



Load Parallel to Structural Member

Wedge Anchors in 3000 psi Lightweight Cracked Concrete										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	2	110	206	410	236	206	191	396	492	551
1/2	3/4	245	467	970	559	467	426	1021	1239	1368
5/8	4	344	661	1406	811	661	597	1569	1876	2055
3/4	4 3/4	446	859	1839	1061	859	774	2078	2476	2706

Wedge Anchors in 4000 psi Normal Weight Cracked Concrete										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	2	196	342	600	346	342	341	473	616	711
1/2	3/4	443	797	1477	852	797	769	1264	1616	1842
5/8	4	627	1147	2198	1268	1147	1088	1990	2513	2843
3/4	4 3/4	816	1498	2891	1668	1498	1414	2653	3339	3770

Wedge Anchors in 6000 psi Normal Weight Cracked Concrete										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	2	232	394	661	381	394	402	492	648	754
1/2	3/4	528	928	1649	951	928	916	1326	1720	1979
5/8	4	750	1344	2474	1428	1344	1300	2102	2694	3077
3/4	4 3/4	976	1756	3261	1882	1756	1691	2807	3587	4089

Wedge Anchors in 3000 psi Lightweight Concrete-Filled Metal Decking										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	2	116	216	420	—	—	—	—	—	—
1/2	3/4	215	406	826	—	—	—	—	—	—
5/8	4	369	673	1282	—	—	—	—	—	—

Wedge Anchors in 3000 psi Normal Weight Cracked Concrete										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	2	173	308	557	321	308	301	458	591	678
1/2	3/4	391	713	1358	784	713	678	1215	1537	1741
5/8	4	553	1021	2008	1159	1021	956	1904	2378	2671
3/4	4 3/4	717	1332	2638	1523	1332	1243	2536	3155	3537

Undercut Anchors in 3000 psi Normal Weight Concrete										
Diameter (in.)	Embedment (in.)	A	B	C	D	E	F	G	H	I
3/8	4	685	1106	1714	989	1106	1187	1171	1571	1849
1/2	5	855	1479	2552	1473	1479	1483	1975	2582	2988
5/8	7 1/2	1153	2041	3675	2121	2041	1997	3022	3902	4478

Connections to Steel (Values Assume Bolt Perpendicular to Mounting Surface)																			
Diameter of Unfinished Steel Bolt (in.)																			
1/4										3/8									
A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	A	B
400	500	600	300	500	650	325	458	565	900	1200	1400	800	1200	1550	735	1035	1278		
Diameter of Unfinished Steel Bolt (in.)																			
1/2										5/8									
A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	A	B
1600	2050	2550	1450	2050	2850	1300	1830	2260	2500	3300	3950	2250	3300	4400	2045	2880	3557		

Through-Bolts in Sawn Lumber or Glue-Laminated Timbers (Load Perpendicular to Grain)																											
Length of Bolt in Timber (in.)		Bolt Diameter (in.)																									
		1/2										3/4										5/8					
		A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H
1 1/2	115	165	200	135	230	395	130	215	310	135	190	235	155	270	460	155	255	380	155	220	270	180	310	530	170	300	450
2 1/2	140	200	240	160	280	480	165	275	410	160	225	280	185	320	550	190	320	495	180	255	310	205	360	615	215	365	575
3 1/2	175	250	305	200	350	600	200	330	485	200	285	345	230	400	685	235	405	635	220	310	380	255	440	755	260	455	730
5 1/2	—	—	—	—	—	—	—	—	—	280	395	485	325	560	960	315	515	735	310	440	535	360	620	1065	360	610	925

Lag Screws and Lag Bolts in Wood (Load Perpendicular to Grain — Holes Predrilled Using Good Practice)																											
Length Under Head (in.)		Lag Bolt Diameter (in.)																									
		3/8										1/2										5/8					
		A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H
3 1/2	165	190	200	170	220	310	80	120	170	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4 1/2	180	200	200	175	235	350	80	120	170	300	355	380	315	400	550	145	230	325	—	—	—	—	—	—	—	—	—
5 1/2	190	200	200	175	245	380	80	120	170	320	370	380	320	420	610	145	230	325	435	525	555	425	550	775	195	320	460
6 1/2	195	205	200	175	250	400	80	120	170	340	375	380	325	435	650	145	230	325	465	540	555	430	570	840	195	320	460

Note: Wood fastener maximum capacity values are based on 2001 National Design Specifications (NDS) for wood with a specific gravity of 0.35. Values for other types of wood can be obtained by multiplying the above values by the following factors:

Specific Gravity of Wood	Multiplier
0.36 thru 0.49	1.17
0.50 thru 0.65	1.25
0.66 thru 0.73	1.50

For SI values, 1 in. = 25.4 mm.

FIGURE 9.3.5.9.1 Maximum Loads for Various Types of Structures and Maximum Loads for Various Types of Fasteners to Structures.