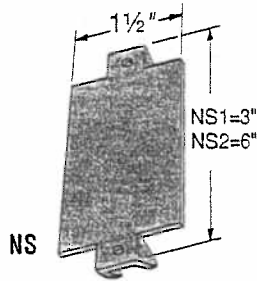


**UPDATED**

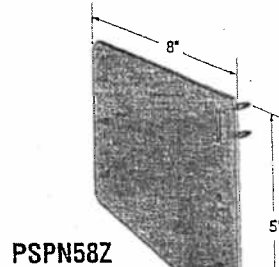
# Plumbing/HVAC



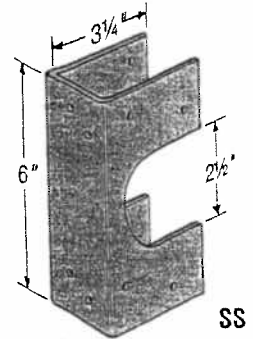
## Repair and Protective Parts



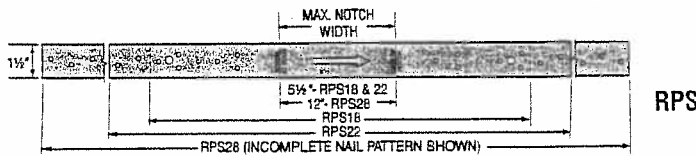
Prevents penetration of fasteners into electrical wires or plumbing pipe. Attach with 8d commons. 16 gauge to meet code.



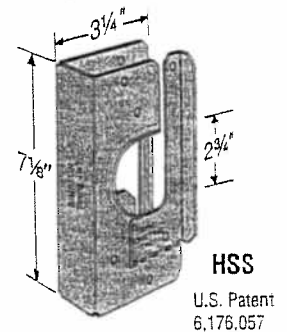
Protective shield plate designed to prevent nails or screws from piercing plumbing pipes. Now in ZMAX™ for corrosion resistance and 16 gauge to meet code.



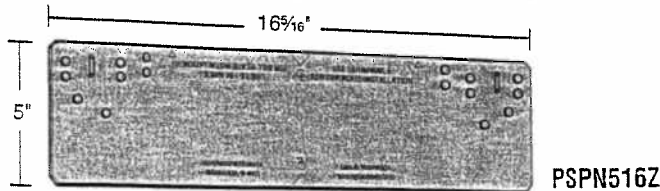
Stud shoes reinforce studs notched in construction. See back for load information. Available in sizes for 2x, 2-2x, 3-2x, and 3x studs. 16 gauge to meet code.



The RPS meets code requirements to transfer lateral loads across top and/or bottom plates. Now available in ZMAX™ for corrosion resistance and 16 gauge to meet code.



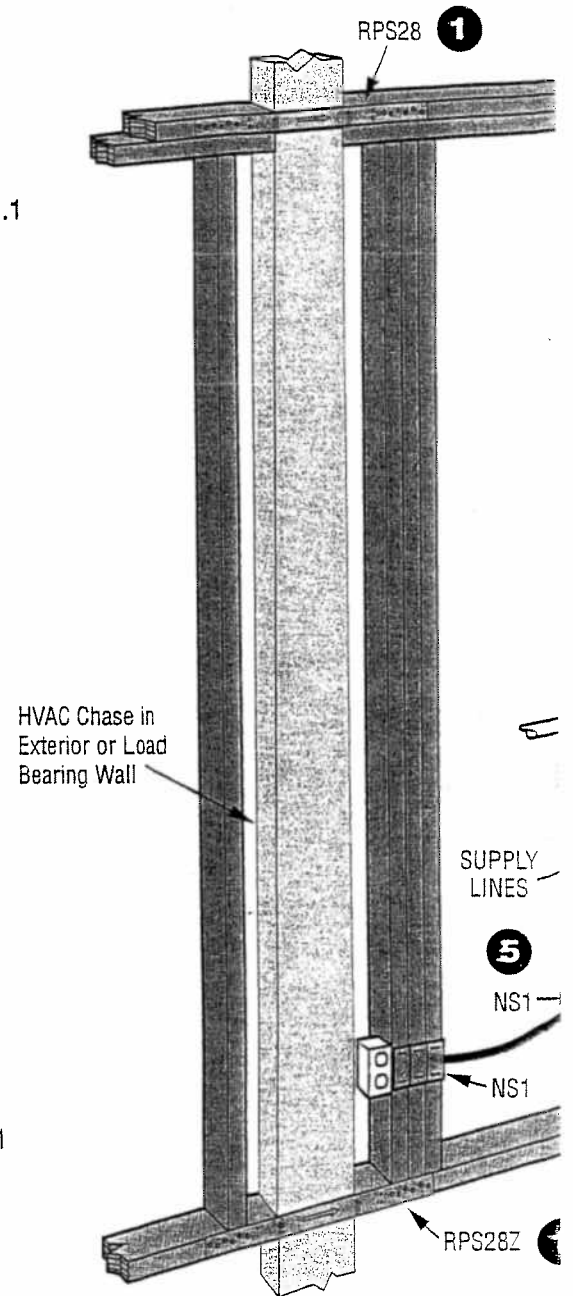
Heavy stud shoes provide tension load capacity as well as increased compression loads. Installs over pipe up to 2 3/8 inch outside diameter. See back for load information. Available in sizes for 2x, 2-2x, 3-2x, and 4x studs. 16 gauge to meet code.

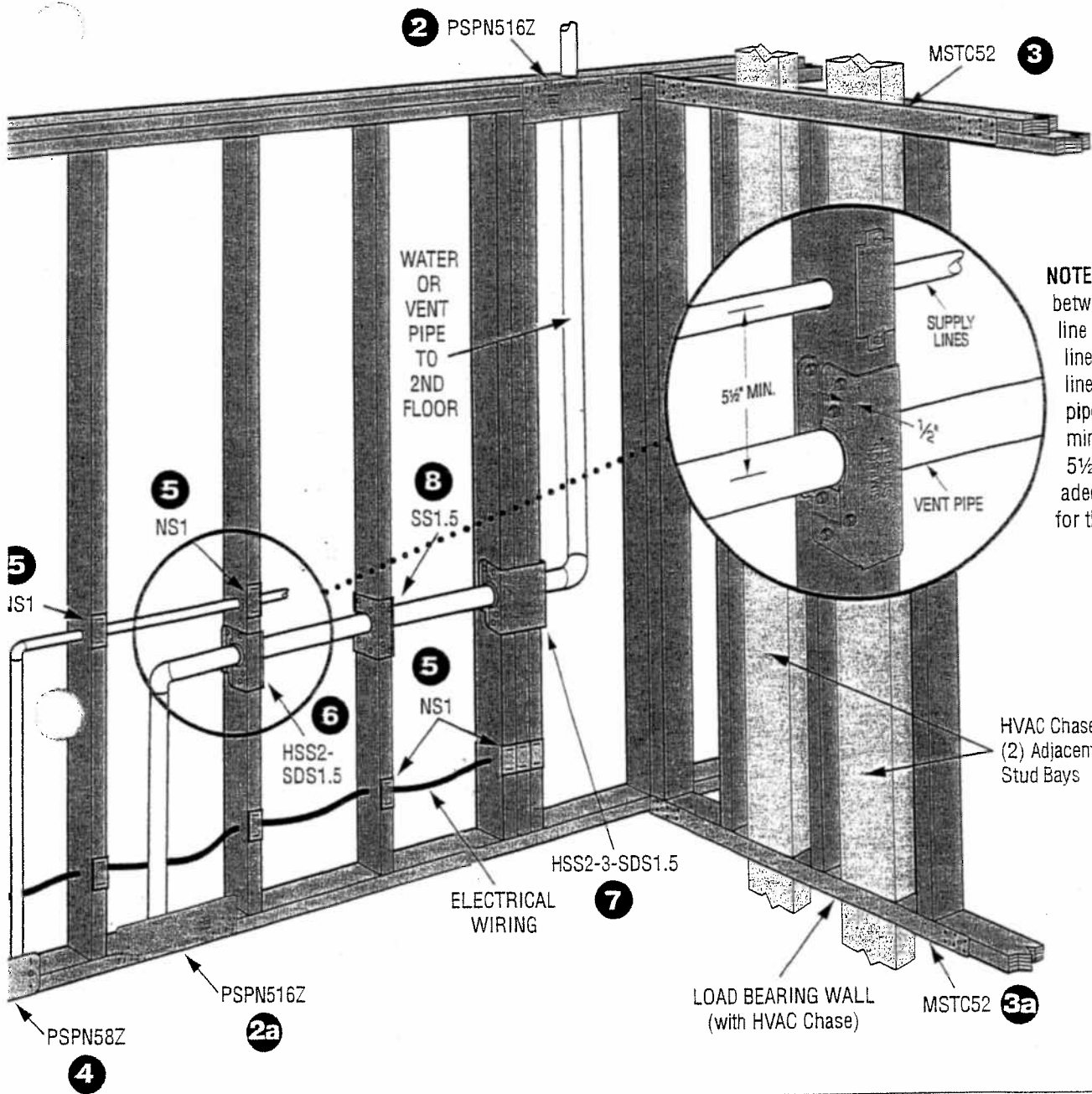


Protective shield plate for repairing notched top plates and sill plates. One product does two applications. In ZMAX™ for corrosion resistance and 16 gauge to meet code.

## Plumbing/HVAC – Repair and Protective Parts

- 1** RPS28 (16 gauge) to reinforce top plate, and RPS28Z (16 gauge ZMAX™) to reinforce sill plate.  
**International Residential Code®- 2000/2003 R602.6.1**  
**International Building Code®- 2000/2003 2308.9.8**  
**I.C.B.O.-Uniform Building Code - 1997 2320.11.7**
- 2** PSPN516Z (16 gauge ZMAX™) at top plates  
**International Residential Code®- 2000/2003 P2603.2.1 and R602.6.1**  
**International Building Code®- 2000/2003 2308.9.8**  
**International Plumbing Code - 2000/2003 305.8**
- 2a** PSPN516Z (16 gauge ZMAX™) at bottom plate.  
**International Building Code®- 2000/2003 2308.9.8**  
**International Plumbing Code - 2000/2003 305.8**
- 3** MSTC52 (16 gauge) at top plate.  
**International Residential Code®- 2000/2003 R602.6.1**  
**International Building Code®- 2000/2003 2308.9.8**
- 3a** MSTC52 (16 gauge) at sill plate.  
**International Building Code®- 2000/2003 2308.9.8**
- 4** PSPN58Z (16 gauge ZMAX™) at top plates and bottom plate.  
**International Plumbing Code - 2000/2003 305.8**  
**International Residential Code®- 2000/2003 P2603.2.1**
- 5** NS1 - nail stops to protect supply lines from drywall nails or screws.  
**International Residential Code®- 2000/2003 Table E3702.1**  
**Chapter 3 of the National Electric Code - "...bored holes for wiring shall be 1.25" from the edge of a joist, stud or rafter or shall be protected with a 16 gauge (.0625 thick) steel plate."**
- 6** HSS2-SDS1.5 (16 gauge) Heavy stud shoes to reinforce and protect single 2x studs where pipe is located. Uses 12 SDS1/4 x1 1/2 screws (included).  
**International Residential Code®- 2000/2003 R602.6 and P2603.2.1**  
**International Building Code®- 2000/2003 2308.9.10 & 2308.9.11**  
**I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10**  
**International Plumbing Code - 2000/2003 305.8**
- 7** HSS2-3-SDS3 (16 gauge) Heavy stud shoe for triple 2x stud. Uses 12 SDS1/4 x2 screws (included).  
**International Residential Code®- 2000/2003 R602.6 and P2603.2.1**  
**International Building Code®- 2000/2003 2308.9.10 & 2308.9.11**  
**International Plumbing Code - 2000/2003 305.8**  
**I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10**
- 8** SS1.5 (16 gauge) stud shoes reinforce and protect plumbing in 2x.  
**International Residential Code®- 2000/2003 R602.6 and P2603.2.1**  
**International Building Code® - 2000/2003 2308.9.10 & 2308.9.11**  
**International Plumbing Code - 2000/2003 305.8**  
**I.C.B.O.-Uniform Building Code - 1997 2320.11.9 & 2320.11.10**





**NOTE:** Distance between center line of supply line and center line of vent pipe must be a minimum of 5 1/2" to provide adequate space for the HSS.

**CODE ANALYSIS:**

**IRC-2000/2003 R602.6.1**  
**IBC-2000/2003 2308.9.8**

- When 50% of the top plate is removed in an exterior wall or interior, load bearing wall for piping or ductwork (IRC).
- When the soles or plates in or partly in a partition are cut for plumbing, heating, or other pipes (IBC)
- Should be strengthened with a galvanized, metal tie that is 1.5" wide and is required on the uppermost plate, IRC only.
- Fastened with six-16d (IRC-2000, IBC-2000/2003) on each side of the opening. Fastened with eight-16d (IRC-2003) on each side of the opening.

**Simpson Solution:**

- An RPS, MSTC or PSPN516Z can be used to transfer load at the top &/or bottom plates.
- An RPS28 allows for a notch width up to and including 12", such as a notch for ductwork.
- An RPS18 or RPS22 allows a notch width up to and including 5.5" only.
- RPS18 straps are designed with six holes on each end and the RPS22 & RPS28 both have eight nail holes per side.
- Also, an MSTC52 can be used when the top plates on two consecutive bays have been removed. The nails should be equally distributed to both top plates.

**IRC-2000/2003 P2603.2.1**  
**IPC-2000/2003 305.8**

- When piping other than cast iron or galvanized steel (e.g. PVC or ABS) is closer than 1.5" to the nearest edge of a stud, joist rafter or similar member in a concealed location it must be protected by a 16 gauge (.062 thick) shield plate.
- The plate must be 2" above the sole plate and below the top plates.

**Simpson Solution:**

- PSPN58 & PSPN58Z can be used when pipes are closer than 1.5" to the nearest edge of the sole or top plates.
- In locations where both R602.6.1 and P2603.2.1 or 2308.9.8 and 305.8 are required, a more economical solution would be the PSPN516Z.

## CODE ANALYSIS:

Stud shoes are used to strengthen studs when more wood is removed than is allowed by code.

IRC-2000/2003 R602.6

IBC-2000/2003 2308.9.10, 2308.9.11

I.C.B.O. - Uniform Building Code-1997 2320.11.9, 2320.11.10

- Studs can be bored or drilled provided that the diameter of the resulting hole is not greater than 40% and the edge of the hole should be no closer than 5/8" to the edge.
- Studs can be cut or notched to a depth not exceeding 40% in a non-bearing partition.
- Exception #1: Studs can be bored to a diameter not exceeding 60%, provided that the studs are doubled and not more than two successive studs are bored.
- Exception #2: Approved stud shoes may be used when installed in accordance with manufacturer's recommendations.
- If the pipe is within 1.5" to the edge of the stud, the stud shoe must be 16 gauge (.062 thick) to meet the code requirement for protection against plumbing pipe penetration or a combination of a nail stop and stud shoe should be used. As per: IRC2000/2003 P2603.2.1 and IPC-2000/2003 305.8

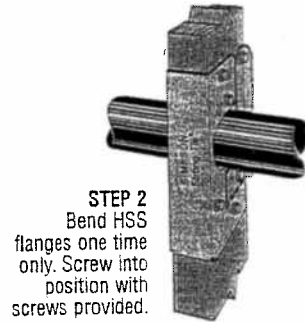
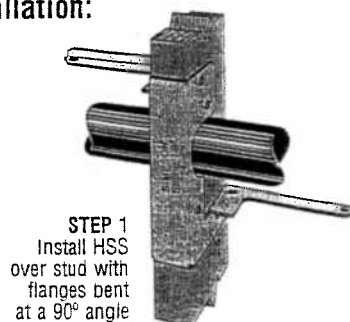
### Simpson Solution:

- Simpson Strong-Tie stud shoes are load rated and code evaluated.
- All Simpson stud shoes are 16 gauge.

Model No.	Stud Size	Fasteners	Allowable Loads <sup>1</sup>		
			DF/SP		Tension
			Compression	Compression	
Floor (100)	Roof (125)				
SS1.5	2x	12-10dx1 1/2	500	500	—
SS2.5	3x	12-10dx1 1/2	500	500	—
SS3	2-2x	12-10d	665	785	—
SS4.5	3-2x	14-10d	665	785	—
HSS2-SDS1.5	2x	12-SDS 1/2 x 1 1/2	1200	1200	1000
HSS2-2-SDS3	2-2x	12-SDS 1/2 x 3	1200	1200	1000
HSS2-3-SDS3	3-2x	12-SDS 1/2 x 3	1000	1000	970
HSS4-SDS3	4x	12-SDS 1/2 x 3	1200	1200	1000

1. Roof loads are 125% of floor loads unless limited by other criteria. Floor loads may be adjusted for other load durations according to the code, provided they do not exceed roof loads.

### Installation:



### A CRITICAL NOTE ABOUT FASTENERS AND CONNECTORS

Use **ONLY** Stainless Steel fasteners with Stainless Steel connectors. Use **ONLY** hot-dip galvanized fasteners with ZMAX™ and post hot-dip galvanized connectors. For the latest corrosion information, visit [www.strongtie.com/info](http://www.strongtie.com/info).

**SIMPSON**

**Strong-Tie**

This literature is effective until January 31, 2007, and reflects information available as of January 1, 2005. This information is updated periodically and should not be relied upon after January 31, 2007; contact Simpson for current information and limited warranty or see [www.strongtie.com](http://www.strongtie.com).

#### Home Office

4123 Dublin Boulevard, Suite 400  
Dublin, CA 94568  
FAX: 925/833-1496

#### Northwest USA

5951 Shiloh Road  
Stockton, CA 95206  
FAX: 209/234-3868

#### Southwest USA

2620 Fair Street  
Brea, CA 92821  
FAX: 714/671-9167

#### Southwest USA

2221 Country Lane  
McKinney, TX 75069  
FAX: 972/542-5579

#### Northeast USA

2600 International Street  
Columbus, OH 43228  
FAX: 614/876-0686

#### Eastern Canada

5 Kenview Boulevard  
Brampton, ON L6R 5G5  
FAX: 905/458-7274

#### Western Canada

1825 Kingston Street  
Maple Ridge, BC V2X 0Y5  
FAX: 604/485-0297

#### Warehouses:

Enfield, CT; Jacksonville, FL;  
Kent, WA; Langley, BC

800-999-5099

[www.strongtie.com](http://www.strongtie.com)

© Copyright 2005 Simpson Strong-Tie Company, Inc.  
Printed in the USA

PLUMBING05-005 exp. 1/07