January 01, 2024

Re: Simpson Strong-Tie[®] Strong-Wall[®] High-Strength Wood Shearwall (WSWH) Installed On First-Story Wood Floor Systems

Strong-Wall[®] high-strength wood shearwall (WSWH), designed for use on concrete foundations, can also be used with wood floor systems by extending the anchor bolts and installing compression nuts and solid blocking below the wall. Width-specific WSWH shear-transfer plates are placed over the anchor bolts and under the walls, and the connection is made with 0.148" x 2½" min. length nails (refer to the exterior view of shear-transfer plate graphic below). Alternatively, the WSWH walls may be installed directly on the foundation by cutting them into the wood floor system as shown in the first-story installation with wood floor system graphic in the C-L-SW21 catalog.

	Pan	el Informati	Anchor Bolts		
Model No.	Nominal Width, W (in.)	Height, H (in.)	Weight (lb.)	Qty.	Dia. (in.)
WSWH12x7	12	84	105	2	1
WSWH18x7	18	84	155	2	1
WSWH12x8	12	96	120	2	1
WSWH18x8	18	96	175	2	1
WSWH24x8	24	96	225	2	1
WSWH12x9	12	108	130	2	1
WSWH18x9	18	108	195	2	1
WSWH24x9	24	108	250	2	1
WSWH12x10	12	120	145	2	1
WSWH18x10	18	120	210	2	1
WSWH24x10	24	120	275	2	1
WSWH12x12	12	144	165	2	1
WSWH18x12	18	144	245	2	1
WSWH24x12	24	144	325	2	1
WSWH18x14	18	168	285	2	1
WSWH24x14	24	168	370	2	1
WSWH24x16	24	192	420	2	1
WSWH18x20	18	240	390	2	1
WSWH24x20	24	240	520	2	1

Strong-Wall[®] High-Strength Wood Shearwall Product Data

 To achieve evaluated panel heights listed in the allowable load table or for those not listed, order the next tallest panel and trim to fit. Minimum trimmed height for all panels is 74½".

 All panels are supplied with preattached holdowns, two heavy hex nuts, two heavy bearing plates, one WSWH-TP top connection plate (width based on panel model), required fasteners and installation instructions.

3. All panels are 31/2" thick.

Wood First-Floor Wall Connection Kit

Wall Width (in.)	Model No.	Contents
12	WSWH-RF12KT	• (1) Shear transfer plate
18	WSWH-RF18KT	 (2) 1" x 18" threaded rods (ASTM A193 B7) (2) Coupler nuts (2) Usersult as motif.
24	WSWH-RF24KT	(2) Heavy nex nuts Installation instructions



Strong-Tie

First-Story Wood Floor Systems

	Panel Evaluation Height, H _e (in.)	Seismic ²			Wind		
Model No.		Allowable ASD Shear Load, V (lb.) ⁶	Drift at Allowable Shear, A (in.)	Anchor Tension at Allowable Shear, T (lb.) ⁸	Allowable ASD Shear, V (lb.) ⁶	Drift at Allowable Shear, Δ (in.)	Anchor Tension at Allowable Shear, T (lb.) ⁸
WSWH12x7	78	820	0.34	7,870	1,045	0.43	10,030
WSWH18x7	78	2,085	0.34	11,615	2,645	0.43	14,735
WSWH24x7	78	3,950	0.30	15,405	4,445	0.33	17,335
WSWH12x8	93.25	665	0.41	7,630	855	0.52	9,815
WSWH18x8	93.25	1,680	0.42	11,190	2,135	0.53	14,220
WSWH24x8	93.25	3,310	0.42	15,435	4,205	0.53	19,605
WSWH12x9	105.25	560	0.47	7,255	710	0.60	9,195
WSWH18x9	105.25	1,475	0.43	11,090	1,935	0.56	14,545
WSWH24x9	105.25	2,830	0.43	14,895	3,700	0.56	19,470
WSWH12x10	117.25	480	0.53	6,925	610	0.67	8,805
WSWH18x10	117.25	1,220	0.53	10,220	1,550	0.67	12,980
WSWH24x10	117.25	2,410	0.53	14,130	3,060	0.67	17,940
WSWH12x11	129.25	420	0.58	6,680	535	0.73	8,510
WSWH18x11	129.25	1,070	0.58	9,880	1,355	0.73	12,510
WSWH24x11	129.25	2,105	0.58	13,605	2,670	0.73	17,255
WSWH12x12	144	355	0.63	6,290	450	0.80	7,975
WSWH18x12	144	900	0.63	9,255	1,145	0.80	11,775
WSWH24x12	144	1,780	0.63	12,815	2,260	0.80	16,270
WSWH18x13	156	810	0.68	9,025	1,025	0.87	11,420
WSWH24x13	156	1,595	0.68	12,440	2,025	0.87	15,795
WSWH18x14	168	730	0.74	8,760	930	0.93	11,160
WSWH24x14	168	1,440	0.74	12,095	1,830	0.93	15,370
WSWH18x16	192	610	0.84	8,365	775	1.07	10,630
WSWH24x16	192	1,200	0.84	11,520	1,525	1.07	14,640
WSWH18x18	216	520	0.95	8,025	660	1.20	10,185
WSWH24x18	216	1,025	0.95	11,070	1,300	1.20	14,040
WSWH18x20	240	430	1.06	7,370	545	1.34	9,345
WSWH24x20	240	910	1.01	10,920	1,170	1.30	14,040

1. Loads are applicable to first-story raised wood floor installations supported on concrete or masonry foundations using the ASD basic (Section 1605.3.1) or the alternative basic (Section 1605.3.2) load combinations. Load values include evaluation of anchor rod compression capacity and do not require further evaluation by the designer.

2. Seismic design based on 2021 IBC using R = 6.5. For other codes, use the seismic coefficients corresponding to light-frame bearing walls with wood structural panels or sheet steel panels.

3. Allowable shear loads are based on a maximum 2,000 lbs. uniformly distributed axial load acting in combination with the allowable shear loads.

4. Allowable shear, drift and anchor tension values may be interpolated for intermediate height or vertical loads. For panels 74½"-78" tall, use the values for a 78" tall panel.

5. High-strength anchor bolts are required unless a lower strength grade is justified by the registered design professional. See C-L-SW21 for WSWH-ABHS anchor bolt information and anchorage solutions.

6. Allowable shear loads assume a maximum first floor joist depth of 12" for allowable shear load with joists up to 16" deep, multiple table values by 0.92.

7. Drifts at lower design shear may be linearly reduced.

8. Tabulated anchor tension values assume no resisting vertical load. Anchor tension loads at design shear values and including the effect of vertical load may be determined using the following equation: $T = [(V \times H) / B] - P/2, \text{ where:}$

T = Anchor tension load (lb.)

- V = Design shear load (lb.)
- P = Applied vertical load (lb.)

H = Panel height (in.)

B = Moment arm (in.); 8.125" for WSWH12, 14" for WSWH18, 20" for WSWH24

The information in this letter is valid until **12/31/2024** when it will be re-evaluated by Simpson Strong-Tie. Please visit <u>strongtie.com</u> for additional pertinent information. If you have questions or need further assistance regarding this matter, please contact the Simpson Strong-Tie engineering department at (800) 999-5099.

Sincerely,

SIMPSON STRONG-TIE COMPANY INC.