STHD/LSTHD Strap Tie Holdowns

SIMPSON Strong-Tie

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. 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.

Features

- The fastener pattern allows for fastening to the edges of back-to-back studs
- 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 fastening

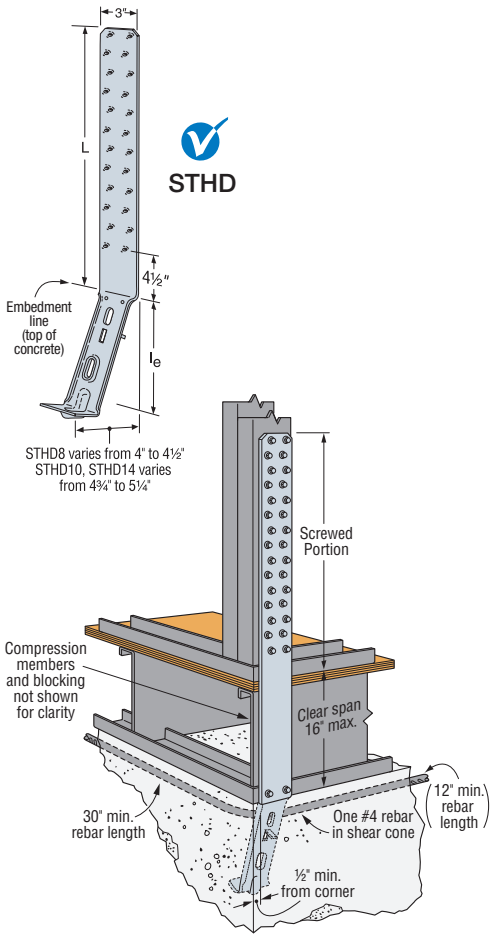
Material: LSTHD8, LSTHD8RJ — 14 gauge, all others — 12 gauge

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.
- Fasten strap from the bottom up. Install strap plumb.
- 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. 1" to 4" spalls for LSTHD8 achieve 0.9 times table loads. STHD10 and STHD14 achieve full load for spalls less than 4". Any portion of the strap left exposed should be protected against corrosion.
- Other than where noted in the two-pour detail, 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 fastening.
- For installation in severe corrosion environments, refer to **strongtie.com/cipcorrosion** for additional considerations.

Codes: See p. 13 for Code Reference Key Chart



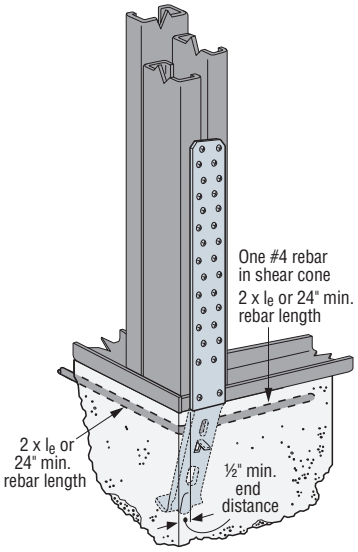
Typical STHD14RJ Rim Joist Application

Allowable Stress Design (ASD) Loads for STHD Strap Style Holdowns on CFS — 2,500 psi Concrete

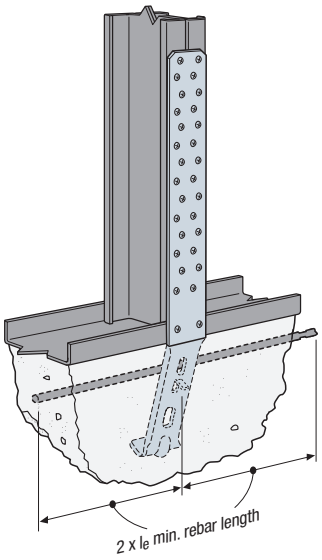
Wind and SDC A & B — Allowable Tension Loads (lb.) — 33 mil (20 ga.) Studs														Code Ref.
Min. Stem Wall (in.)	Model No.		Strap Length (L)		le (in.)	Uncracked				Cracked				
	Standard	Rim Joist	Standard (in.)	Rim Joist (in.)		Req'd Screws	Midwall	Corner	Endwall	Req'd Screws	Midwall	Corner	Endwall	
6	LSTHD8	LSTHD8RJ	18⅝	32⅛	8	(20) #10	2,985	2,590	1,620	(16) #10	2,565	2,225	1,395	IBC, LA, FL
	STHD10	STHD10RJ	24⅝	38⅛	10	(24) #10	3,535	3,535	1,960	(22) #10	2,910	2,910	1,635	
	STHD14	STHD14RJ	26⅛	39⅝	14	(30) #10	4,935	4,935	3,065	(30) #10	4,935	4,935	3,065	
8	LSTHD8	LSTHD8RJ	18⅝	32⅛	8	(20) #10	2,985	2,590	2,135	(16) #10	2,565	2,225	1,835	
	STHD10	STHD10RJ	24⅝	38⅛	10	(28) #10	4,755	4,075	3,015	(22) #10	4,020	3,350	2,480	
	STHD14	STHD14RJ	26⅛	39⅝	14	(30) #10	5,285	5,285	4,410	(30) #10	5,285	5,285	4,410	
SDC C–F — Allowable Tension Loads (lb.) — 33 mil (20 ga.) Studs														
Min. Stem Wall (in.)	Model No.		Strap Length (L)		le (in.)	Uncracked				Cracked				
	Standard	Rim Joist	Standard (in.)	Rim Joist (in.)		Req'd Screws	Midwall	Corner	Endwall	Req'd Screws	Midwall	Corner	Endwall	
6	LSTHD8	LSTHD8RJ	18⅝	32⅛	8	(16) #10	2,270	2,090	1,220	(14) #10	2,250	1,950	1,220	
	STHD10	STHD10RJ	24⅝	38⅛	10	(18) #10	2,750	2,750	1,615	(18) #10	2,550	2,550	1,435	
	STHD14	STHD14RJ	26⅛	39⅝	14	(22) #10	3,695	3,695	2,685	(22) #10	3,695	3,695	2,685	
8	LSTHD8	LSTHD8RJ	18⅝	32⅛	8	(16) #10	2,615	2,125	1,635	(14) #10	2,250	1,950	1,610	
	STHD10	STHD10RJ	24⅝	38⅛	10	(20) #10	3,400	2,940	2,295	(20) #10	3,400	2,940	2,175	
	STHD14	STHD14RJ	26⅛	39⅝	14	(24) #10	3,815	3,815	3,500	(24) #10	3,815	3,815	3,500	

1. Deflection at highest allowable loads for install over CFS double studs are as follows: LSTHD8 = 0.065", STHD10 = 0.096" and STHD14 = 0.115".
2. Multiply Seismic and Wind ASD load values by 1.4 or 1.67, respectively, to obtain LRFD capacities.
3. Per 2012, 2015, 2018 and 2021 IBC Section 1613, detached one- and two-family dwellings assigned to Seismic Design Category (SDC) A, B or C are exempt from the seismic design provisions of IBC Section 1613. For this case, the allowable wind loads apply.
4. 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 x l_e end distance.
5. See the current *Fastening Systems* catalog at **strongtie.com** for more information on Simpson Strong-Tie fasteners.

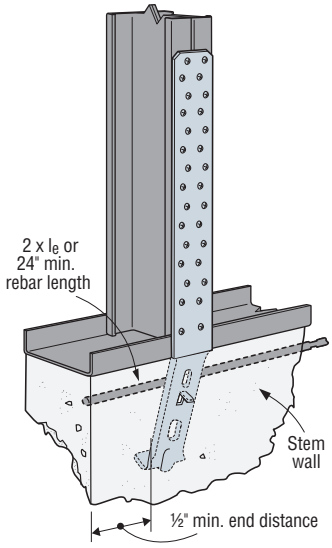
STHD/LSTHD Strap Tie Holdowns



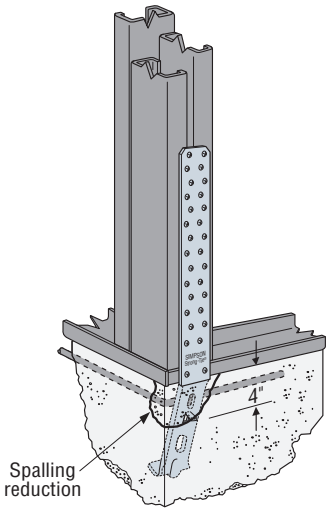
Typical STHD14 Corner Installation on Three Studs
(end of wall similar)



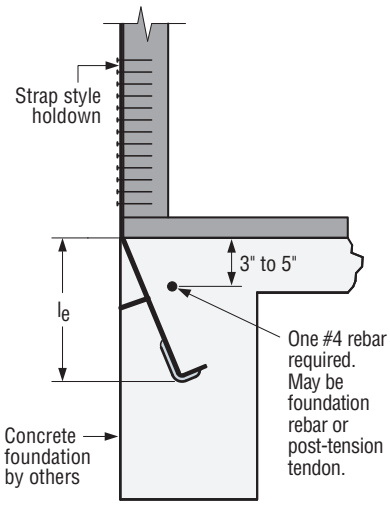
Typical STHD14 Mid-Wall Installation



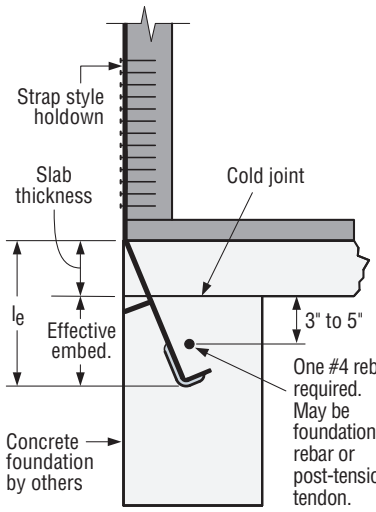
Typical STHD End Installation



Spalling Load Reduction
If strap is bent horizontal 90° during installation and then bent vertical for fastening to the stud, concrete spalling could result. Load reductions may apply, see installation note.



Single-Pour Rebar Installation
Maintain minimum rebar cover, per ACI-318 concrete code requirements.



Two-Pour Installation for Downturn Footings

Spall Reduction System for STHD 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.