

Correct Fasteners are the Key to Connector Performance
By Jerry Tuggle

In my many years as a territory manager for Simpson Strong-Tie the connector issue that I've seen cause builders the most grief is using the wrong fastener in connectors. Using the incorrect fastener in structural connectors can be a very costly mistake as well as a liability concern if a failure occurs. The key factors in connector performance for face-mount joist hangers, the most commonly used connectors, are the length and the diameter of the nail. If the nails shear strength, determined by the diameter, is less than required, there can be a failure before desired loads are achieved. The length of the nail is equally important in that it allows the nail to achieve the shear load with increased penetration.

Pneumatic nail guns are becoming increasingly popular for connector installations. These pneumatic metal connector nail tools are the only pneumatic tools that should be used for connector installation. These tools have hole locating mechanisms that put the nail in the correct location, while minimizing dangerous nail deflections. However, there are some concerns with these tools. The manufacturers of these tools promote .131 .148 diameter and 1.5 and 2.5 inch length nails. The smallest diameter nail that can be used in joist hangers is a .148 diameter nail. Unfortunately, the most popular size I see used in the field is the .131 diameter by 1.5 inch length nail. There is no connector manufacturer that will support using this size with their product. Simpson Strong-Tie has technical bulletins for each pneumatic tool manufacturer that indicates the adjustment factors for gun-driven nails in connectors.

For many years Simpson Strong-Tie has had requests for a screw option in joist hangers. Up until recently, we could not support the use of screws in connectors because it was virtually impossible to know the performance of all the different screws on the market. Nails are a much more reliable fastener to specify as a 10d common nail in San Francisco, is the same as a 10d common in Michigan. Last year Simpson Strong-Tie released a line of structural connector screws related to our SDS structural screws called the Strong-Drive® SD screw. There are four sizes available, the SD9 and SD10 diameters with 1.5 and 2.5 inch lengths. These are the only screws that have been tested and approved for use with many popular Simpson Strong-Tie Connectors. Consult, www.strong-tie.com or our product literature for a list of approved connectors and the appropriate screw sizes. Simpson Strong-Tie makes every effort to assist the end-user with the information needed to install connectors correctly. We make all installation instructions readily available and free and easy to access by ordering the Simpson Strong-Tie Connector Catalog (C-2011), talking with customer service at 1-800-999-5099 or visiting our website at www.strongtie.com. As always I am available for questions and can be reached at 313-492-4881 or jtuggle@strongtie.com.

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