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Calculated Allowable Loads / Bearing & Pullover for PDF Connections

Calculation Sheet: PDF's-01 MAM 12/10/04

Hilti Anchors (PDF in Steel) Allowable Loads

Material Thickness (mils)	Yeild Strength Fy (ksi)	Hilti X-EDNI (Dia.=0.145")				Hilti X-DNI (Dia.=0.145")				Hilti X-DS (Dia.=0.177")			
		3/16"		1/4"		3/16"		1/4"		3/16"		1/4"	
		Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension
33	33	203	234	203	234	203	234	203	234	248	234	248	234
43	33	265	304	265	304	265	304	265	304	323	304	323	304
54	33	332	382	332	382	332	360	332	382	406	382	406	382
	50	425	455	480	552	480	360	480	510	586	390	586	552
68	33	419	455	419	481	419	360	419	481	511	390	511	481
	50	425	455	605	695	490	360	590	510	738	390	625	620
97	33	425	455	597	686	490	360	590	510	729	390	625	620
	50	425	455	620	800	490	360	590	510	795	390	625	620
118	33	425	455	620	800	490	360	590	510	795	390	625	620
	50	425	455	620	800	490	360	590	510	795	390	625	620

Hilti Anchors (PDF in Concrete) Allowable Loads

Material Thickness (mils)	Yeild Strength Fy (ksi)	Hilti X-DNI (Dia.=0.145") Min. Embedment 3/4"						Hilti X-DNI (Dia.=0.145") Min. Embedment 1"					
		2000 psi		3000 psi		4000 psi		2000 psi		3000 psi		4000 psi	
		Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension
33	33	95	70	110	90	125	110	140	90	160	120	185	155
43	33	95	70	110	90	125	110	140	90	160	120	185	155
54	33	95	70	110	90	125	110	140	90	160	120	185	155
	50	95	70	110	90	125	110	140	90	160	120	185	155
68	33	95	70	110	90	125	110	140	90	160	120	185	155
	50	95	70	110	90	125	110	140	90	160	120	185	155
97	33	95	70	110	90	125	110	140	90	160	120	185	155
	50	95	70	110	90	125	110	140	90	160	120	185	155
118	33	95	70	110	90	125	110	140	90	160	120	185	155
	50	95	70	110	90	125	110	140	90	160	120	185	155

Hilti Anchors (PDF in Concrete) Allowable Loads

Material Thickness (mils)	Yeild Strength Fy (ksi)	Hilti X-DNI (Dia.=0.145") Min. Embedment 1 1/2"					
		2000 psi		3000 psi		4000 psi	
		Shear	Tension	Shear	Tension	Shear	Tension
33	33	203	165	203	190	203	215
43	33	230	165	265	190	265	215
54	33	230	165	280	190	332	215
	50	230	165	280	190	335	215
68	33	230	165	280	190	335	215
	50	230	165	280	190	335	215
97	33	230	165	280	190	335	215
	50	230	165	280	190	335	215
118	33	230	165	280	190	335	215
	50	230	165	280	190	335	215

	Min. Edge Distance	Min. Spacing	Min. Material Thickness
Steel	1/4"	1"	1/8"
Concrete	2"	3"	3 x Embedment

Table Notes:

1. All values were calculated using the 2001 AISI Specification
2. Shear values were based on the tilting and bearing modes of failure Eq. E4.3.1-1, E.4.3.1-2
3. Allowable loads are based on a Safety Factor of 3.0
4.) E4.3.2 states that the Bearing Strength < Pns = t*e*Fu