

**Sloped I-Joists**

Use sloped seat hangers and beveled web stiffeners whenever the slope exceeds the following: 1/2:12 for seat bearing lengths of 2-1/2" or less; 3/8:12 for bearing lengths between 2-1/2" and 3-1/2"; and 1/4:12 for bearing lengths in excess of 3-1/2".

**Multiple I-Joist Plies**

Fasten together multiple plies of wood I-Joists, in accordance with the manufacturer's installation guidelines, such that the joists act as a single unit.

**I-Joist Rotation**

It may be necessary to install straps, blocking, or sheathing to restrain torsional rotation of a supporting wood I-Joist when using top mount I-Joist hangers.

**Fasteners**

Install only the specified nails. The flanges of wood I-Joists may split if larger diameter nails or longer nails are installed. Do not install nails larger than 16d common wire nails (0.162" diameter) into the web stiffeners in the wood I-Joist.

**Backer Blocks**

Pattern the nails used to install backer blocks or web stiffeners in wood I-Joists to avoid splitting the block. The nail pattern should be sufficiently spaced to avoid the same grain line, particularly with solid sawn backer blocks. Backer blocks must be installed on wood I-Joist acting as the header, or supporting member. Install in accordance with the I-Joist manufacturer's installation guidelines. The nails used to install hangers mounted to an I-Joist header must penetrate through the web and into the backer block on the opposite side.

**Top Flange Hangers**

The thickness of the hanger metal and nail heads on top mount hangers must be evaluated for the effect on subsequent sheathing. Ensure that the top mount hanger is installed so the flanges of the hanger are not over-spread which tends to elevate the supported I-Joist causing uneven

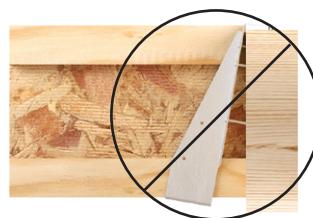
floor surfaces and squeaking. Similarly, ensure that the hanger is installed plumb such that the face flanges of the hanger are mounted firmly against the wide-face surface of the header.



**Flush framing**



**Hanger over-spread**



**Hanger not plumb**

**Correct Slant Nail Installation**

Always secure wood I-Joist using 10d x 1-1/2" nail driven at a 30° to 45° angle and firmly seated

**Common Nailing Errors****Wrong Angle**

When a nail is driven into the bottom flange of the wood I-Joist parallel to the glue lines, separation of veneers can occur which substantially reduces the design loads of the connection.

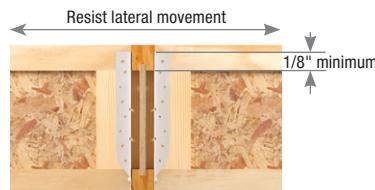
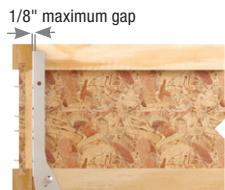
**Nail Too Long**

When using nails longer than MiTek's recommended nails, bottom flange splitting may occur. Also, this can raise the wood I-Joist off the seat, resulting in uneven surfaces and squeaky floors along with reduced allowable loads.

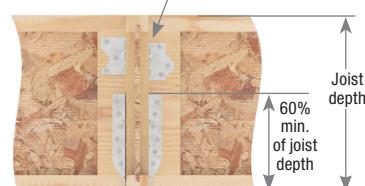
Hangers for joists **without web stiffeners** must support the I-Joist's top flange and provide lateral resistance with no less than 1/8" contact.

MiTek recommends that hangers for joist **with web stiffeners** should

be 60% of the joist height for stability during construction. If this cannot be accomplished, potential joist rotation must be resolved by other means.



For hangers less than 60% joist depth, install framing angles, one on each side, for lateral stability. Refer to pages 108-111 for angle selections.



(Top flange support requirements can be verified in this section charts under Web stiffener Reqd. column.)

## Nailer Installations

### Correct Hanger Attachment to Nailer

A nailer or sill plate is considered to be any wood member attached to a steel beam, concrete block wall, concrete stem wall, or other structure unsuitable for nailing, which is used as a nailing surface for top mount hangers to hold beams or joists.

### Nailer Sized Correctly

Top flange of hanger is fully supported and recommended nails have full penetration into nailer, resulting in a carried member hanging safely at the proper height.

The nailer must be sized to fit the support width as shown and be of sufficient thickness to satisfy recommended top flange nailing requirements. A design professional must specify nailer attachment to steel beams.



Avoid direct contact between hangers and steel beams which may cause squeaks

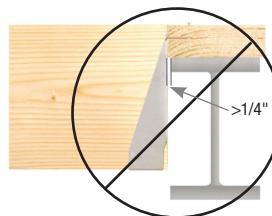
### Correct Attachment

## Wrong Nailer Size Causes Component Failure



### Too Narrow

Top flange not fully supported can cause nail breakout. Or, by fully supporting top flange, hanger is tilted back, causing lifting of carried member which results in uneven surfaces and squeaky floors.



### Too Wide

Loading can cause cross grain breaking of nailer. The recommended nailer overhang is 1/4" maximum per side.



### Too Thin

Top flange nailing cannot fully penetrate nailer, causing reduced allowable loads. Never use hangers which require multiple face nails since the allowable loads are dependent on all nail holes being used.