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.

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 on pp. 75–76.
- Use tables 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. 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 nailing.
- Wood shrinkage after strap installation across horizontal members may cause strap to buckle outward.
- For installations in severe corrosion environments, refer to strongtie.com/cipcorrosion for additional considerations.
- See installation illustrations on p. 85 for rebar information.

For Two-Pour Installation for Downturn Footings
- For STHD10 installed through a 4”-thick slab, use the equivalent 8”-stemwall loads of the LSTHD8.
- For STHD14 installed through a 4”-thick slab, use the equivalent 8”-stemwall loads of the STHD10.
- For STHD14 installed through a 6”-thick slab, use the equivalent 8”-stemwall loads of the LSTHD8.

Codes: See p. 14 for Code Reference Key Chart
Simpson Strong-Tie® Wood Construction Connectors

LSTHD/STHD

Strap-Tie Holdowns (cont.)

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
## Strap-Tie Holdowns (cont.)

### Tension Loads for STHD Installations

#### Wind and SDC A&B — Allowable Tension Loads for DF/SP/SPF/HF (160)

<table>
<thead>
<tr>
<th>Min. Stemwall (in.)</th>
<th>Model No.</th>
<th>Strap Length (L)</th>
<th>l_e (in.)</th>
<th>Required Nails</th>
<th>Non-Cracked</th>
<th>Cracked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Rim Joist</td>
<td>Standard</td>
<td>Rim Joist</td>
<td>Midwall</td>
<td>Corner</td>
</tr>
<tr>
<td>6</td>
<td>LSTHD8</td>
<td>LSTHD8RJ</td>
<td>18%</td>
<td>32%</td>
<td>(20) 16d</td>
<td>3,115</td>
</tr>
<tr>
<td></td>
<td>STHD10</td>
<td>STHD10RJ</td>
<td>24%</td>
<td>38%</td>
<td>(24) 16d</td>
<td>3,220</td>
</tr>
<tr>
<td></td>
<td>STHD14</td>
<td>STHD14RJ</td>
<td>26%</td>
<td>39%</td>
<td>(30) 16d</td>
<td>5,150</td>
</tr>
<tr>
<td>8</td>
<td>LSTHD8</td>
<td>LSTHD8RJ</td>
<td>18%</td>
<td>32%</td>
<td>(20) 16d</td>
<td>3,115</td>
</tr>
<tr>
<td></td>
<td>STHD10</td>
<td>STHD10RJ</td>
<td>24%</td>
<td>38%</td>
<td>(28) 16d</td>
<td>4,755</td>
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<tr>
<td></td>
<td>STHD14</td>
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<td>26%</td>
<td>39%</td>
<td>(30) 16d</td>
<td>5,345</td>
</tr>
</tbody>
</table>

#### SDC C–F — Allowable Tension Loads for DF/SP/SPF/HF (160)

<table>
<thead>
<tr>
<th>Min. Stemwall (in.)</th>
<th>Model No.</th>
<th>Strap Length (L)</th>
<th>l_e (in.)</th>
<th>Required Nails</th>
<th>Non-Cracked</th>
<th>Cracked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Rim Joist</td>
<td>Standard</td>
<td>Rim Joist</td>
<td>Midwall</td>
<td>Corner</td>
</tr>
<tr>
<td>6</td>
<td>LSTHD8</td>
<td>LSTHD8RJ</td>
<td>18%</td>
<td>32%</td>
<td>(16) 16d</td>
<td>2,270</td>
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<tr>
<td></td>
<td>STHD10</td>
<td>STHD10RJ</td>
<td>24%</td>
<td>38%</td>
<td>(18) 16d</td>
<td>2,750</td>
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<tr>
<td></td>
<td>STHD14</td>
<td>STHD14RJ</td>
<td>26%</td>
<td>39%</td>
<td>(22) 16d</td>
<td>3,695</td>
</tr>
<tr>
<td>8</td>
<td>LSTHD8</td>
<td>LSTHD8RJ</td>
<td>18%</td>
<td>32%</td>
<td>(16) 16d</td>
<td>2,615</td>
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<tr>
<td></td>
<td>STHD10</td>
<td>STHD10RJ</td>
<td>24%</td>
<td>38%</td>
<td>(20) 16d</td>
<td>3,400</td>
</tr>
<tr>
<td></td>
<td>STHD14</td>
<td>STHD14RJ</td>
<td>26%</td>
<td>39%</td>
<td>(24) 16d</td>
<td>3,815</td>
</tr>
</tbody>
</table>

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\,’, of 2,500 psi.
3. 10d common (3” long x 0.148”) or 10d x 2½” (2½” long x 0.148”) nails may be used as a direct replacement for the required nails shown in the table with no load reduction when installed directly over framing or over ½” max. structural sheathing.
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. Deflection at highest allowable loads for install over wood double studs are as follows: Installed on framing: LSTHD8 = 0.089", STHD10 = 0.117" and STHD14 = 0.118". Installed over ½" maximum structural sheathing: LSTHD8 = 0.114", STHD10 = 0.146" and STHD14 = 0.164".
6. To obtain LRFD values for STHD holdowns, multiply ASD seismic load values by 1.4 and wind load values by 1.6 (1.67 for 2015 IBC).
8. Minimum center-to-center spacing is three times the required embedment (S_{min} = 3 x l_e) for STHD’s acting in tension simultaneously. Midwall install is based on 1.5 x l_e end distance.
9. For brick ledge applications, use full loads shown for STHD14 installed in 8” stemwall.
10. Nails: 16d sinker = 0.148” dia. x 3¼” long. See pp. 26–27 for other nail sizes and information.