



connector update

News for the construction community

Volume 2, Number 3

RECEIVED

NOV 15 1990

JAMES B. COOPER

Wood vs. the elements

Ensuring a longer life for your deck

Wood has one major drawback as a building material: it's organic. It's subject to attack by organisms that break it down and return it to the earth. As wood decays, so will a deck made from that wood.



This deck is relatively new, but its planks and joists have already begun to rot. Decay has been hastened by moisture-retaining dirt and leaves trapped between tightly-spaced planks.

Termites, wood-boring beetles, and fungi (also called dry or wet rot) are common wood-destroying organisms. Contact between the wood of the deck and nearby earth can lead to infestation and decay. Some kinds of fungi can even spread to dry wood.

Once decks rot, they can be expensive and time-consuming to repair. And an infested deck can introduce infections to your home. Take preventive measures against decay when you're remodeling or adding a deck to your house.

Decay-preventative design

Pressure-treated lumber and woods such as redwood and cedar that contain natural preservatives can help keep out water, fungi, and termites. But even with decay-resistant lumber, the chances of decay and termite infestation increase dramatically when the wood comes into direct contact with the earth. This is why building codes specify that posts must be either decay-resistant, or separated from the soil. Set posts and stairs on concrete, and separate them from standing water. (The enclosed brochure, No. DIY-DTS, shows Simpson post bases that will help you do this.)

In his experience as a remodeling contractor and consultant, Don Pearman has seen that decks most often rot where the joists or flooring connect to the studs underneath. Pockets are created, and debris such as leaves falls into them and becomes trapped. The leaves collect water from rain and other sources. Moist debris encourages fungus growth in the joists, and subsequently in the decking material. Don says you can double the life of a deck by flashing the header at the house and the joists underneath before laying the planking.

(see page 3)

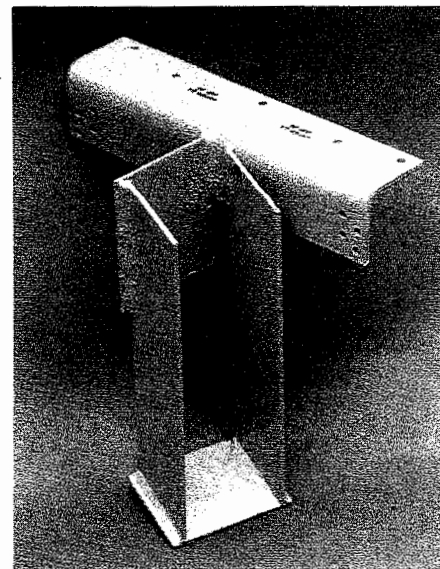
Fully-loaded

Getting the most from sloped and skewed W hangers

In the November 1989 issue of the *Connector Update*, we discussed the importance of backing your sloped W hangers. Since that time, we've improved our manufacturing process with computer-controlled manufacturing of sloped W hangers for non-backed installations.

Backing your hangers means having support behind the hanger's stirrup to restrain it from rotating. For steel I-beam headers, backing is commonly a welded plate or a piece of wood bolted to the I-beam. For wood I-beam headers, a plywood backing block nailed to the I-beam is common. (Simpson recommends that backing be at least half the height of the

(see page 2)



This HW hanger has an 84° skew to the right and a sloped down seat. All the stirrup nails are on the outside to make nailing easier.

Simpson Strong-Tie Company Inc. EX1045
Simpson Strong-Tie Co. v. Columbia Insurance Co.
U.S. Patent No. 11,649,626

(from front page)

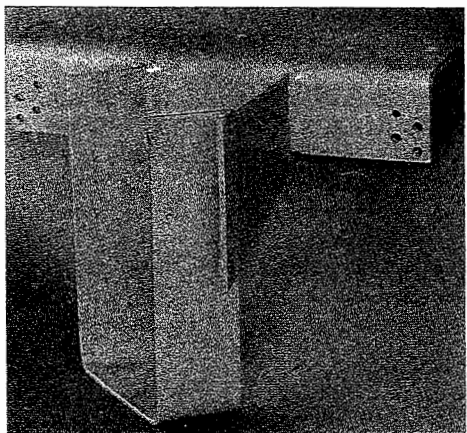
hanger, including the depth of any nailer.)

Full loads for non-backed hangers

When a sloped W hanger is not backed and a large enough load is applied, the hanger will attempt to swing back towards the I-beam (when the hanger is sloping downwards), or slide up the joist (when the hanger is sloping upwards). (*Sloped* in this article means a sloped seat, and *W hanger* means the entire W, HW, and WNP series.)

Simpson's series of tests of sloped and skewed W hangers shows that adding enough joist nails will prevent this unwanted movement in non-backed sloped hangers. We've developed formulas based on the results of these tests and on engineering calculations. They compute the number of joist nails a sloped and/or skewed W hanger needs to attain the full load of the corresponding non-sloped model, depending on the slope and skew (see the table for examples). When you order your hanger, our computer automatically calculates the number of joist nails required, and adds the nail holes to the hanger's side straps. When the hanger is installed, all the nail holes must be filled with the type of fastener specified for the corresponding non-sloped hanger.

If the hanger is skewed, the top flange may be longer than the unskewed model's top flange, in order to accommodate the skewed stirrup and the required weld. When these hangers are skewed over 15°, all joist nail holes will be on the outside angle (nails would be difficult to drive on the inside angle). In a few cases, the stirrup is made in three pieces and welded instead of the single-piece continuous stirrup.



This HW has a 50° skew to the left. The plate, added on hangers with extreme skews, is part of the design and has been tested to take the catalog load.

Ordering sloped and/or skewed W hangers

Information about your hanger order is often passed from subcontractor to general contractor to lumberyard to distributor before it reaches us. We want to make sure you'll get the part you need. So, unless we are told otherwise, we'll assume your order for a sloped and/or skewed W, HW, or WNP hanger is for a non-backed condition. This is because we want to be certain you get the load capacity you require, and the non-backed condition is the most conservative hanger design.

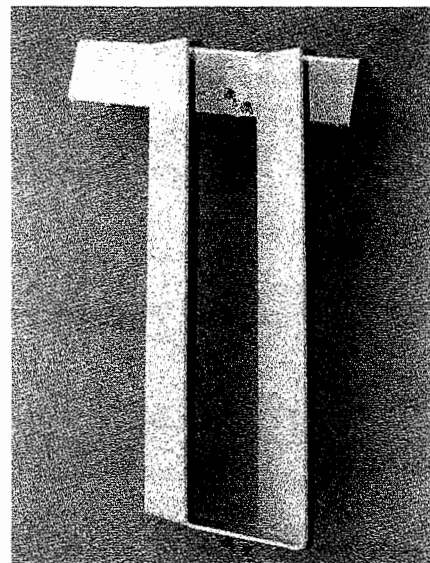
If you intend to back your sloped hangers, tell us, and we'll manufacture them with the same number of nail holes as the corresponding standard hanger. A backed, sloped hanger requires only the standard number of nails to get the full load.

We can manufacture W hangers with slopes of up to 45°, and skews of up to 84°. We've tested hangers to these limits because they are common; for example, octagonal buildings require hangers of 84° skews. For hangers beyond these limits, the building designer must send a drawing of the connector. If we can, we'll manufacture the part to such specifications. See our current catalog for more information about sloped and skewed hangers. ≠

The illustrations show typical sloped and skewed hangers. Hangers in the field may look different because of the varied installation requirements for each job.

Comparison of Joist Nail Requirements for Three Standard vs. Non-Backed Sloped and Skewed W Hangers

Model	Slope	Skew	Joist nails required for full load
W410	—	—	2-10d
W410X-D30°L68°	30° down	68° left	8-10d
HW814	—	—	2-10d
HW814X-D45°R45°	45° down	45° right	20-10d
WNP414	—	—	2-10d
WNP410X-D45°	45° down	—	12-10d



This sloped and skewed W hanger also has a sloped top flange. This stirrup is formed of a single piece of steel.