweight concrete over metal deck[1,2,3,4,5,6,7,8]

Nominal anchor diameter in.	Nominal internal thread diameter in.	Nominal embed. depth in. (mm)	Installation in lower flute				Installation in upper flute			
			Tension - N_r		Shear - V_r		Tension - N_r		Shear - V_r	
			f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN	f'_c = 20 MPa (2,900 psi) kN	f'_c = 30 MPa (4,350 psi) kN
1/4	1/4-20 UNC	1-5/8 (41)	300 (1.3)	340 (1.5)	475 (2.1)	475 (2.1)	365 (1.6)	415 (1.8)	560 (2.5)	560 (2.5)
		2-1/2 (64)	595 (2.6)	730 (3.2)			625 (2.8)	765 (3.4)		
1/4	3/8-16 UNC	1-5/8 (41)	300 (1.3)	340 (1.5)	565 (2.5)	565 (2.5)	365 (1.6)	415 (1.8)	845 (3.8)	845 (3.8)
		2-1/2 (64)	595 (2.6)	730 (3.2)			625 (2.8)	765 (3.4)		
3/8	1/2-13 UNC	2-1/8 (54)	780 (3.5)	955 (4.2)	1,315 (5.8)	1,315 (5.8)	1,305 (5.8)	1,595 (7.1)	2,015 (9.0)	2,015 (9.0)

1 See Section 3.1.8 to convert design strength value to ASD value.
2 Linear interpolation between embedment depths and concrete compressive strengths is not permitted.
3 Tabular value is for one anchor per flute. Minimum spacing along the length of the flute is 6 3/8 inches.
4 Tabular value is for lightweight concrete and no additional reduction factor is needed.
5 No additional reduction factors for spacing or edge distance need to be applied.
6 Comparison of the tabular values to the steel strength is not necessary. Tabular values control.
7 Tabular values are for static loads only. For seismic conditions $\alpha_{N,seis}$ = 0.75
8 For seismic shear, an additional factor must be applied to the cracked concrete tabular values for seismic conditions: $\alpha_{v,seis}$, = 0.85
See Section 3.1.8 for additional information on seismic applications.

ALLOWABLE STRESS DESIGN FOR FM SPRINKLER SYSTEMS

Table 17 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E tested load values for FM approval for automatic sprinkler systems[1]

Anchor diamenter in.	Hanger rod size	Nominal embedment in.	FM tension test load lb.	FM maximum pipe diameter in.
1/4	3/8-16 UNC	1-5/8	1,475	4
		2-1/2		
3/8	1/2-13 UNC	2-1/8	3,800	8

1 Tested in accordance with FM Approval Standard for Pipe Hanger Components for Automatic Sprinklers Systems Class Numbers 1951, 1952 and 1953.

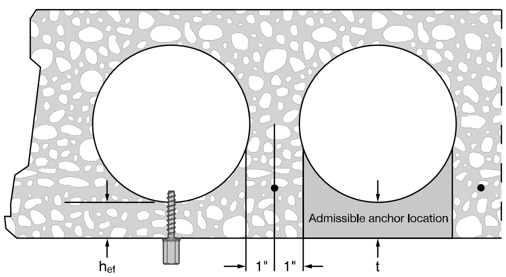
DESIGN INFORMATION IN HOLLOW CORE CONCRETE PER ALLOWABLE STRESS DESIGN

Table 18 — Hilti KWIK HUS-EZ I and KWIK HUS-EZ E load values for installations into hollow core concrete panels[1,2]

Hanger rod size	anchor diameter in.	Min. effective embedment h_{ef} in.	Min.effective base material thickness t in.	Allowable load[3]		Ultimate load	
				Tension lb	Shear lb[4,5]	Tension lb	Shear lb[4,5]
1/4-20 UNC	1/4	1-3/8	1-3/8	455	485	1,810	1,930
3/8-16 UNC	1/4				755		3,025
1/2-13 UNC	3/8	1-1/8	1-1/8	435	N/A	1,750	N/A

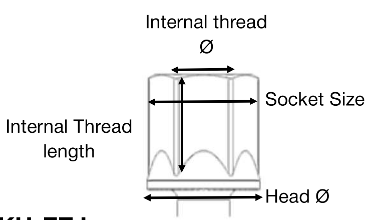
1 The admissible anchor location must be established to prevent damage to the prestressed cable during the drilling process. Verify the location and height of the cable with the hollow core plank supplier to confirm admissible anchor location.
2 Minimum compressive strength of prestressed concrete is 7,000 psi. Published ultimate loads represent the average results conducted in local base materials. Due to variations in materials and dimensionl configurations, on-site testing is required to determine the actual performance.
3 Allowable loads calculated with a factor of safety of 4
4 The bottom of the shear plane adjacent to the top of the coupler.
5 Shear values controlled by the steel strength of the screws used to fasten the shear fixture to the KH EZ-I Screw Anchor. The minimum tensile strength of the screw was 125 ksi. Shear design values should consider the screw or threaded rod steel strength.

Figure 3 — Installation of Hilti KWIK HUS–EZ I and KH-EZ E in hollow core concrete



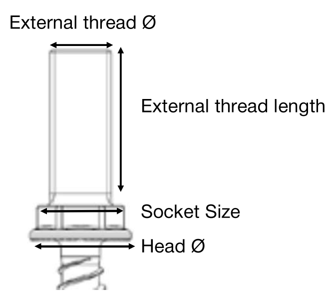
INSTALLATION INSTRUCTIONS

Installation Instructions For Use (IFU) are included with each product package. They can also be viewed or downloaded online at www.hilti.com. Because of the possibility of changes, always verify that downloaded IFU are current when used. Proper installation is critical to achieve full performance. Training is available on request. Contact Hilti Technical Services for applications and conditions not addressed in the IFU.



KH-EZ I

KH-EZ Ø	Socket Size	Head Ø	Internal thread Ø	Internal thread length
1/4''	3/8''	0.59''	1/4''	0.37''
1/4''	1/2''	0.65''	3/8''	0.45''
3/8''	11/16''	0.81''	1/2''	0.46''



KH-EZ E

KH-EZ Ø	Socket Size	Min Socket Height	Head Ø	Internal thread Ø	Internal thread length	Total Head height
1/4''	1/2''	1-1/2''	0.65''	3/8''	1.08''	1.32''

ORDERING INFORMATION[1]

Description	Internal thread diameter	Internal thread length	Drill bit diameter	Minimum embedment	Qty / box
KWIK HUS-EZ 1/4x1-5/8 | 1/4	1/4	3/8	1/4	1-5/8	100
KWIK HUS-EZ 1/4x2-1/2 | 1/4	1/4	3/8	1/4	2-1/2	100
KWIK HUS-EZ 1/4x1-5/8 | 3/8	3/8	7/16	1/4	1-5/8	100
KWIK HUS-EZ 1/4x2-1/2 | 3/8	3/8	7/16	1/4	2-1/2	100
KWIK HUS-EZ 3/8x2-1/8 | 1/2	1/2	1/2	3/8	2-1/8	100
KWIK HUS-EZ 1/4x1-5/8 E 3/8	3/8	1	1/4	1-5/8	100

1 All dimensions in inches.