REFERENCE LATERAL DESIGN VALUES (Z) FOR CONNECTIONS IN SAWN LUMBER (LB)[1,2,3]

Fastener Type	Part Number	Screw Length, L (in.)	Thread Length, T (in.)	Minimum Side Member Thickness (in.)	Minimum Main Member Penetration[4] (in.)	Wood Species (Specific Gravity)	
						SP (0.55) / DF-L (0.50)	
						$Z_{\parallel}$	$Z_{\perp}$
SWH	SWH3	3	2-1/4	1.50	1.50	420	330
	SWH35	3-1/2	2-3/4				
	SWH45	4-1/2	3-1/4				
	SWH5	5	3-1/4	1.50	3.50	500	330
	SWH6	6	4-1/4				
	SWH8	8	3-1/4				
SWF	SWF278	2-7/8	2-1/4	1.50	1.20	425	330
	SWF338	3-3/8	2-1/4				
	SWF358	3-5/8	2-1/4				
	SWF45	4-1/2	2-1/4	1.50	1.50	420	330
	SWF5	5	2-1/4				
	SWF6	6	2-1/4				
	SWF638	6-3/8	2-1/4				
	SWF634	6-3/4	2-1/4				
	SWF8	8	2-1/4				
SWT	SWT45	4-1/2	4-5/16	1.50	3.00	295[5]	
	SWT6	6	5-13/16				
SWL	SWL3	2-7/8	1-1/2	1.50	1.38	240	85

NOTES:

1. Reference lateral design values apply to two-member single shear connections where both members are of the same specific gravity and the fastener is oriented perpendicular to grain, unless otherwise noted.
2. Tabulated lateral design values (Z) shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1
3. $Z_{\perp}$= Lateral Design Values Perpendicular to Grain, $Z_{\parallel}$ = Lateral Design Values Parallel to Grain.
4. Fastener main member penetration is the length embedded in the main member, including the tip.
5. Value is applicable where the main member is loaded parallel to grain and the side member is loaded perpendicular to grain.

REFERENCE WITHDRAWAL DESIGN VALUES (LB/IN) AND MAXIMUM WITHDRAWAL DESIGN VALUES (LB)[1,2]

Fastener Type	Part Number	Screw Length, L (in.)	Thread Length, T (in.)	Wood Species (Specific Gravity)		
				SP (0.55) / DF-L (0.50)		
				Per Inch Thread Penetration (Includes Tip) (lb/in.)	Per Inch Thread Penetration (Excludes Tip) (lb/in.)	Max. Withdrawal Value[1,2] (lb)
SWH	SWH15	1-1/2	1-1/4	310	390	405
	SWH2	2	1-3/4			600
	SWH25	2-1/2	2-1/4			795
	SWH3	3	2-1/4			
	SWH35	3-1/2	2-3/4			990
	SWH45	4-1/2	3-1/4			1180
	SWH5	5	3-1/4			
	SWH6	6	4-1/4			1435
	SWH8	8	3-1/4			1180
SWH #9 & #10	SWH915	1-1/2	1-13/64	255	255	305
	SWH925	2-1/2	1-13/64			
	SWH1015	1-1/2	1-13/64			
	SWH1025	2-1/2	1-13/64			
SWF	SWF278	2-7/8	2-1/4	340	480	935
	SWF338	3-3/8	2-1/4			
	SWF358	3-5/8	2-1/4			
	SWF45	4-1/2	2-1/4			
	SWF5	5	2-1/4			
	SWF6	6	2-1/4			
	SWF638	6-3/8	2-1/4			
	SWF634	6-3/4	2-1/4			
	SWF8	8	2-1/4			
SWT	SWT45	4-1/2	4-5/16	335	-	940
	SWT6	6	5-13/16			940
SWL	SWL15	1-1/8	1-1/2	225	-	250
	SWL3	2-7/8	1-1/2			335

NOTES:

1. Tabulated withdrawal values (W) shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1.
2. Minimum fastener penetration into main member of 1" is required. Fastener penetration is the threaded length embedded in the main member.

REFERENCE LATERAL DESIGN VALUES (Z) FOR CONNECTIONS WITH STEEL SIDE PLATE (LB)[1,2,3]

Fastener Name	Minimum Side Member Thickness[4] (in.)	Minimum Main Member Penetration[3]	Wood Species (Specific Gravity)	
			SP (0.55) / DF-L (0.50)	
			$Z_{\parallel}$	$Z_{\perp}$
SWH15	0.075 (14 ga)	1.425	260	260
	0.105 (12 ga)	1.395	260	260
	0.120 (11 ga)	1.380	260	260
	0.134 (10 ga)	1.366	260	260
	0.179 (7 ga)	1.321	260	260
	0.239 (3 ga)	1.261	260	260
SWH2	0.075 (14 ga)	1.925	330	330
	0.105 (12 ga)	1.895	330	330
	0.120 (11 ga)	1.880	330	330
	0.134 (10 ga)	1.866	330	330
	0.179 (7 ga)	1.821	330	330
	0.239 (3 ga)	1.761	330	330
SWH25	0.075 (14 ga)	2.425	400	400
	0.105 (12 ga)	2.395	400	400
	0.120 (11 ga)	2.380	400	400
	0.134 (10 ga)	2.366	430	430
	0.179 (7 ga)	2.321	430	430
	0.239 (3 ga)	2.261		
SWH3 SWH35 SWH45	0.075 (14 ga)	2.925	710	595
	0.105 (12 ga)	2.895	730	615
	0.120 (11 ga)	2.880	740	625
	0.134 (10 ga)	2.866	750	630
	0.179 (7 ga)	2.821	780	660
	0.239 (3 ga)	2.761	780	660
SWH5 SWH6 SWH8	0.075 (14 ga)	4.925	825	820
	0.105 (12 ga)	4.895	790	815
	0.120 (11 ga)	4.880	775	810
	0.134 (10 ga)	4.866	760	810
	0.179 (7 ga)	4.821	710	800
	0.239 (3 ga)	4.761	710	800
SWH915	0.075 (20 ga)	1.465	205	205
SWH925		1.465	250	270
SWH1015	0.075 (20 ga)	1.465	225	220
SWH1025		1.465	270	290
SWL15	0.048 (18 ga)	1.330	330	310
SWL3				

NOTES:

1. Tabulated lateral design values (Z) shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1.
2. $Z_{\perp}$= Lateral Design Values Perpendicular to Grain, $Z_{\parallel}$ = Lateral Design Values Parallel to Grain.
3. Fastener main member penetration is the length embedded in the main member, including the tip.
4. Tabulated allowable shear values apply to assemblies having a wood main member with a specific gravity of at least 0.50 and a steel side plate with an ultimate tensile strength of at least 65 ksi.

REFERENCE HEAD PULL-THROUGH DESIGN VALUES (LB)[1,2]

Fastener Type	Head Diameter (in.)	Wood Species (Specific Gravity)
		SP (0.55) / DF-L (0.50)
SWH	0.540	790
SWF	0.750	1210
SWL	0.365	430

NOTES:

1. Tabulated pull-through values (P) shall be adjusted by all applicable adjustment factors per NDS Table 11.3.1.
2. Pull-through design values apply to connections having a minimum wood side member thickness of at least 1.5".