

**LSTHD/STHD** Strap-Tie Holdown



This product is preferable to similar connectors because of  
a) easier installation, b) higher loads, c) lower installed cost,  
or a combination of these features.

The STHD is an embedded strap-tie holdown offering high load capacity and a staggered nail pattern to help minimize splitting. The STHD incorporates many features that aid correct installation and improve performance. When installed on the forms with the StrapMate® strap holder the unique design of the STHD delivers enhanced stability before and during the pour to help prevent both parallel and perpendicular movement (relative to the form). This results in accurate positioning of the strap and reduced possibility of spalling.

The Simpson Strong-Tie® STHD strap-tie holdowns are now code listed by ICC-ES under the 2006 and 2009 IBC and IRC to meet the requirements of ICC-ES acceptance criteria AC 399. See ICC-ES ESR-2920 for more information.

**FEATURES**

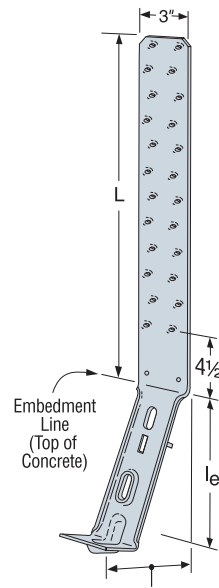
- The nailing pattern allows for nailing to the edges of double 2x's
- Strap nail slots are countersunk to provide a lower nail head profile
- The slots below the embedment line enable increased front-to-back concrete bond and help to reduce spalling
- Rim joist models accommodate up to a 17" clear span without any loss of strap nailing

**MATERIAL:** LSTHD8, LSTHD8RJ—14 gauge, all others—12 gauge

**FINISH:** Galvanized

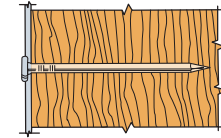
**INSTALLATION:** • Use all specified fasteners. See General Notes.

- Use table below for both standard concrete and post-tension slab installations.
- Install before concrete pour with a StrapMate, or other holding device.
- Nail strap from the bottom up.
- Strap may be bent one full cycle (bent horizontal 90° then bent vertical) to aid wall placement, but may cause spalling behind the strap. If the spall is 1" or less, measured from the embedment line to the bottom of the spall, full loads apply. Any portion of the strap left exposed should be protected against corrosion.
- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or the slab is designed to resist the load imposed by the anchor; or (b) slabs are poured over concrete block foundation walls.
- Additional studs attached to the shearwall studs or post may be required by the Designer for wall sheathing nailing.

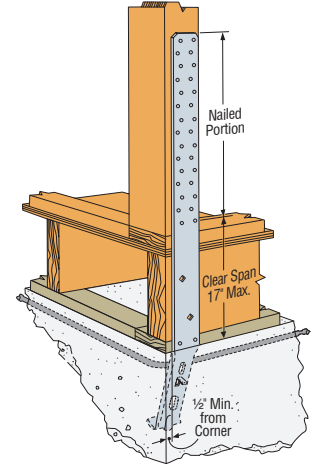


LSTHD8 varies from 4" to 4 1/2"  
STHD10, STHD14 varies from 4 3/4" to 5 1/4"

**STHD**  
U.S. Patent  
5,813,182



Nails are countersunk for a low-profile strap surface.



**Typical STHD14RJ Rim Joist Application**

- Wood shrinkage after strap installation across horizontal members may cause strap to buckle outward.
- CODES:** See page 20 for Code Reference Key Chart.

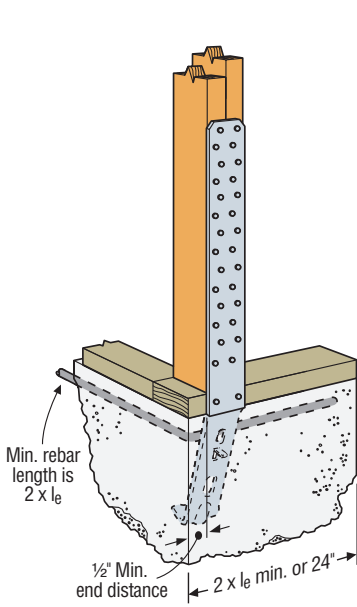
**Tension Loads for STHD Installations**

WIND AND SDC A & B – ALLOWABLE TENSION LOADS FOR DF/SP/SPF/HF (160)													
Min. Stem Wall (in)	Model No.		Strap Length (L)		le (in)	Req'd Nails	Non Cracked			Cracked			Code Ref.
	Standard	Rim Joist	Standard (in)	Rim Joist (in)			Midwall	Corner	Endwall	Midwall	Corner	Endwall	
6	LSDTHD8	LSTHD8RJ	18%	32%	8	20 -16d Sinks	3115	2860	1690	2675	2355	1455	I25
	STHD10	STHD10RJ	24%	38%	10	24 -16d Sinks	3820	3820	2050	3140	3140	1705	
	STHD14	STHD14RJ	26%	39%	14	30 -16d Sinks	5150	5150	3200	5150	5150	3200	
8	LSDTHD8	LSTHD8RJ	18%	32%	8	20 -16d Sinks	3115	2860	2230	2675	2355	1915	
	STHD10	STHD10RJ	24%	38%	10	28 -16d Sinks	4755	4120	3145	4195	3500	2585	
	STHD14	STHD14RJ	26%	39%	14	30 -16d Sinks	5345	5345	4165	5345	5345	4165	
SDC C-F – ALLOWABLE TENSION LOADS FOR DF/SP/SPF/HF (160)													
Min. Stem Wall (in)	Model No.		Strap Length (L)		le (in)	Req'd Nails	Non Cracked			Cracked			Code Ref.
	Standard	Rim Joist	Standard (in)	Rim Joist (in)			Midwall	Corner	Endwall	Midwall	Corner	Endwall	
6	LSDTHD8	LSTHD8RJ	18%	32%	8	16 -16d Sinks	2270	2185	1220	2250	1975	1220	I25
	STHD10	STHD10RJ	24%	38%	10	18 -16d Sinks	2750	2750	1615	2640	2640	1435	
	STHD14	STHD14RJ	26%	39%	14	22 -16d Sinks	3695	3695	2685	3695	3695	2685	
8	LSDTHD8	LSTHD8RJ	18%	32%	8	16 -16d Sinks	2615	2185	1635	2250	1975	1610	
	STHD10	STHD10RJ	24%	38%	10	20 -16d Sinks	3400	2940	2295	3400	2940	2175	
	STHD14	STHD14RJ	26%	39%	14	24 -16d Sinks	3815	3815	3500	3815	3815	3500	

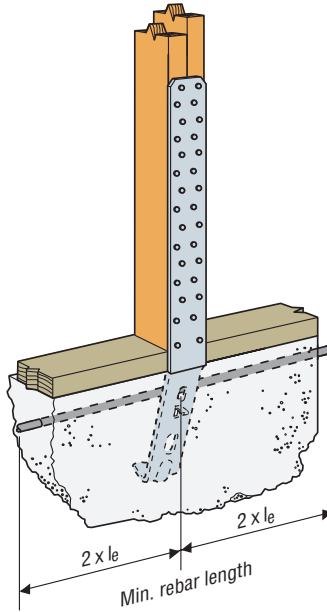
1. Allowable loads are for wind or seismic loading. Nail quantities reflect an increase for duration of load with no further increase allowed. Reduce where other loads govern.
2. Concrete shall have a minimum concrete strength,  $f_c$  of 2500 psi.
3. 10d common (3" long x 0.148" diameter) nails may be used with no load reduction. 10dx2 1/2" (2 1/2" long x 0.148" diameter) nails may be used with no load reduction when installed directly over framing. For installation over structural sheathing, use 10d common or 16d sinks.
4. Use the specified number of nails listed in table or as specified. In many cases, not all nail holes will be filled. Nail strap from the bottom up.
5. The Designer may specify a reduced quantity of nails for some applications. See T-NAILOPT for details.
6. Deflection at highest allowable loads for install over wood double studs are as follows:  
Installed on framing: LSTHD8 = 0.089", STHD8 = 0.085", STHD10 = 0.117" and STHD14 = 0.118"  
Installed over structural sheathing: LSTHD8 = 0.114", STHD8 = 0.123", STHD10 = 0.146" and STHD14 = 0.164".
7. Multiply Seismic and Wind ASD load values by 1.4 or 1.6 respectively to obtain LRFD capacities.
8. Per 2006 and 2009 IBC Section 1613.1, detached one- and two-family dwellings in Seismic Design Category (SDC) C may use "Wind and SDC A&B" allowable loads.
9. Minimum center-to-center spacing is 3 times the required embedment ( $S_{min} = 3 \times l_e$ ) for STHD's acting in tension simultaneously. Midwall install is based on  $1.5 \times l_e$  end distance.
10. See T-SCLCOLUMN for installation on structural composite lumber posts or columns (see page 215 for details).
11. **NAILS:** 16d sinker = 0.148" dia. x 3 3/4" long. See page 24-25 for other nail sizes and information.

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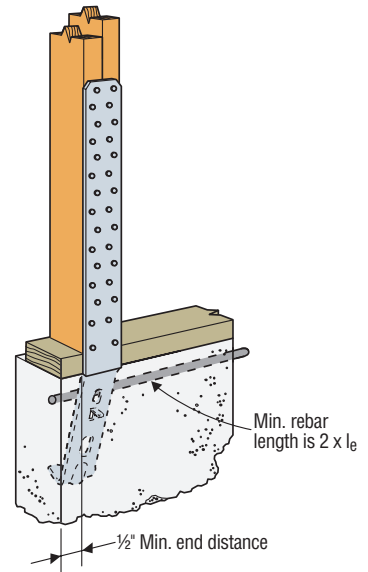
Holdowns & Tension Ties



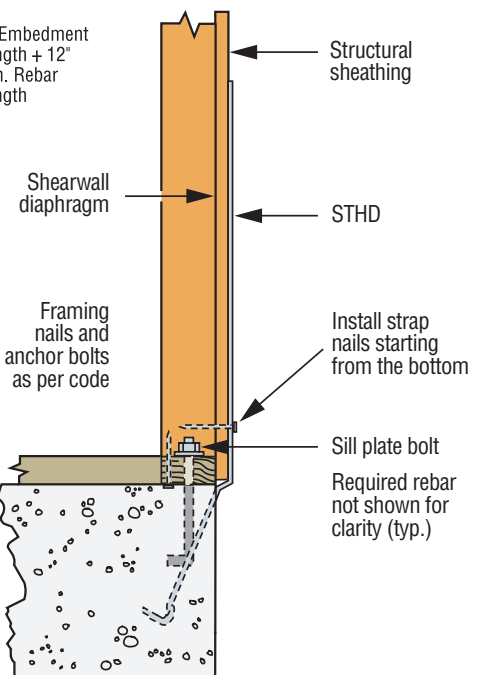
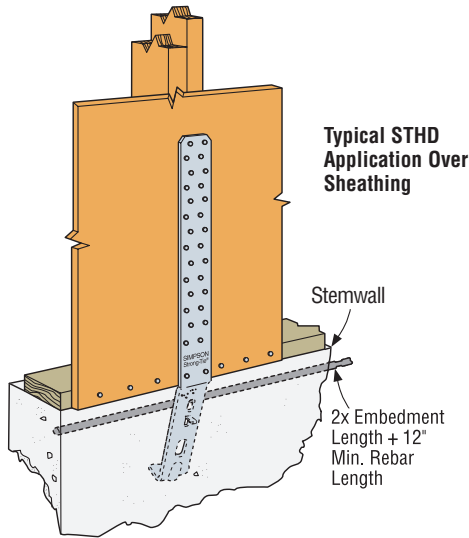
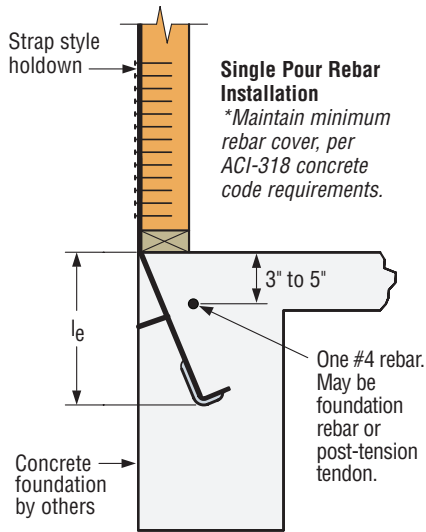
**Typical STHD14**  
Corner Installation



**Typical STHD14**  
Mid Wall Installation



**Typical STHD14**  
End Wall Installation



**STHD Over**  
Shearwall Diaphragm

**SPALL REDUCTION SYSTEM FOR STHD STRAP TIE HOLDOWN**

**FEATURES**

- Built-in tab.
- StrapMate® locator line.
- Additional diamond hole in RJ versions.

**BENEFITS**

**Built-in Tab:**

- Reduces spalling and costly retrofits.
- No additional labor to install.
- Holds STHD away from form board.

**StrapMate Locator Line:**

- Easy inspection to ensure proper location.
- Allows adjustment without removing STHD.

**Additional Diamond Hole:**

- One more fastener to help prevent the STHD RJ models from bowing out at the rim joist section.

