

# STEEL STRONG-WALL®: Balloon Framing on Concrete Foundations

A complete stacked-wall solution for balloon-framing applications. Now there is a Steel Strong-Wall® option for heights up to 20' that combines simplified installation with superior performance.

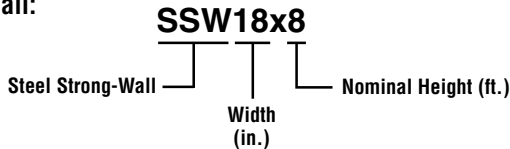
- Some of the highest loads in the industry
- Same anchor bolt template as single-story installation
- Complete kit available to simplify the connection between the walls

**MATERIAL & FINISH:** See page 10

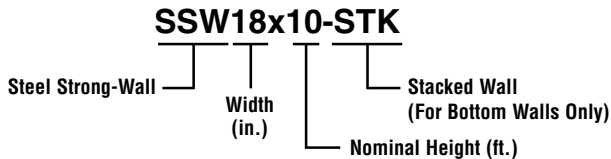
**CODE:**  ICC-ES ESR-1679  
State of Florida FL5113

## NAMING SCHEME

Top Wall:



Bottom Wall:



**Suggested Example Specification:** SSW18x8 over SSW18x10-STK

## STEEL STRONG-WALL® BALLOON FRAMING STACKED-WALL PRODUCT DATA – BOTTOM WALLS

Model No.	W (in)	H (in)	T (in)	Anchor Bolts	
				Qty.	Dia.
SSW15x8-STK	15	93¼	3½	2	1"
SSW15x10-STK	15	117¼	3½	2	1"
SSW18x8-STK	18	93¼	3½	2	1"
SSW18x10-STK	18	117¼	3½	2	1"
SSW21x8-STK	21	93¼	3½	2	1"
SSW21x10-STK	21	117¼	3½	2	1"
SSW24x8-STK	24	93¼	3½	2	1"
SSW24x10-STK	24	117¼	3½	2	1"

1. Specific wall combinations provided. See load table on page 22. Contact Simpson Strong-Tie for additional wall combinations.
2. See page 11 for product data on top walls.

## BALLOON-FRAMING WALL CONNECTION KIT

Model No.	Contents
SSWBF-KT	(2) 1" x 25" Threaded Rods F1554 Grade 36 (4) Heavy Hex Nuts Installation Instructions

1. Two heavy hex nuts included with each wall.

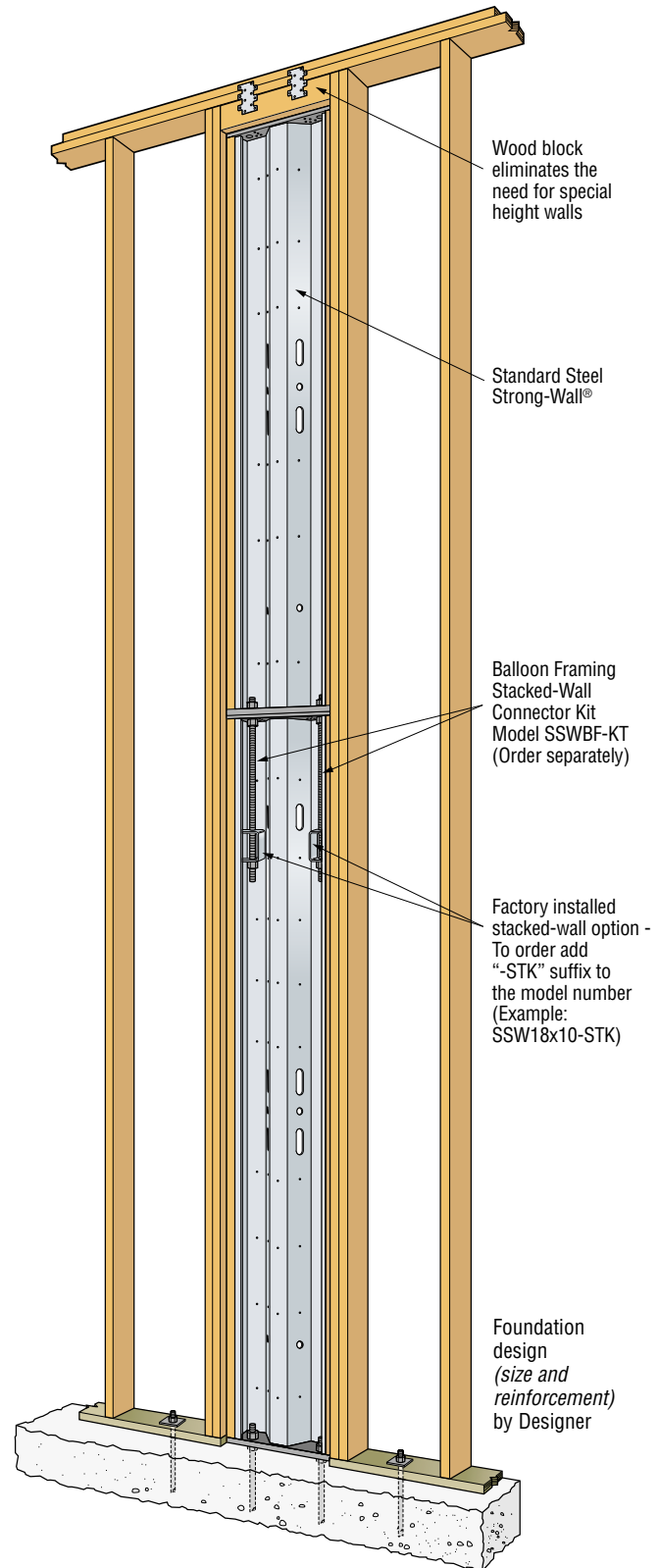
## WOOD BLOCK TO TOP PLATE CONNECTION

Strong-Wall® Width	Total Connectors	Recommended Connectors
15' Wall	4 (2 Each Side)	Simpson Strong-Tie® LTP4 or A35
18' Wall	4 (2 Each Side)	
21' Wall	6 (3 Each Side)	
24' Wall	6 (3 Each Side)	

1. Alternate connectors with equivalent shear capacity may be specified by the Designer.



For a complete set of wall profile drawings, see page 10.



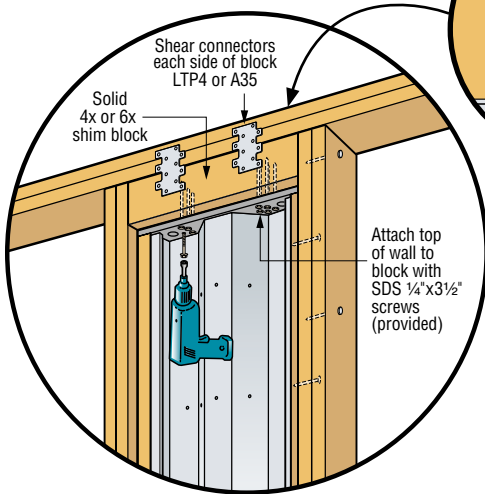
**STACKED-WALL SOLUTION FOR BALLOON FRAMING**

# STEEL STRONG-WALL®: Balloon Framing on Concrete Foundations

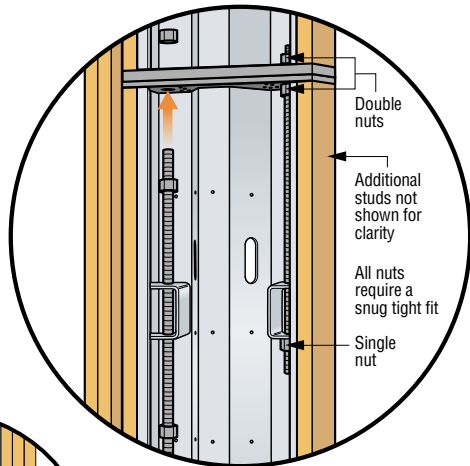
## INSTALLATION

- Do not cut the Steel Strong-Wall® or enlarge existing holes, doing so will compromise the performance of the wall.
- Do not use an impact wrench to tighten nuts on the anchor bolts.
- Maximum top block height between the Steel Strong-Wall and top plates is 12". See detail 4/SSW3 on page 65.
- Full height studs are required for balloon-framed wall installation (by Designer). Two 2x6 minimum each side with 10d nails at 16" o.c.

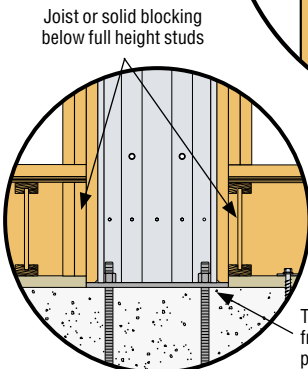
Block Height (H)	CS16 Nailing (0.148 x 1.5" Nails)	
	Into Block	Into SSW Nailer Stud
H ≤ 8"	N/A	N/A
8" < H ≤ 10"	8-10d x 1½"	8-10d x 1½"
10" < H ≤ 12"	10-10d x 1½"	10-10d x 1½"



TOP-OF-WALL CONNECTION

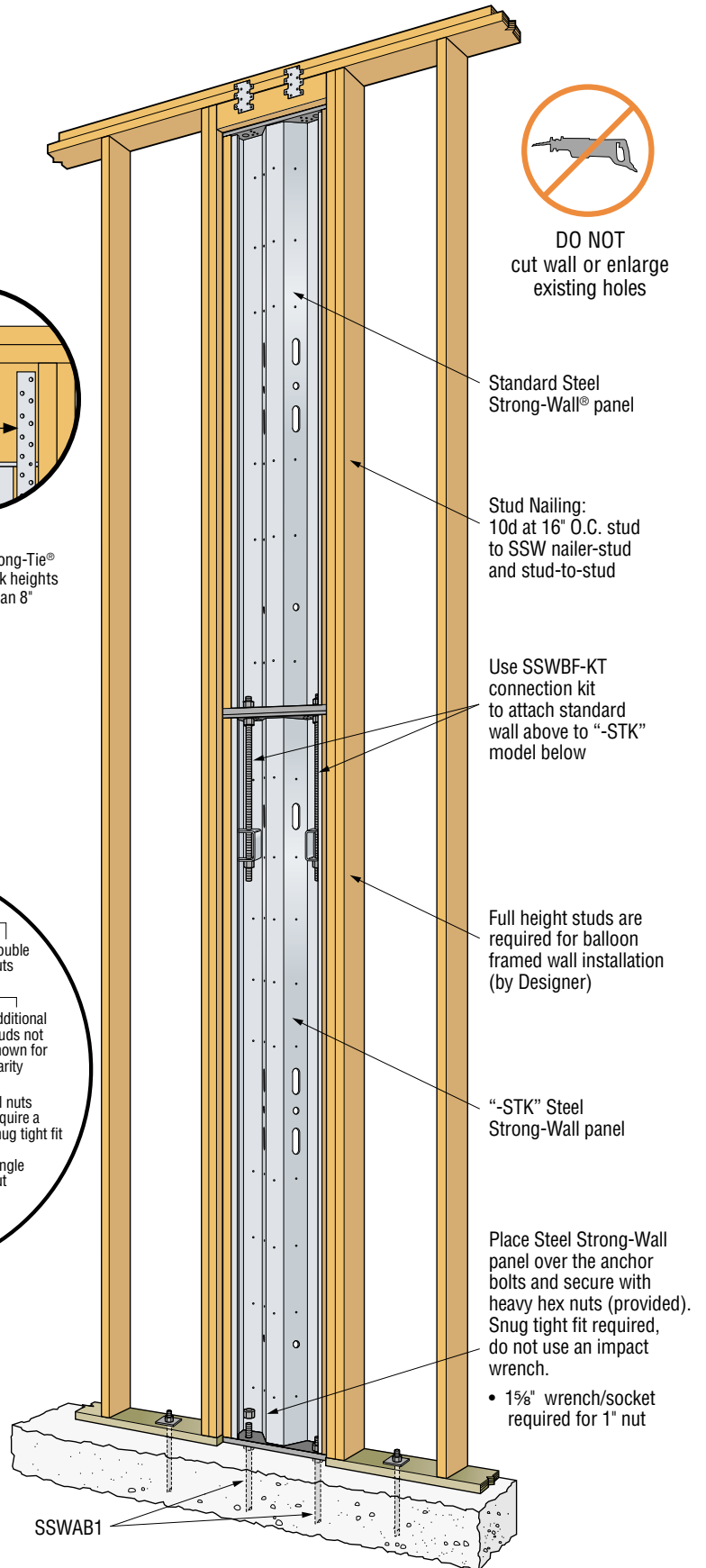


BALLOON FRAMING STACKED-WALL CONNECTION DETAIL



## BALLOON FRAMING ON CONCRETE THROUGH WOOD FLOOR

Installation for 1st-floor wood-floor system, specify taller wall model to allow for floor framing.



# STEEL STRONG-WALL®: Balloon Framing on Concrete Foundations

## 2006 INTERNATIONAL BUILDING CODE®

Nominal Wall Height (ft)	Actual Stacked SSW Height <sup>4</sup> (ft - in)	Bottom Wall SSW Model	Top Wall SSW Model	Seismic <sup>2</sup>			Wind		
				Allowable ASD Shear Load V (lbs)	Drift at Allowable Shear (in)	Uplift at Allowable Shear <sup>6</sup> (lbs)	Allowable ASD Shear Load V (lbs)	Drift at Allowable Shear (in)	Uplift at Allowable Shear <sup>6</sup> (lbs)
<b>15-INCH WIDE WALLS</b>									
15	14 - 5 ¼	SSW15x8-STK	SSW15x7	—	—	—	705	1.00	12465
16	15 - 6 ½	SSW15x8-STK	SSW15x8	—	—	—	645	1.06	12105
17	16 - 5 ¼	SSW15x10-STK	SSW15x7	—	—	—	595	1.11	11820
18	17 - 6 ½	SSW15x10-STK	SSW15x8	—	—	—	555	1.17	11655
19	18 - 6 ½	SSW15x10-STK	SSW15x9	—	—	—	520	1.23	11505
20	19 - 6 ½	SSW15x10-STK	SSW15x10	—	—	—	485	1.29	11260
<b>18-INCH WIDE WALLS</b>									
15	14 - 5 ¼	SSW18x8-STK	SSW18x7	890	0.79	12140	1130	1.00	16105
16	15 - 6 ½	SSW18x8-STK	SSW18x8	825	0.84	11995	1050	1.07	15945
17	16 - 5 ¼	SSW18x10-STK	SSW18x7	770	0.89	11890	980	1.13	15795
18	17 - 6 ½	SSW18x10-STK	SSW18x8	—	—	—	915	1.20	15585
19	18 - 6 ½	SSW18x10-STK	SSW18x9	—	—	—	860	1.27	15440
20	19 - 6 ½	SSW18x10-STK	SSW18x10	—	—	—	810	1.33	15290
<b>21-INCH WIDE WALLS</b>									
15	14 - 5 ¼	SSW21x8-STK	SSW21x7	1295	0.78	14750	1670	1.00	20000
16	15 - 6 ½	SSW21x8-STK	SSW21x8	1220	0.84	14855	1550	1.07	19770
17	16 - 5 ¼	SSW21x10-STK	SSW21x7	1135	0.89	14665	1445	1.13	19550
18	17 - 6 ½	SSW21x10-STK	SSW21x8	1065	0.95	14570	1350	1.20	19300
19	18 - 6 ½	SSW21x10-STK	SSW21x9	1000	1.00	14430	1270	1.27	19145
20	19 - 6 ½	SSW21x10-STK	SSW21x10	940	1.05	14260	1195	1.33	18930
<b>24-INCH WIDE WALLS</b>									
15	14 - 5 ¼	SSW24x8-STK	SSW24x7	1680	0.72	16260	2295	1.00	23645
16	15 - 6 ½	SSW24x8-STK	SSW24x8	1630	0.81	16955	2155	1.07	23730
17	16 - 5 ¼	SSW24x10-STK	SSW24x7	1545	0.87	17120	2005	1.13	23405
18	17 - 6 ½	SSW24x10-STK	SSW24x8	1470	0.94	17290	1875	1.20	23130
19	18 - 6 ½	SSW24x10-STK	SSW24x9	1390	1.00	17265	1765	1.27	22960
20	19 - 6 ½	SSW24x10-STK	SSW24x10	1310	1.05	17115	1660	1.33	22685

1. Allowable shear loads and anchor uplifts are applicable to installation on concrete with minimum  $f'_c = 2500$  psi using the ASD basic (Section 1605.3.1) or the alternative basic (Section 1605.3.2) load combinations. Load values include evaluation of bearing stresses on the foundation and do not require further evaluation by the Designer.
2. For seismic designs based on the 2006 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, drift, and uplift values apply to the nominal wall heights listed and may be linearly interpolated for intermediate heights.
4. Solid shim blocks (12" maximum) shall be used to attain specified nominal wall height. See detail 4/SSW3 on page 65 for additional details.
5. Full-height studs are required for balloon framed wall installation, which must be designed for out-of-plane loads in accordance with the applicable code. Two 2x6 minimum are required on each side and fastened together with 10d common nails at 16 inches on center.
6. Loads are based on a 1000 lbs. maximum axial load acting on the entire panel in combination with the shear load. For shear loads at 2000 lbs. maximum axial load, multiply allowable shears by 0.91 for SSW15x models; no reduction required for other wall models.
7. High-strength anchor bolts are required for anchor tension (uplift) forces exceeding the allowable load for standard-strength bolts tabulated on pages 32-33. See pages 32-37 for SSWAB anchor bolt information and anchorage solutions.
8. Tabulated anchor tension (uplift) loads assume no resisting axial load. For anchor tension loads at design shear values and including the effect of axial load, refer to the Strong-Wall Selector™ software or use the equations on page 15. Drifts at lower design shear may be linearly reduced.