SIMPSON
Strong-Tie®

Steel Strong-Wall® Shearwall Installations

Connector Training for Contractors Series

Name:

(800) 999-5099
www.strongtie.com

NO-EQUAL pledge

Every day we work hard to earn your business, blending the talents of our people with the quality of our products and services to exceed your expectations. This is our pledge to you.

Table of Contents

Introduction

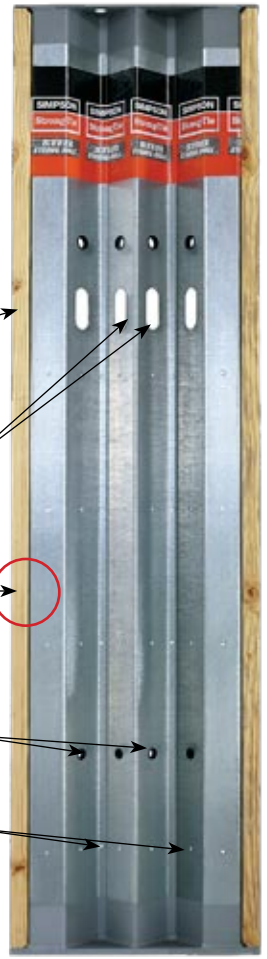
Welcome to the ***Steel Strong-Wall Installations Student Guide***. This guide summarizes key points explained in the video. Review the information in this guide before you take the test.

Industry Terms

Steel Strong-Wall®

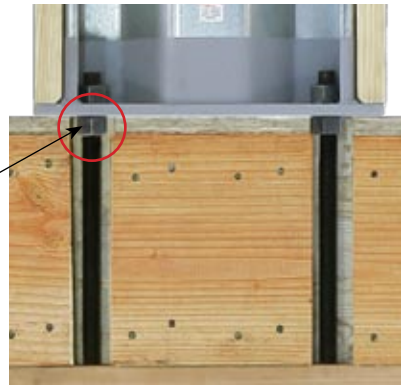
- A prefabricated metal shear wall designed to support vertical gravity loads and lateral loads resulting from wind or earthquakes.

Hardware kit contains heavy hex nuts and SDS screws



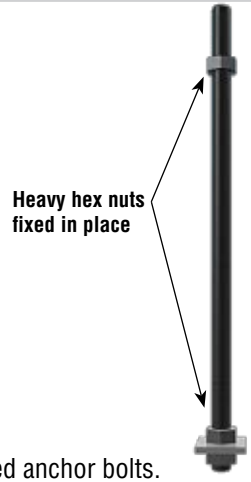
Compression Nut

- A heavy hex nut that is positioned flush with the top of the subfloor and tight to the underside of the Steel Strong-Wall above.
- It improves the overall performance of the Steel Strong-Wall Shearwall by transferring the compression load into the all-thread rod.



SSWAB Anchor Bolts

- Available in ¾" and 1" diameters
- Transfers the forces from the shearwall to the foundation. This keeps the shearwall from sliding or overturning



SSW Concrete Templates

- Reusable templates that attach to the form boards.
- Used to properly space, hold, and elevate the required anchor bolts.

SSWT

Can be used for both interior and exterior applications.

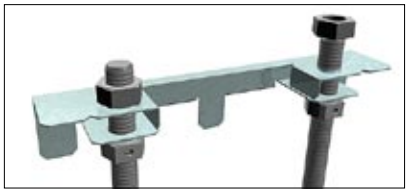
SSWTPF

Used for panel-form applications.

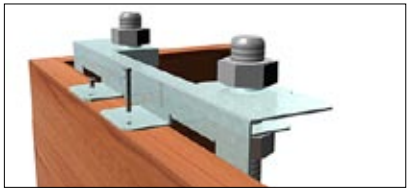
SSWTBL

Used for brick-ledge applications.

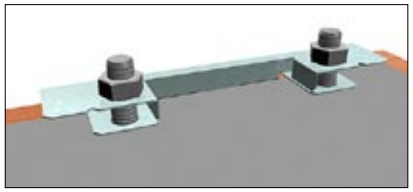
Template Installation



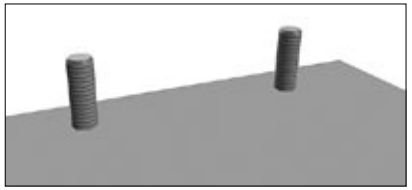
1. Secure the anchor bolts to the template with the additional nuts provided.



2. Place the whole assembly on the wood form.



3. Pour the concrete to the top of the compression nut.



4. After the concrete is cured, remove the nails, the nuts, and the reusable template.

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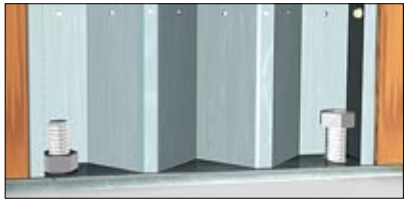
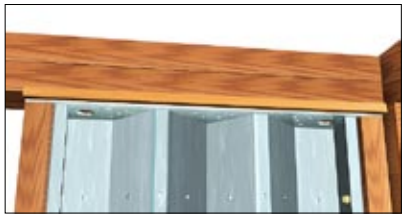
Steel Strong-Wall® Shearwall Installation on Concrete Foundations

1. Place the Steel Strong-Wall over the anchor bolts.

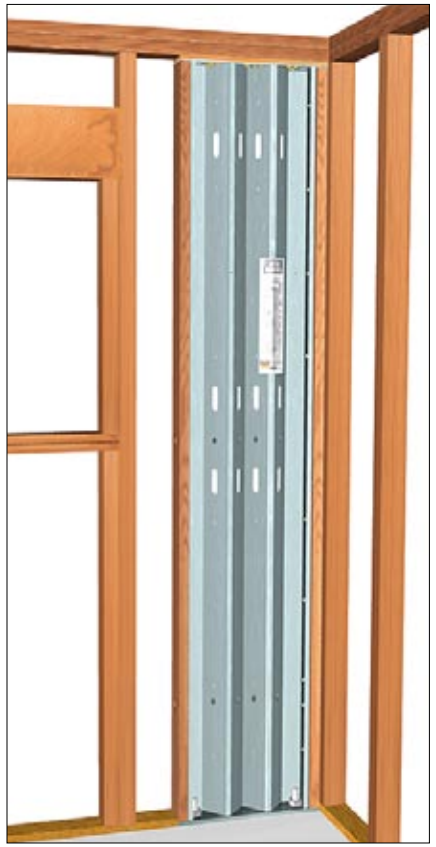


2. Install the nuts that are provided in the hardware kit. A snug, tight fit is required; use a hand wrench or socket.



3. Place an additional shim between the Steel Strong-Wall and the wall-framing top plates.

4. Attach the wall to the top plates with the SDS ¼" x 3½" screws that are provided with the Steel Strong-Wall.



Complete installation of the standard Steel Strong-Wall

DO NOT USE AN IMPACT WRENCH
DO NOT CUT OR ENLARGE HOLES

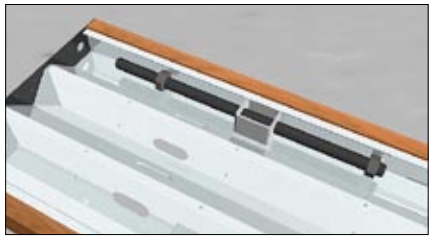
For garage front-wall installations, attach the wall to the header with SDS ¼" x 3½" screws.

Balloon-Framing Installation on Concrete Foundations

A balloon-framing application is used when there is a need for walls between 15' and 20'. This application connects two Steel Strong-Wall Shearwalls. Use an -STK model wall for the lower wall, and a standard steel wall at the top.

SSWBF-KT connection kit contains two threaded rods and four heavy hex nuts

1. Pass the threaded rod through the factory-installed tube element on the bottom shearwall.



2. Place a nut in two areas: one below the tube and the second at the underside of the top plate about 3½" from the end of the rod.

3. Place the top wall above the lower wall.

4. Securely fasten the upper wall to the bottom wall with the heavy hex nuts provided.

5. Tighten all six nuts of the entire assembly before placing it in an upright position.

6. Place the assembly over the anchor bolts and secure with heavy hex nuts.

7. Attach a shim block as necessary between the Steel Strong-Wall and the double top plates with SDS ¼" x 3½".

8. Connect the top plates and the shim block on each side of the wall with either LTP4 or A35 connectors.

9. Place the required full-height studs (two 2 x 6 minimum) on each side with 10d nails at 16" on center.

Complete installation of the balloon-framing application

Two-Story Stacked-Wall Installation

The two-story stacked installation requires an -STK model wall for the first floor and a standard wall at the second floor.

SSW15*(specific wall width)*-2KT connection kit contains one shear transfer plate sized for the specific wall with #14 x ¾" self-drilling screws, two 1" x 48" threaded rods, and six heavy hex nuts

1. Install the bottom wall using the standard wall installation instructions.

2. Drill a 1$\frac{1}{16}$" maximum diameter hole through the shim and the top plates, at the holes in the top of the Steel Strong-Wall.

3. Install the rim joist and solid blocking the full width of the Strong-Wall above.

4. Drill a 2' hole or cut a 2"x 2" notch in the subfloor to allow for compression nuts.

5. Pass the rod all the way up through the tube to the floor system. Install one nut above the tube.

6. Pass the rod back down through the tube. Install a nut below the tube and secure it in place.

7. Install compression nuts on each rod flush with the top of the sub floor.

8. Place the second-floor wall over the rods.

9. Install the two nuts at the bottom and SDS screws into the top plates.

10. Install the SSW shear transfer plate on the outside face using 10d nails in the rim joist and #14 self-drilling screws in the upper shearwall.

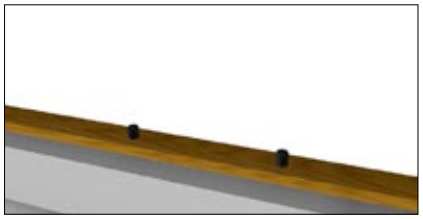
11. Install the specified number of LTP4s from the rim to the double top plates.

12. Install A34 connectors on each side from the SSW stud to the wall sill plate on the top floor.

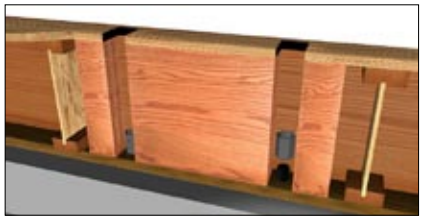
Complete installation of the two-story stacked wall application

Installation for the First Floor on a Wood-Floor System

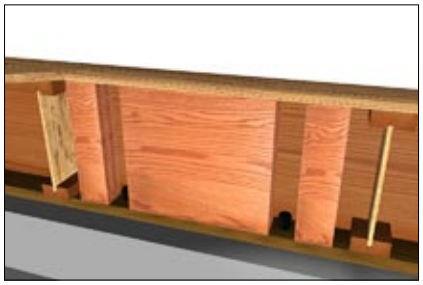
SSW15*(specific wall width)*-1KT connection kit contains one shear transfer plate sized for the specific wall with #14 x ¾" self-drilling screws, two 1" x 18" threaded rods, two coupler nuts, and two heavy hex nuts



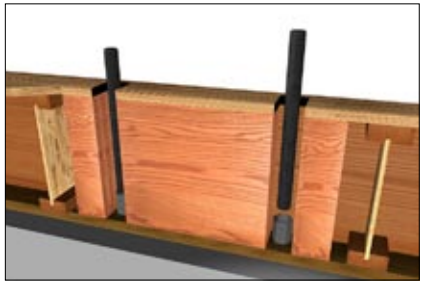
1. Install the mudsill over the SSWAB anchor bolts.



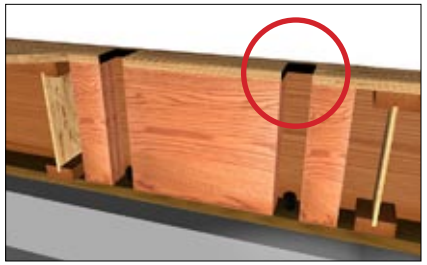
4. Install a coupler nut onto each anchor bolt.



2. Install the rim joist and solid blocking the full width of the Strong-Wall above.



5. Thread the 18" threaded rod into each coupler nut.

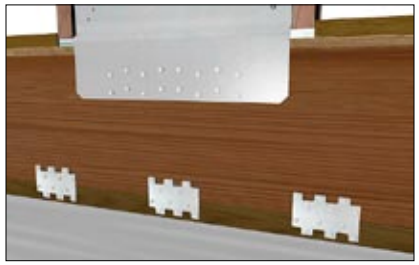


3. Drill a 2" hole or cut a 2" x 2" notch in the subfloor to allow for compression nuts.

6. Install the compression nut on each rod flush with the top of the subfloor.

7. Place the wall over the rods and complete the installation similar to the first-floor wall. Install the two nuts at the bottom and SDS screws into the top plates.

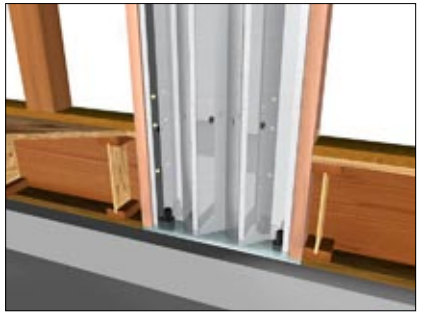
8. Install the SSW shear transfer plate on the outside face using 10d nails in the rim joist and #14 self-drilling screws in the Strong-Wall.



9. Install the specified number of LTP4s from the rim to the sill plate.

10. Install A34 connectors on each side from the SSW stud to the wall sill plate.

Complete installation of the first story on a wood-floor system



Alternate installation of the first story on a wood-floor system

Steel Strong-Wall® Shearwall Installations: Post-Training Test

Instructions

There are 12 questions. Each question is worth one point. You must answer 9 out of 12 questions correctly to pass this test. Some questions have more than one right answer. Choose the best option or options for each question. Good luck!

TEST

1. What is a compression nut?

A. A compressed nut
B. A heavy hex nut that is used to fix the SSW
C. A heavy hex nut that is placed flush with the top of the subfloor and tight to the underside of the SSW above
D. A heavy hex nut that is used to compress the SSW

2. Steel Strong-Wall Anchor Bolts (SSWAB) have heavy hex nuts fixed in place and offer the flexibility to meet specific project demands. What diameters are these anchor bolts available in?

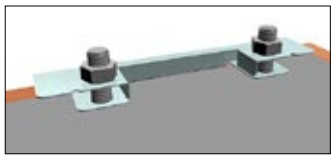
A. ¼" and ½"
B. ¾" and 1"
C. 1½"
D. All of the above

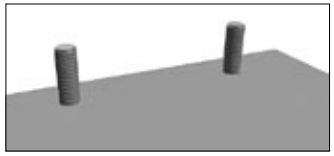
3. What is the purpose of Steel Strong-Wall concrete templates?

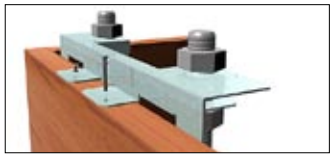
A. To properly space, hold, and elevate the required anchor bolts
B. To temporarily hold the Steel Strong-Wall in place during installation
C. To keep the Steel Strong-Wall from sliding over time
D. None of the above

4. Order the steps required to properly install an SSW concrete template.

4 - A ___ 

4 - C ___ 

4 - B ___ 

4 - D ___ 

5. Match the SSW concrete template to the application it is used for.

5 - A Panel-form applications

5 - B Interior and exterior applications

5 - C Brick-ledge applications

a.  **SSWT**

b.  **SSWTBL**

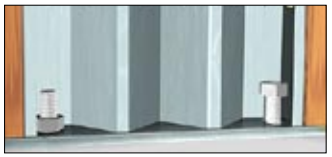
c.  **SSWTPF**

6. All of the following statements about Steel Strong-Wall concrete templates are true, except:

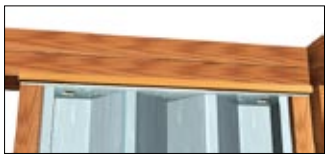
A. Templates are available for each different wall width.
B. Templates can be used for standard wall, panel-form, and brick-ledge applications.
C. Templates are reusable.
D. There is one basic template used for all applications.

7. Order the steps required to properly install the standard Steel Strong-Wall.

7 - A ___ 

7 - C ___ 

7 - B ___ 

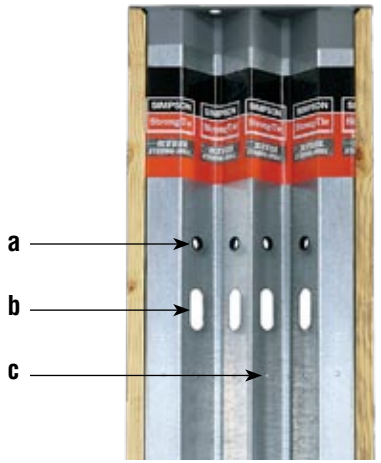
7 - D ___ 

8. All of the following are rules to follow during SSW installations, except:

A. Use the nuts and SDS screws provided in the hardware kit.
B. Tighten nuts on the anchor bolts with a wrench or hand socket, not an impact wrench.
C. You may cut holes or enlarge existing holes in the wall if needed.
D. Use specific-size templates to install SSWAB anchor bolts.

9. Which hole on the Steel Strong-Wall is pre-drilled for wiring?

A. a
B. b
C. c
D. None of the above



10. What is the difference between the balloon-framing installation and the two-story stacked installation?

A. The two-story stacked installation is for wood-floor systems and the balloon-framing is done on concrete.
B. The balloon-framing installation does not require a factory-installed -STK model wall and the two-story stacked does.
C. The balloon-framing connects one standard Steel Strong-Wall directly to one -STK model to act as one wall, while in the two-story stacked, walls seperate with the wood-floor system.
D. No difference – these two terms refer to the same installation.

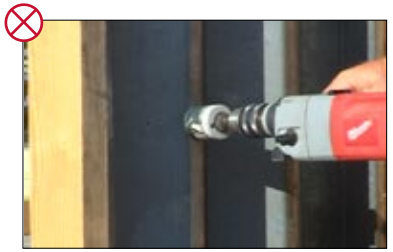
11. The installation for the first-story wall on a wood-floor system is most similar to what other installation?

A. The standard Steel Strong-Wall on a concrete foundation
B. The upper wall of the two-story stacked installation
C. The bottom wall of the balloon-framing installation
D. None of the above

12. For the balloon-framing and two-story stacked installations, where does the -STK model wall go?

A. The lower wall
B. The upper wall
C. Both floors
D. None of the above

Hot Spots

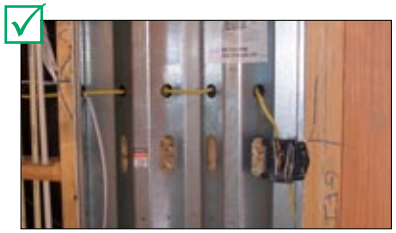


Do not cut the Steel Strong-Wall or enlarge its existing holes.

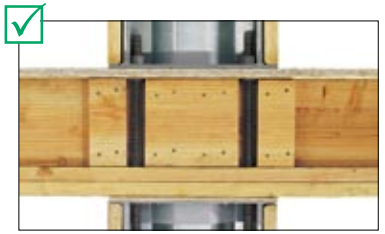
Use specific-size templates to install SSWAB anchor bolts.

Do not use an impact wrench to tighten nuts on the anchor bolts.

Use a wrench or socket for a snug-tight fit.



Pass the electric wires through the pre-drilled holes in the SSW.



Make sure that blocking below the wall is installed correctly.

The maximum height of the shim block is 8".

The 2 x 4 Steel Strong-Wall may be used in 2 x 6 wall framing. First install the Steel Strong-Wall flush to one face of the framing. Then, add furring to the opposite side.