



The following excerpt are pages from the North American Product Technical Guide, Volume 1: Direct Fastening, Edition 15.

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: <http://submittals.us.hilti.com/PTGVol1/>

To consult directly with a team member regarding our direct 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](mailto:HNATechnicalServices@hilti.com)

CA: 1-800-363-4458, ext. 6 or [CATechnicalServices@hilti.com](mailto:CATechnicalServices@hilti.com)

Optimized Diaphragm Shear Tables 3.5.6

Span = 4'-0"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
272	289	36/3-48	36/3-48	36/3-48	36/3-48	36/3-48	36/3-48	36/4-48	36/4-48	36/4-48	36/4-48
291	309	36/3-48	36/3-48	36/3-48	36/3-48	36/3-33	36/3-48	36/4-48	36/4-48	36/4-48	36/4-48
311	331	36/3-42	36/3-48	36/3-48	36/3-48	36/3-24	36/3-48	36/4-48	36/4-36	36/4-48	36/4-48
333	354	36/3-30	36/3-48	36/3-48	36/3-48	36/3-18	36/3-48	36/4-48	36/4-24	36/4-48	36/4-48
356	379	36/3-24	36/3-48	36/3-48	36/3-48	36/3-15	36/3-48	36/4-48	36/4-20	36/4-48	36/4-48
381	406	36/3-18	36/3-48	36/3-48	36/3-48	36/4-24	36/3-36	36/4-48	36/4-18	36/4-48	36/4-48
408	434	36/3-14	36/3-42	36/3-48	36/3-48	36/4-18	36/3-27	36/4-48	36/4-14	36/4-48	36/4-48
437	464	36/4-20	36/3-30	36/3-48	36/3-48	36/4-15	36/3-21	36/4-48	36/4-12	36/4-36	36/4-48
467	497	36/4-18	36/3-20	36/3-48	36/3-48	36/4-12	36/3-15	36/4-48	36/5-16	36/4-24	36/4-42
500	532	36/4-14	36/3-18	36/3-36	36/3-42	36/5-18	36/3-12	36/4-48	36/5-14	36/4-20	36/4-36
535	569	36/4-12	36/4-24	36/3-24	36/3-30	36/5-14	36/4-21	36/4-45	36/9-48	36/4-18	36/4-24
572	609	36/5-16	36/4-20	36/3-20	36/3-24	36/5-12	36/4-16	36/4-33	36/9-48	36/4-14	36/4-20
612	651	36/5-14	36/4-18	36/3-16	36/3-18	36/5-9	36/4-14	36/4-27	36/9-30	36/4-12	36/4-18
655	697	36/5-10	36/4-14	36/4-24	36/3-14	36/5-8	36/5-20	36/4-21	36/9-20	36/5-18	36/4-14
701	746	36/5-8	36/4-12	36/4-20	36/4-24	36/5-6	36/4-9	36/4-18	36/9-16	36/5-14	36/4-12
750	798	36/5-7	36/5-16	36/4-18	36/4-18	36/9-18	36/5-12	36/4-15	36/9-12	36/5-12	36/5-18
802	854	36/9-24	36/5-14	36/4-14	36/4-16	36/9-14	36/5-9	36/4-12	36/9-10	36/9-42	36/5-14
859	914	36/9-18	36/5-10	36/5-20	36/4-12	36/9-10	36/9-42	36/4-9	36/9-8	36/9-30	36/5-12
919	977	36/9-12	36/5-8	36/5-16	36/5-18	36/9-9	36/5-6	36/5-12	36/9-7	36/9-20	36/7-16
983	1046	36/9-10	36/5-7	36/5-14	36/5-14	36/9-7	36/9-20	36/5-11	36/11-8	36/9-16	36/9-24
1052	1119	36/9-8	36/5-6	36/5-10	36/5-12	36/9-6	36/9-16	36/5-9	36/11-7	36/9-12	36/9-20
1126	1197	36/9-7	36/9-16	36/5-8	36/5-10	36/11-7	36/9-12	36/5-7	36/11-6	36/9-10	36/7-10
1204	1281	36/9-5	36/9-12	36/5-7	36/5-8	36/11-6	36/9-10	36/5-6		36/9-8	36/9-12
1289	1371	36/11-7	36/9-10	36/9-20	36/9-24	36/9-3	36/9-8	36/9-15		36/9-7	36/9-10
1379	1467	36/11-5	36/9-8	36/9-16	36/9-18	36/11-4	36/9-6	36/9-12		36/9-6	36/9-8
1475	1570	36/11-4	36/9-7	36/9-12	36/9-14	36/11-3	36/11-8	36/9-9		36/11-7	36/9-7
1689	1797	36/11-3	36/11-7	36/9-8	36/9-8		36/9-3	36/9-7			36/11-7
1934	2057		36/11-4	36/9-5	36/9-6		36/11-3	36/11-7			
2214	2355		36/11-3	36/11-5	36/11-6			36/11-4			
2535	2697			36/11-3	36/11-4			36/11-3			

\* Please refer to footnotes listed at the end of this section on page 152.

Span = 4'-6"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
254	270	36/3-54	36/3-54	36/3-54	36/3-54	36/3-51	36/3-54	36/4-54	36/4-54	36/4-54	36/4-54
272	289	36/3-54	36/3-54	36/3-54	36/3-54	36/3-36	36/3-54	36/4-54	36/4-48	36/4-54	36/4-54
291	309	36/3-42	36/3-54	36/3-54	36/3-54	36/3-27	36/3-54	36/4-54	36/4-36	36/4-54	36/4-54
311	331	36/3-30	36/3-54	36/3-54	36/3-54	36/3-21	36/3-54	36/4-54	36/4-30	36/4-54	36/4-54
333	354	36/3-24	36/3-54	36/3-54	36/3-54	36/3-16	36/3-54	36/4-54	36/4-24	36/4-54	36/4-54
356	379	36/3-20	36/3-54	36/3-54	36/3-54	36/3-12	36/3-39	36/4-54	36/4-20	36/4-54	36/4-54
381	406	36/3-16	36/3-42	36/3-54	36/3-54	36/4-20	36/3-30	36/4-54	36/4-16	36/4-48	36/4-54
408	434	36/4-24	36/3-30	36/3-54	36/3-54	36/4-16	36/3-24	36/4-54	36/4-14	36/4-36	36/4-54
437	464	36/4-18	36/3-24	36/3-54	36/3-54	36/4-14	36/3-18	36/4-54	36/5-18	36/4-30	36/4-48
467	497	36/4-16	36/3-20	36/3-42	36/3-42	36/5-18	36/3-15	36/4-54	36/5-14	36/4-24	36/4-36
500	532	36/4-12	36/3-16	36/3-30	36/3-36	36/5-16	36/4-21	36/4-45	36/5-12	36/4-20	36/4-30
535	569	36/5-18	36/4-24	36/3-24	36/3-24	36/5-12	36/4-18	36/4-36	36/9-42	36/4-16	36/4-24
572	609	36/5-14	36/4-20	36/3-20	36/3-20	36/5-10	36/4-15	36/4-30	36/9-30	36/4-14	36/4-20
612	651	36/5-12	36/4-16	36/3-14	36/3-16	36/5-9	36/4-12	36/4-24	36/9-20	36/5-18	36/4-18
655	697	36/5-10	36/4-12	36/4-24	36/4-24	36/5-7	36/5-16	36/4-20	36/9-18	36/5-16	36/4-14
701	746	36/5-8	36/5-18	36/4-18	36/4-20	36/5-6	36/5-14	36/4-15	36/9-14	36/5-12	36/5-20
750	798	36/5-7	36/5-14	36/4-16	36/4-18	36/9-15	36/5-12	36/4-12	36/9-10	36/9-42	36/5-16
802	854	36/9-18	36/5-12	36/4-12	36/4-14	36/9-12	36/5-10	36/5-18	36/9-8	36/9-30	36/5-14
859	914	36/9-14	36/5-10	36/5-18	36/4-12	36/9-9	36/5-7	36/5-15	36/9-7	36/9-20	36/9-36
919	977	36/9-10	36/5-8	36/5-14	36/5-16	36/9-8	36/9-19	36/5-12	36/9-6	36/9-18	36/7-14
983	1046	36/9-8	36/5-7	36/5-12	36/5-12	36/9-6	36/9-16	36/5-10	36/11-7	36/9-14	36/7-12
1052	1119	36/9-7	36/9-18	36/5-10	36/5-10	36/9-5	36/9-12	36/5-8	36/11-6	36/9-12	36/9-18
1126	1197	36/9-6	36/9-14	36/5-8	36/5-8	36/11-6	36/9-10	36/5-6		36/9-8	36/9-14
1204	1281	36/9-5	36/9-10	36/5-7	36/5-7	36/9-3	36/9-8	36/9-15		36/9-8	36/9-12
1289	1371	36/11-6	36/9-8	36/9-16	36/9-18	36/9-3	36/9-7	36/9-12		36/9-6	36/9-10
1379	1467	36/11-5	36/9-7	36/9-12	36/9-14	36/11-3	36/9-6	36/9-9		36/11-8	36/9-8
1579	1679	36/11-3	36/9-5	36/9-8	36/9-10		36/11-6	36/9-7			36/11-8
1807	1923		36/11-5	36/9-6	36/9-6		36/11-4	36/11-7			
2069	2201		36/11-3	36/11-6	36/11-6			36/11-5			
2369	2520			36/11-4	36/11-4			36/11-3			

\* Please refer to footnotes listed at the end of this section on page 152.

### 3.5.6 Optimized Diaphragm Shear Tables

Span = 5'-0"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
237	253	36/3-60	36/3-60	36/3-60	36/3-60	36/3-51	36/3-60	36/4-60	36/4-60	36/4-60	36/4-60
254	270	36/3-60	36/3-60	36/3-60	36/3-60	36/3-39	36/3-60	36/4-60	36/4-48	36/4-60	36/4-60
272	289	36/3-48	36/3-60	36/3-60	36/3-60	36/3-30	36/3-60	36/4-60	36/4-36	36/4-60	36/4-60
291	309	36/3-36	36/3-60	36/3-60	36/3-60	36/3-24	36/3-60	36/4-60	36/4-30	36/4-60	36/4-60
311	331	36/3-30	36/3-60	36/3-60	36/3-60	36/3-20	36/3-57	36/4-60	36/4-24	36/4-60	36/4-60
333	354	36/3-24	36/3-60	36/3-60	36/3-60	36/3-16	36/3-45	36/4-60	36/4-20	36/4-60	36/4-60
356	379	36/3-18	36/3-48	36/3-60	36/3-60	36/3-12	36/3-35	36/4-60	36/4-18	36/4-48	36/4-60
381	406	36/3-14	36/3-36	36/3-60	36/3-60	36/4-18	36/3-27	36/4-60	36/5-24	36/4-36	36/4-60
408	434	36/3-12	36/3-30	36/3-60	36/3-60	36/4-15	36/3-21	36/4-60	36/5-20	36/4-30	36/4-48
437	464	36/4-18	36/3-24	36/3-42	36/3-48	36/4-12	36/3-18	36/4-60	36/5-16	36/4-24	36/4-36
467	497	36/4-14	36/3-18	36/3-36	36/3-36	36/4-11	36/3-14	36/4-48	36/5-14	36/4-20	36/4-30
500	532	36/4-12	36/3-14	36/3-24	36/3-30	36/4-9	36/4-20	36/4-39	36/5-12	36/4-18	36/4-24
535	569	36/5-16	36/3-12	36/3-20	36/3-24	36/5-12	36/4-16	36/4-30	36/9-30	36/4-16	36/4-24
572	609	36/5-12	36/4-18	36/3-18	36/3-20	36/5-10	36/4-14	36/4-24	36/9-24	36/5-20	36/4-20
612	651	36/5-10	36/4-14	36/3-14	36/3-16	36/5-8	36/4-12	36/4-21	36/9-18	36/5-16	36/4-16
655	697	36/5-8	36/4-12	36/4-20	36/3-12	36/5-6	36/5-16	36/4-18	36/9-14	36/5-14	36/4-14
701	746	36/5-8	36/5-16	36/4-18	36/4-18	36/9-15	36/5-12	36/4-15	36/9-12	36/5-12	36/5-18
750	798	36/9-18	36/5-14	36/4-14	36/4-16	36/9-12	36/5-11	36/4-12	36/9-10	36/9-30	36/5-14
802	854	36/9-14	36/5-12	36/4-12	36/4-14	36/9-10	36/5-9	36/5-15	36/9-8	36/9-24	36/5-12
859	914	36/9-12	36/5-10	36/5-16	36/5-18	36/9-8	36/5-7	36/5-14	36/9-7	36/9-18	36/7-16
919	977	36/9-10	36/5-8	36/5-14	36/5-14	36/9-7	36/5-6	36/5-12	36/9-6	36/9-14	36/7-14
983	1046	36/9-8	36/5-7	36/5-10	36/5-12	36/9-6	36/9-14	36/5-9	36/11-7	36/9-12	36/7-12
1052	1119	36/9-7	36/9-14	36/5-8	36/5-10	36/11-7	36/9-10	36/7-12	36/11-6	36/9-10	36/9-16
1126	1197	36/11-8	36/9-12	36/5-8	36/5-8	36/11-6	36/9-9	36/7-10		36/9-8	36/9-12
1204	1281	36/11-6	36/9-10	36/9-18	36/5-7	36/9-3	36/9-8	36/9-15		36/9-7	36/9-10
1289	1371	36/9-4	36/9-8	36/9-14	36/9-16	36/11-4	36/9-6	36/9-12		36/9-6	36/9-8
1475	1570	36/11-4	36/9-6	36/9-10	36/9-10	36/11-3	36/11-6	36/9-8		36/11-6	36/9-6
1689	1797		36/9-4	36/9-7	36/9-7		36/11-4	36/9-6			36/11-6
1934	2057		36/11-4	36/9-5	36/9-5		36/11-3	36/11-6			
2214	2355		36/11-3	36/11-5	36/11-5			36/11-4			

\* Please refer to footnotes listed at the end of this section on page 152.

Span = 5'-6"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
222	236	36/3-66	36/3-66	36/3-66	36/3-66	36/3-57	36/3-66	36/4-66	36/4-60	36/4-66	36/4-66
237	253	36/3-66	36/3-66	36/3-66	36/3-66	36/3-42	36/3-66	36/4-66	36/4-48	36/4-66	36/4-66
254	270	36/3-48	36/3-66	36/3-66	36/3-66	36/3-33	36/3-66	36/4-66	36/4-42	36/4-66	36/4-66
272	289	36/3-42	36/3-66	36/3-66	36/3-66	36/3-27	36/3-66	36/4-66	36/4-30	36/4-66	36/4-66
291	309	36/3-30	36/3-66	36/3-66	36/3-66	36/3-21	36/3-63	36/4-66	36/4-24	36/4-66	36/4-66
311	331	36/3-24	36/3-60	36/3-66	36/3-66	36/3-18	36/3-48	36/4-66	36/4-24	36/4-60	36/4-66
333	354	36/3-20	36/3-48	36/3-66	36/3-66	36/3-15	36/3-39	36/4-66	36/4-20	36/4-48	36/4-66
356	379	36/3-18	36/3-42	36/3-66	36/3-66	36/3-12	36/3-30	36/4-66	36/4-16	36/4-42	36/4-60
381	406	36/3-14	36/3-30	36/3-60	36/3-66	36/4-16	36/3-24	36/4-66	36/4-14	36/4-36	36/4-48
408	434	36/4-18	36/3-24	36/3-48	36/3-48	36/4-14	36/3-21	36/4-66	36/5-18	36/4-30	36/4-42
437	464	36/4-16	36/3-20	36/3-36	36/3-42	36/4-12	36/3-15	36/4-51	36/5-16	36/4-24	36/4-36
467	497	36/4-14	36/3-18	36/3-30	36/3-36	36/5-15	36/4-21	36/4-42	36/5-12	36/4-20	36/4-30
500	532	36/4-12	36/4-24	36/3-24	36/3-24	36/5-12	36/4-18	36/4-33	36/9-30	36/4-18	36/4-24
535	569	36/4-10	36/4-20	36/3-20	36/3-20	36/5-10	36/4-16	36/4-27	36/9-24	36/4-14	36/4-20
572	609	36/5-12	36/4-16	36/3-16	36/3-18	36/5-9	36/4-12	36/4-24	36/9-20	36/5-18	36/4-18
612	651	36/5-10	36/4-14	36/3-14	36/4-24	36/5-8	36/4-11	36/4-18	36/9-16	36/5-16	36/4-16
655	697	36/5-8	36/4-12	36/4-20	36/4-20	36/5-6	36/4-9	36/4-15	36/9-12	36/5-14	36/5-20
701	746	36/5-7	36/4-10	36/4-16	36/4-18	36/9-12	36/5-12	36/5-21	36/9-10	36/5-12	36/5-16
750	798	36/9-14	36/5-12	36/4-14	36/4-14	36/9-10	36/5-10	36/4-12	36/9-8	36/9-24	36/5-14
802	854	36/9-12	36/5-10	36/4-12	36/4-12	36/9-9	36/5-9	36/5-15	36/9-8	36/9-20	36/5-12
859	914	36/9-10	36/5-8	36/4-10	36/5-16	36/9-8	36/5-7	36/5-12	36/9-6	36/9-16	36/9-24
919	977	36/9-8	36/5-8	36/5-12	36/5-14	36/9-6	36/5-6	36/5-11	36/11-7	36/9-14	36/9-20
983	1046	36/9-7	36/9-16	36/5-10	36/5-12	36/11-7	36/9-12	36/5-9	36/11-6	36/7-8	36/9-16
1052	1119	36/9-6	36/9-12	36/5-8	36/5-10	36/11-6	36/9-10	36/9-18		36/9-10	36/9-14
1126	1197	36/9-5	36/9-10	36/5-8	36/5-8	36/9-4	36/9-8	36/5-6		36/9-8	36/9-12
1204	1281	36/11-6	36/9-8	36/9-14	36/5-7	36/9-3	36/9-7	36/9-12		36/9-7	36/9-10
1379	1467	36/11-4	36/9-6	36/9-10	36/9-12	36/11-3	36/11-7	36/9-9		36/11-6	36/9-7
1579	1679	36/11-3Z	36/11-6	36/9-7	36/9-8		36/11-5	36/9-6			36/11-7
1807	1923		36/11-4	36/9-5	36/9-6		36/11-3	36/11-6			
2069	2201		36/11-3	36/9-4	36/11-6			36/11-4			

\* Please refer to footnotes listed at the end of this section on page 152.

## Optimized Diaphragm Shear Tables 3.5.6

Span = 6'-0"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
207	221	36/3-72	36/3-72	36/3-72	36/3-72	36/3-60	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
222	236	36/3-72	36/3-72	36/3-72	36/3-72	36/3-48	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
237	253	36/3-48	36/3-72	36/3-72	36/3-72	36/3-39	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
254	270	36/3-42	36/3-72	36/3-72	36/3-72	36/3-30	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
272	289	36/3-36	36/3-72	36/3-72	36/3-72	36/3-24	36/3-69	36/4-72	36/4-30	36/4-72	36/4-72
291	309	36/3-30	36/3-72	36/3-72	36/3-72	36/3-21	36/3-54	36/4-72	36/4-24	36/4-60	36/4-72
311	331	36/3-24	36/3-48	36/3-72	36/3-72	36/3-16	36/3-42	36/4-72	36/4-20	36/4-48	36/4-72
333	354	36/3-20	36/3-42	36/3-72	36/3-72	36/3-14	36/3-33	36/4-72	36/4-18	36/4-42	36/4-60
356	379	36/3-16	36/3-36	36/3-72	36/3-72	36/4-18	36/3-29	36/4-72	36/4-16	36/4-36	36/4-48
381	406	36/4-20	36/3-30	36/3-48	36/3-60	36/4-16	36/3-21	36/4-69	36/4-14	36/4-30	36/4-48
408	434	36/4-18	36/3-24	36/3-42	36/3-48	36/4-14	36/3-19	36/4-55	36/4-12	36/4-24	36/4-36
437	464	36/4-14	36/3-20	36/3-36	36/3-36	36/4-12	36/3-18	36/4-45	36/5-14	36/4-20	36/4-30
467	497	36/4-12	36/3-16	36/3-30	36/3-30	36/4-10	36/4-21	36/4-36	36/5-12	36/4-20	36/4-30
500	532	36/5-16	36/3-14	36/3-24	36/3-24	36/5-12	36/4-18	36/4-30	36/9-24	36/4-16	36/4-24
535	569	36/5-14	36/4-18	36/3-20	36/3-20	36/5-10	36/4-15	36/4-24	36/9-20	36/4-14	36/4-20
572	609	36/5-12	36/4-16	36/3-16	36/3-18	36/5-9	36/4-12	36/4-21	36/9-16	36/5-18	36/4-18
612	651	36/5-10	36/4-14	36/4-20	36/4-24	36/5-7	36/4-11	36/4-18	36/9-14	36/5-14	36/4-14
655	697	36/5-8	36/4-12	36/4-18	36/4-20	36/5-6	36/4-9	36/4-16	36/9-12	36/5-12	36/5-18
701	746	36/5-7	36/4-10	36/4-16	36/4-16	36/9-12	36/5-12	36/4-14	36/9-10	36/9-24	36/5-16
750	798	36/9-14	36/5-12	36/4-12	36/4-14	36/9-10	36/5-9	36/4-12	36/9-8	36/9-20	36/5-14
802	854	36/9-10	36/5-10	36/5-16	36/4-12	36/9-8	36/9-18	36/4-9	36/9-7	36/9-18	36/5-12
859	914	36/9-8	36/5-8	36/5-14	36/4-10	36/9-7	36/9-16	36/5-12	36/9-6	36/9-14	36/7-14
919	977	36/9-8	36/5-7	36/5-12	36/5-12	36/9-6	36/9-12	36/5-11	36/11-7	36/9-12	36/9-18
983	1046	36/9-7	36/9-14	36/5-10	36/5-10	36/11-7	36/9-10	36/5-9	36/11-6	36/9-10	36/9-16
1052	1119	36/9-6	36/9-12	36/5-8	36/5-8	36/11-6	36/9-9	36/9-16		36/9-8	36/9-12
1126	1197	36/9-5	36/9-10	36/5-7	36/5-8	36/11-5	36/9-8	36/9-13		36/9-8	36/7-8
1289	1371	36/11-5	36/9-7	36/9-12	36/9-12	36/11-3	36/9-6	36/9-10		36/11-7	36/9-8
1475	1570	36/11-3	36/11-7	36/9-8	36/9-8		36/9-4	36/9-7			36/9-6
1689	1797		36/11-5	36/9-6	36/9-7		36/11-4	36/9-5			36/11-6
1934	2057		36/11-3	36/11-6	36/9-5		36/11-3	36/11-5			

\* Please refer to footnotes listed at the end of this section on page 152.

Span = 6'-6"											
Allowable diaphragm design strength, plf*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
194	206	36/3-72	36/3-72	36/3-72	36/3-72	36/3-69	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
207	221	36/3-72	36/3-72	36/3-72	36/3-72	36/3-51	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
222	236	36/3-60	36/3-72	36/3-72	36/3-72	36/3-42	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
237	253	36/3-48	36/3-72	36/3-72	36/3-72	36/3-33	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
254	270	36/3-36	36/3-72	36/3-72	36/3-72	36/3-27	36/3-72	36/4-72	36/4-30	36/4-72	36/4-72
272	289	36/3-30	36/3-72	36/3-72	36/3-72	36/3-24	36/3-57	36/4-72	36/4-24	36/4-72	36/4-72
291	309	36/3-24	36/3-60	36/3-72	36/3-72	36/3-18	36/3-48	36/4-72	36/4-24	36/4-60	36/4-72
311	331	36/3-20	36/3-48	36/3-72	36/3-72	36/3-16	36/3-39	36/4-72	36/4-20	36/4-48	36/4-72
333	354	36/3-18	36/3-36	36/3-72	36/3-72	36/4-21	36/3-30	36/4-72	36/4-18	36/4-42	36/4-60
356	379	36/3-16	36/3-30	36/3-60	36/3-60	36/4-18	36/3-27	36/4-72	36/4-16	36/4-30	36/4-48
381	406	36/4-20	36/3-24	36/3-48	36/3-48	36/4-15	36/3-21	36/4-57	36/5-18	36/4-30	36/4-42
408	434	36/4-16	36/3-24	36/3-36	36/3-42	36/4-12	36/3-18	36/4-48	36/5-16	36/4-24	36/4-36
437	464	36/4-14	36/3-20	36/3-30	36/3-36	36/4-11	36/3-15	36/4-39	36/5-14	36/4-20	36/4-30
467	497	36/5-18	36/3-16	36/3-24	36/3-30	36/4-9	36/3-12	36/4-33	36/5-12	36/4-18	36/4-24
500	532	36/5-14	36/4-20	36/3-20	36/3-24	36/5-12	36/4-16	36/4-27	36/9-20	36/4-16	36/4-24
535	569	36/5-12	36/4-18	36/3-18	36/3-20	36/5-9	36/4-15	36/4-24	36/9-18	36/4-14	36/4-20
572	609	36/4-8	36/4-14	36/3-16	36/3-16	36/5-8	36/4-12	36/4-21	36/9-14	36/4-12	36/4-18
612	651	36/5-10	36/5-18	36/4-20	36/3-14	36/5-7	36/5-15	36/4-18	36/9-12	36/5-14	36/4-14
655	697	36/5-8	36/5-16	36/4-18	36/4-18	36/5-6	36/5-12	36/4-15	36/9-10	36/5-12	36/5-18
701	746	36/5-7	36/5-14	36/4-14	36/4-16	36/9-10	36/5-11	36/4-12	36/7-7	36/7-14	36/5-16
750	798	36/9-12	36/5-12	36/5-18	36/4-14	36/9-9	36/5-9	36/5-15	36/9-8	36/9-18	36/5-14
802	854	36/9-10	36/5-10	36/5-16	36/4-12	36/9-8	36/9-16	36/4-9	36/9-7	36/9-16	36/5-12
859	914	36/9-8	36/5-8	36/5-12	36/5-14	36/9-7	36/5-7	36/5-12	36/9-6	36/9-14	36/7-14
919	977	36/9-8	36/5-7	36/5-12	36/5-12	36/9-6	36/5-6	36/5-9	36/11-7	36/9-12	36/7-12
983	1046	36/9-6	36/9-12	36/5-10	36/5-10	36/9-5	36/9-10	36/5-9	36/11-6	36/9-10	36/9-14
1052	1119	36/11-7	36/7-8	36/5-8	36/9-20	36/9-4	36/9-8	36/9-15		36/9-8	36/9-12
1204	1281	36/9-4	36/9-8	36/9-12	36/9-14	36/9-3	36/9-6	36/9-9		36/9-6	36/7-7
1379	1467	36/11-4	36/9-6	36/7-7	36/9-10	36/11-3	36/9-5	36/9-8		36/11-6	36/9-7
1579	1679	36/11-3	36/9-4	36/9-7	36/9-7		36/11-4	36/9-6			36/11-7
1807	1923		36/11-4	36/9-5	36/11-7		36/11-3	36/11-6			

\* Please refer to footnotes listed at the end of this section on page 152.

### 3.5.6 Optimized Diaphragm Shear Tables

Span = 7'-0"											
Allowable diaphragm design strength, pif*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
S <sub>ASD</sub> (seismic)	S <sub>ASD</sub> (wind)	X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
		22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
194	206	36/3-72	36/3-72	36/3-72	36/3-72	36/3-57	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
207	221	36/3-60	36/3-72	36/3-72	36/3-72	36/3-47	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
222	236	36/3-48	36/3-72	36/3-72	36/3-72	36/3-36	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
237	253	36/3-42	36/3-72	36/3-72	36/3-72	36/3-30	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
254	270	36/3-36	36/3-72	36/3-72	36/3-72	36/3-27	36/3-63	36/4-72	36/4-30	36/4-72	36/4-72
272	289	36/3-30	36/3-60	36/3-72	36/3-72	36/3-21	36/3-51	36/4-72	36/4-24	36/4-60	36/4-72
291	309	36/3-24	36/3-48	36/3-72	36/3-72	36/3-18	36/3-42	36/4-72	36/4-20	36/4-48	36/4-72
311	331	36/3-20	36/3-42	36/3-72	36/3-72	36/3-16	36/3-36	36/4-72	36/4-20	36/4-42	36/4-60
333	354	36/3-18	36/3-36	36/3-60	36/3-72	36/3-12	36/3-30	36/4-72	36/4-16	36/4-36	36/4-48
356	379	36/3-14	36/3-30	36/3-48	36/3-60	36/4-16	36/3-24	36/4-63	36/4-14	36/4-30	36/4-48
381	406	36/4-18	36/3-24	36/3-42	36/3-48	36/4-15	36/3-21	36/4-51	36/5-18	36/4-24	36/4-42
408	434	36/4-16	36/3-20	36/3-36	36/3-36	36/4-12	36/3-18	36/4-42	36/5-14	36/4-24	36/4-36
437	464	36/4-14	36/3-18	36/3-30	36/3-30	36/5-15	36/3-15	36/4-36	36/5-12	36/4-20	36/4-30
467	497	36/4-12	36/3-16	36/3-24	36/3-24	36/5-12	36/4-18	36/4-30	36/9-24	36/4-18	36/4-24
500	532	36/5-14	36/4-20	36/3-20	36/3-24	36/5-11	36/4-16	36/4-27	36/9-20	36/4-16	36/4-20
535	569	36/5-12	36/4-16	36/3-18	36/3-20	36/5-10	36/4-14	36/4-21	36/9-16	36/4-14	36/4-20
572	609	36/5-10	36/4-14	36/3-14	36/3-16	36/5-8	36/4-12	36/4-20	36/9-14	36/4-12	36/4-16
612	651	36/9-18	36/4-12	36/4-20	36/3-14	36/5-7	36/5-14	36/4-17	36/9-12	36/5-14	36/4-14
655	697	36/5-8	36/5-14	36/4-16	36/4-18	36/5-6	36/5-12	36/4-15	36/9-10	36/5-12	36/5-18
701	746	36/5-7	36/5-12	36/4-14	36/4-16	36/9-10	36/5-11	36/5-18	36/7-7	36/9-20	36/5-14
750	798	36/5-6	36/4-8	36/4-12	36/4-14	36/9-9	36/5-9	36/5-15	36/9-8	36/9-18	36/5-12
802	854	36/9-10	36/5-10	36/5-14	36/4-12	36/9-7	36/9-16	36/5-12	36/9-7	36/9-14	36/7-14
859	914	36/9-8	36/5-8	36/5-12	36/5-14	36/9-6	36/9-12	36/5-11	36/9-6	36/9-12	36/9-18
919	977	36/9-7	36/9-14	36/5-10	36/5-12	36/9-6	36/9-10	36/5-10	36/11-6	36/9-10	36/7-12
983	1046	36/9-6	36/9-12	36/5-10	36/5-10	36/11-6	36/9-10	36/9-15		36/7-7	36/9-14
1052	1119	36/11-7	36/9-10	36/5-8	36/9-18	36/7-3	36/7-6	36/9-12		36/9-8	36/9-12
1204	1281	36/11-5	36/9-8	36/9-12	36/9-12	36/9-3	36/9-6	36/9-9		36/11-8	36/7-7
1379	1467	36/11-4	36/9-6	36/9-8	36/9-10	36/11-3	36/11-6	36/9-8		36/11-6	36/9-7
1579	1679		36/11-5	36/9-6	36/9-7		36/11-4	36/9-6			36/11-6
1807	1923		36/11-4	36/9-5	36/11-7		36/11-3	36/9-4			

\* Please refer to footnotes listed at the end of this section on page 152.

Span = 7'-6"											
Allowable diaphragm design strength, pif*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
S <sub>ASD</sub> (seismic)	S <sub>ASD</sub> (wind)	X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
		22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
181	193	36/3-72	36/3-72	36/3-72	36/3-72	36/3-63	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
194	206	36/3-72	36/3-72	36/3-72	36/3-72	36/3-51	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
207	221	36/3-60	36/3-72	36/3-72	36/3-72	36/3-42	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
222	236	36/3-48	36/3-72	36/3-72	36/3-72	36/3-36	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
237	253	36/3-36	36/3-72	36/3-72	36/3-72	36/3-30	36/3-69	36/4-72	36/4-30	36/4-72	36/4-72
254	270	36/3-30	36/3-72	36/3-72	36/3-72	36/3-24	36/3-57	36/4-72	36/4-30	36/4-60	36/4-72
272	289	36/3-24	36/3-60	36/3-72	36/3-72	36/3-21	36/3-45	36/4-72	36/4-24	36/4-48	36/4-72
291	309	36/3-24	36/3-48	36/3-72	36/3-72	36/3-18	36/3-39	36/4-72	36/4-20	36/4-48	36/4-72
311	331	36/3-20	36/3-42	36/3-72	36/3-72	36/3-15	36/3-33	36/4-72	36/4-18	36/4-42	36/4-60
333	354	36/3-18	36/3-36	36/3-60	36/3-60	36/4-18	36/3-27	36/4-66	36/4-16	36/4-36	36/4-48
356	379	36/3-14	36/3-30	36/3-48	36/3-48	36/4-16	36/3-24	36/4-54	36/5-20	36/4-30	36/4-42
381	406	36/4-18	36/3-24	36/3-42	36/3-42	36/4-14	36/3-18	36/4-48	36/5-16	36/4-24	36/4-36
408	434	36/4-16	36/3-20	36/3-30	36/3-36	36/5-16	36/3-15	36/4-39	36/5-14	36/4-20	36/4-30
437	464	36/4-14	36/3-18	36/3-30	36/3-30	36/5-14	36/4-21	36/4-33	36/5-12	36/4-20	36/4-30
467	497	36/5-16	36/3-14	36/3-24	36/3-24	36/5-12	36/4-18	36/4-30	36/7-14	36/4-18	36/4-24
500	532	36/5-14	36/4-18	36/3-20	36/3-20	36/5-10	36/4-16	36/4-24	36/9-18	36/5-20	36/4-20
535	569	36/5-12	36/4-16	36/3-18	36/3-20	36/5-9	36/4-14	36/4-21	36/9-16	36/5-18	36/4-20
572	609	36/5-10	36/4-14	36/3-14	36/3-16	36/5-8	36/5-16	36/4-18	36/9-12	36/5-16	36/4-16
612	651	36/5-8	36/5-16	36/4-18	36/4-20	36/5-7	36/5-14	36/5-22	36/9-12	36/5-12	36/5-20
655	697	36/5-8	36/5-14	36/4-16	36/4-18	36/9-12	36/5-12	36/5-20	36/9-10	36/5-12	36/5-16
701	746	36/5-7	36/5-12	36/4-14	36/5-20	36/9-10	36/5-10	36/4-12	36/9-8	36/9-18	36/5-14
750	798	36/5-6	36/5-10	36/5-16	36/5-18	36/7-6	36/5-9	36/5-15	36/9-7	36/9-16	36/5-12
802	854	36/7-7	36/9-18	36/5-14	36/5-16	36/9-7	36/9-15	36/5-12	36/11-8	36/9-14	36/7-14
859	914	36/9-8	36/5-8	36/5-12	36/5-14	36/9-6	36/9-12	36/5-11	36/9-6	36/9-12	36/9-18
919	977	36/9-7	36/5-7	36/5-10	36/5-12	36/11-7	36/9-10	36/5-9	36/11-6	36/9-10	36/9-14
983	1046	36/9-6	36/5-6	36/9-18	36/5-10	36/9-5	36/7-7	36/9-15		36/7-7	36/7-10
1126	1197	36/11-6	36/9-8	36/5-7	36/9-14	36/9-3	36/9-7	36/5-6		36/9-7	36/9-10
1289	1371		36/11-8	36/9-10	36/7-8		36/7-4	36/9-9		36/11-6	36/9-7
1475	1570		36/9-5	36/9-7	36/9-8		36/9-4	36/9-6			36/11-7
1689	1797			36/11-7	36/9-6			36/9-5			

\* Please refer to footnotes listed at the end of this section on page 152.

# Optimized Diaphragm Shear Tables 3.5.6

Span = 8'-0"

Allowable diaphragm design strength, pif*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
S <sub>ASD</sub> (seismic)	S <sub>ASD</sub> (wind)	X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
		22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
181	193	36/3-72	36/3-72	36/3-72	36/3-72	36/3-54	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
194	206	36/3-60	36/3-72	36/3-72	36/3-72	36/3-48	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
207	221	36/3-48	36/3-72	36/3-72	36/3-72	36/3-39	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
222	236	36/3-42	36/3-72	36/3-72	36/3-72	36/3-33	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
237	253	36/3-36	36/3-72	36/3-72	36/3-72	36/3-27	36/3-63	36/4-72	36/4-30	36/4-72	36/4-72
254	270	36/3-30	36/3-60	36/3-72	36/3-72	36/3-24	36/3-51	36/4-72	36/4-24	36/4-60	36/4-72
272	289	36/3-24	36/3-48	36/3-72	36/3-72	36/3-21	36/3-45	36/4-72	36/4-24	36/4-48	36/4-72
291	309	36/3-20	36/3-42	36/3-72	36/3-72	36/3-18	36/3-36	36/4-72	36/4-20	36/4-42	36/4-60
311	331	36/3-20	36/3-36	36/3-60	36/3-72	36/3-15	36/3-30	36/4-69	36/4-18	36/4-36	36/4-48
333	354	36/3-16	36/3-30	36/3-48	36/3-60	36/4-18	36/3-27	36/4-60	36/4-16	36/4-30	36/4-48
356	379	36/4-20	36/3-24	36/3-42	36/3-48	36/4-16	36/3-21	36/4-51	36/4-14	36/4-30	36/4-42
381	406	36/4-16	36/3-24	36/3-36	36/3-42	36/4-14	36/3-18	36/4-42	36/5-16	36/4-24	36/4-36
408	434	36/5-20	36/3-20	36/3-30	36/3-36	36/4-12	36/3-15	36/4-36	36/5-14	36/4-20	36/4-30
437	464	36/5-16	36/3-18	36/3-24	36/3-30	36/5-14	36/4-20	36/4-33	36/5-12	36/4-20	36/4-24
467	497	36/5-14	36/4-20	36/3-24	36/3-24	36/5-12	36/4-18	36/4-27	36/9-20	36/4-16	36/4-24
500	532	36/4-10	36/4-18	36/3-20	36/3-20	36/5-10	36/4-15	36/4-24	36/7-12	36/5-20	36/4-20
535	569	36/5-12	36/4-16	36/4-24	36/3-18	36/5-9	36/4-13	36/4-21	36/9-14	36/5-16	36/4-18
572	609	36/5-10	36/4-14	36/4-20	36/3-16	36/5-8	36/4-12	36/4-18	36/9-12	36/5-14	36/4-16
612	651	36/5-8	36/5-16	36/4-18	36/4-20	36/5-7	36/4-10	36/4-15	36/9-10	36/5-12	36/4-14
655	697	36/5-8	36/5-14	36/4-16	36/4-16	36/5-6	36/5-12	36/4-14	36/9-10	36/7-14	36/5-16
701	746	36/9-12	36/5-12	36/4-14	36/5-20	36/7-7	36/5-10	36/4-12	36/9-8	36/9-18	36/5-14
750	798	36/9-10	36/5-10	36/5-16	36/5-16	36/7-6	36/5-9	36/5-14	36/9-7	36/9-14	36/5-12
802	854	36/7-7	36/5-8	36/5-14	36/5-14	36/9-7	36/9-14	36/5-12	36/11-8	36/7-10	36/7-14
859	914	36/9-8	36/5-8	36/5-12	36/4-10	36/9-6	36/9-12	36/5-11	36/11-7	36/9-12	36/7-12
919	977	36/9-7	36/5-7	36/5-10	36/5-10	36/9-5	36/9-10	36/5-9	36/11-6	36/9-10	36/9-14
983	1046	36/9-6	36/7-8	36/5-8	36/5-10	36/11-6	36/7-7	36/5-8		36/7-7	36/7-10
1126	1197	36/11-5	36/9-8	36/5-7	36/7-10		36/9-7	36/5-6		36/9-7	36/9-10
1289	1371		36/9-6	36/7-7	36/7-8		36/9-5	36/9-8		36/11-6	36/9-7
1475	1570			36/9-7	36/9-8			36/9-6			36/11-7
1689	1797			36/9-5	36/9-6			36/9-5			

\* Please refer to footnotes listed at the end of this section on page 152.

Span = 9'-0"

Allowable diaphragm design strength, pif*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
S <sub>ASD</sub> (seismic)	S <sub>ASD</sub> (wind)	X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
		22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
169	180	36/3-72	36/3-72	36/3-72	36/3-72	36/3-57	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
181	193	36/3-60	36/3-72	36/3-72	36/3-72	36/3-48	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
194	206	36/3-48	36/3-72	36/3-72	36/3-72	36/3-42	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
207	221	36/3-42	36/3-72	36/3-72	36/3-72	36/3-36	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
222	236	36/3-36	36/3-72	36/3-72	36/3-72	36/3-30	36/3-63	36/4-72	36/4-30	36/4-60	36/4-72
237	253	36/3-30	36/3-60	36/3-72	36/3-72	36/3-24	36/3-54	36/4-72	36/4-30	36/4-60	36/4-72
254	270	36/3-30	36/3-48	36/3-72	36/3-72	36/3-21	36/3-45	36/4-72	36/4-24	36/4-48	36/4-72
272	289	36/3-24	36/3-48	36/3-72	36/3-72	36/3-20	36/3-39	36/4-72	36/4-20	36/4-42	36/4-60
291	309	36/3-20	36/3-42	36/3-60	36/3-72	36/3-16	36/3-33	36/4-69	36/4-20	36/4-36	36/4-60
311	331	36/3-18	36/3-36	36/3-48	36/3-60	36/3-14	36/3-27	36/4-57	36/4-18	36/4-36	36/4-48
333	354	36/3-16	36/3-30	36/3-48	36/3-48	36/3-12	36/3-24	36/4-51	36/4-16	36/4-30	36/4-42
356	379	36/4-18	36/3-24	36/3-36	36/3-42	36/4-15	36/3-21	36/4-45	36/4-14	36/4-24	36/4-36
381	406	36/4-16	36/3-20	36/3-36	36/3-36	36/4-12	36/3-18	36/4-39	36/4-12	36/4-24	36/4-30
408	434	36/4-14	36/3-20	36/3-30	36/3-30	36/5-15	36/3-15	36/4-33	36/5-14	36/4-20	36/4-30
437	464	36/5-16	36/3-16	36/3-24	36/3-24	36/5-12	36/4-18	36/4-30	36/5-12	36/4-18	36/4-24
467	497	36/5-14	36/4-20	36/3-20	36/3-24	36/4-9	36/4-16	36/4-24	36/9-18	36/4-16	36/4-24
500	532	36/4-10	36/4-16	36/3-18	36/3-20	36/5-10	36/4-15	36/4-21	36/9-14	36/4-14	36/4-20
535	569	36/5-10	36/4-14	36/3-16	36/3-18	36/5-9	36/4-12	36/4-20	36/7-10	36/5-16	36/4-18
572	609	36/5-10	36/5-16	36/4-20	36/4-20	36/5-8	36/5-14	36/4-18	36/9-12	36/5-14	36/4-16
612	651	36/5-8	36/4-12	36/4-16	36/4-18	36/5-7	36/5-12	36/4-15	36/9-10	36/5-12	36/4-14
655	697	36/9-12	36/4-10	36/4-14	36/4-16	36/5-6	36/5-11	36/4-14	36/9-8	36/9-18	36/5-16
701	746	36/9-10	36/5-12	36/5-16	36/4-14	36/9-9	36/5-9	36/4-12	36/9-8	36/9-16	36/5-14
750	798	36/7-7	36/5-10	36/4-12	36/5-16	36/9-7	36/5-8	36/5-14	36/9-7	36/9-14	36/5-12
802	854	36/9-8	36/5-8	36/4-10	36/5-14	36/9-7	36/5-7	36/5-12	36/9-6	36/9-12	36/7-14
859	914	36/9-7	36/5-8	36/5-12	36/5-12	36/9-6	36/5-6	36/5-10	36/11-6	36/9-10	36/9-16
919	977		36/5-7	36/5-10	36/5-10		36/9-10	36/5-9		36/9-8	36/9-14
1052	1119		36/7-7	36/5-8	36/5-8		36/7-6	36/9-12		36/9-7	36/9-10
1204	1281			36/9-10	36/9-10			36/9-9			36/9-8
1379	1467			36/9-8	36/7-7			36/9-7			36/11-8
1579	1679			36/9-6	36/11-8			36/9-5			36/11-6

\* Please refer to footnotes listed at the end of this section on page 152.

### 3.5.6 Optimized Diaphragm Shear Tables

Span = 10'-0"											
Allowable diaphragm design strength, pif*		Recommended Hilti powder-actuated frame fastener pattern-sidelap spacing Hilti SLC (in. o.c.)*									
		X-ENP-19 with $t_f \geq 1/4"$				X-HSN 24 with $3/16" \leq t_f \leq 3/8"$			X-HSN 24 with $1/8" \leq t_f < 3/16"$		
$S_{ASD}$ (seismic)	$S_{ASD}$ (wind)	22 ga.	20 ga.	18 ga.	16 ga.	22 ga.	20 ga.	18 ga.	22 ga.	20 ga.	18 ga.
138	147	36/3-72	36/3-72	36/3-120	36/3-120	36/3-72	36/3-72	36/4-72	36/4-72	36/4-72	36/4-72
148	157	36/3-72	36/3-72	36/3-72	36/3-72	36/3-66	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
158	168	36/3-72	36/3-72	36/3-72	36/3-72	36/3-57	36/3-72	36/4-72	36/4-60	36/4-72	36/4-72
169	180	36/3-60	36/3-72	36/3-72	36/3-72	36/3-51	36/3-72	36/4-72	36/4-48	36/4-72	36/4-72
181	193	36/3-48	36/3-72	36/3-72	36/3-72	36/3-42	36/3-72	36/4-72	36/4-42	36/4-72	36/4-72
194	206	36/3-48	36/3-72	36/3-72	36/3-72	36/3-36	36/3-72	36/4-72	36/4-36	36/4-72	36/4-72
207	221	36/3-42	36/3-72	36/3-72	36/3-72	36/3-33	36/3-63	36/4-72	36/4-36	36/4-72	36/4-72
222	236	36/3-36	36/3-60	36/3-72	36/3-72	36/3-27	36/3-57	36/4-72	36/4-30	36/4-60	36/4-72
237	253	36/3-30	36/3-48	36/3-72	36/3-72	36/3-24	36/3-48	36/4-72	36/4-24	36/4-48	36/4-72
254	270	36/3-24	36/3-48	36/3-72	36/3-72	36/3-21	36/3-42	36/4-72	36/4-24	36/4-48	36/4-60
272	289	36/3-24	36/3-42	36/3-60	36/3-72	36/3-18	36/3-36	36/4-69	36/4-20	36/4-42	36/4-60
291	309	36/3-20	36/3-36	36/3-48	36/3-60	36/3-16	36/3-30	36/4-60	36/4-18	36/4-36	36/4-48
311	331	36/3-18	36/3-30	36/3-48	36/3-48	36/3-14	36/3-27	36/4-51	36/4-16	36/4-30	36/4-48
333	354	36/3-16	36/3-24	36/3-42	36/3-48	36/3-12	36/3-24	36/4-45	36/4-14	36/4-30	36/4-42
356	379	36/4-18	36/3-24	36/3-36	36/3-42	36/4-14	36/3-21	36/4-39	36/5-16	36/4-24	36/4-36
381	406	36/4-16	36/3-20	36/3-30	36/3-36	36/4-12	36/3-18	36/4-36	36/4-12	36/4-20	36/4-30
408	434	36/4-14	36/3-18	36/3-24	36/3-30	36/5-14	36/4-21	36/4-30	36/5-12	36/4-20	36/4-30
437	464	36/4-12	36/3-16	36/3-24	36/3-24	36/4-10	36/4-18	36/4-27	36/9-18	36/4-18	36/4-24
467	497	36/4-10	36/4-18	36/3-20	36/3-24	36/5-11	36/4-16	36/4-24	36/9-16	36/4-16	36/4-20
500	532	36/5-12	36/4-16	36/3-18	36/3-20	36/5-10	36/4-14	36/4-21	36/9-14	36/4-14	36/4-20
535	569	36/5-10	36/4-14	36/3-16	36/3-16	36/5-8	36/4-12	36/4-18	36/7-10	36/5-16	36/4-18
572	609	36/9-14	36/5-16	36/4-18	36/4-20	36/5-7	36/5-14	36/4-17	36/9-10	36/5-14	36/4-16
612	651	36/5-8	36/5-14	36/4-16	36/4-18	36/5-6	36/5-12	36/4-15	36/9-10	36/5-12	36/5-18
655	697	36/5-7	36/4-10	36/4-14	36/4-16	36/9-9	36/5-11	36/4-13	36/9-8	36/9-16	36/5-16
701	746	36/9-10	36/5-10	36/5-16	36/4-14	36/7-6	36/5-9	36/4-12	36/9-7	36/9-14	36/5-14
750	798		36/5-10	36/5-14	36/5-16		36/7-10	36/5-12		36/7-10	36/5-12
859	914		36/9-12	36/5-10	36/5-12		36/5-6	36/5-9		36/9-10	36/7-12
983	1046			36/9-14	36/9-14			36/5-8			36/9-12
1126	1197			36/9-10	36/9-12			36/9-10			36/9-8
1289	1371			36/7-7	36/7-7			36/9-7			36/9-7

\*Please refer to footnotes listed below.

- $S_{ASD}$  (seismic) values calculated by using a safety factor ( $\Omega$ ) of 2.50 for seismic loads. For  $S_{LRFD}$  (seismic)\* multiply  $S_{ASD}$  (seismic) by 2.50 and then by a resistance factor ( $\Phi$ ) of 0.65. For  $S_{LSD}$  (seismic)\* multiply  $S_{ASD}$  (seismic) by 2.50 and then by a resistance factor ( $\Phi$ ) of 0.60. Diaphragm shear stiffness should be calculated separately per Section 3.5.1.8.
- $S_{ASD}$  (wind) values calculated by using a safety factor ( $\Omega$ ) of 2.35 for wind loads. For  $S_{LRFD}$  (wind)\* multiply  $S_{ASD}$  (wind) by 2.35 and then by a resistance factor ( $\Phi$ ) of 0.70. For  $S_{LSD}$  (wind)\* multiply  $S_{ASD}$  (wind) by 2.35 and then by a resistance factor ( $\Phi$ ) of 0.65. Diaphragm shear stiffness should be calculated separately per Section 3.5.1.8.
- Tabulated fastening patterns apply to standard ( $F_y \geq 33$  ksi;  $F_u \geq 45$  ksi) or high strength ( $F_y \geq 80$  ksi;  $F_u \geq 92$  ksi) 1-1/2" deep, 6" center-to-center types B and BI steel deck. Panel buckling has been checked.
- At diaphragm perimeter, Hilti powder-actuated frame fasteners should be spaced at identical spacing as sidelap connectors.
- Interpolation of diaphragm shear strength values is allowed between span dimensions, sidelap spacings and deck gauge. Alternatively, use calculations as discussed in Section 3.5.1.8 to determine diaphragm shear capacities directly.
- To convert from sidelap spacing (SS) to sidelaps per span (SPS), use the following formula:  $SPS = ((\text{span, ft}) \times 12) / (SS, \text{ in.})$ . Round up to the next whole sidelap connector.
- For 16 gauge steel deck or for high tensile strength ( $F_u > 65$  ksi) 18 gauge steel deck, use S-SLC 02 M HWH. For more information on Hilti Sidelap Connectors refer to Section 3.5.5.
- For diaphragm shear load values using Hilti #10 HWH screws, use the Hilti Profis DF Diaphragm software or contact Hilti at 877-749-6337 or deck@hilti.com.
- Additional diaphragm fastening patterns and optimized attachment options can be developed from Hilti Profis DF Diaphragm Software. Contact Hilti Technical Services or find more information at [www.us.hilti.com/decking](http://www.us.hilti.com/decking) (USA) or [www.hilti.ca/decking](http://www.hilti.ca/decking) (Canada).
- For 36/9 or 36/11 patterns, please see footnote 2 of Table 10 (page 111).