The purpose of this technical bulletin is to provide guidelines for the use of Simpson hangers supported on steel beams. For conditions other than those illustrated please refer to the technical department. All safe working loads are listed in the catalogue.

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**Hanger Fixed Directly onto Steel Beam**

**Built in With Masonry**

Timber (minimum grade C16) is required in the web of the beam except when the hanger depth is more than dimension X.

Minimum 3 course of solid blockwork (675mm of masonry) required above the JHM, WHM and HJHM range with fully cured mortar before any loads can be applied.

Alternatively, joists can be propped to support the loads whilst the masonry cures.

The SFH / SFWH hangers will achieve the published Safe Working Loads **without any cured masonry above**.

Timber (minimum grade C16) is required in the web of the beam except when the hanger depth is more than dimension X.

- For further information on fixing the SFH hangers to the steel beam, see page 3 of this bulletin.

**Mechanically Fixed**

Timber (minimum grade C16) is required in the web of the beam except when the hanger depth is more than dimension X.

It is recommended that $T_{max}$ is no greater than 50% of the joist height.

Screwed

- Minimum 4 self drill / tap screws required. Minimum recommended diameter 5.5mm.

Shot fired

- We recommend that 4 Hilti 12mm X-EDNI steel pins are fired into a steel plate, 4mm thick minimum. (Use 3 pins for WPU.)
- Maximum Safe Working load of 5.1kN for all hangers shot fired to the Steel.
- Pins must be shot in the round holes provided in the hanger.

Welded

- Only on hangers with a top flange thickness of at least 2mm.
- Welding galvanised steel may produce harmful fumes. Follow proper welding procedures and safety precautions.

- Top plate must be flush with the top of the steel.
Hanger Fixed Directly onto Steel Beam

Safety Fast Hanger on 100mm width steel beams

- The SFH/SFWH will achieve the published safe working loads without any cured masonry above.

- Timber (minimum grade C16) is required in the web of the beam except when the hanger depth is more than dimension X.

- Lateral restraint can be provided by using the SF ministrap. For 100mm wide supporting steel, no additional fixings are required.

Safety Fast Hanger on other steel beam widths

- When the supporting steels are wider than 100mm, it is necessary to use a Safety Fast hanger without a return.

- To ensure the temporary stability of the hanger, particularly when there is no return on the top flange it is advised that it is screwed or shot fired.

- Top plate must be flush with the top of the steel.

- Lateral restraint can be provided by using the SF ministrap; the Safety Fast hanger must be mechanically fixed to the steel.
Top Flange Hanger onto a Timber Nailer

- A minimum wrap over of 55mm is required for the JHA hanger.

When the hanger depth is less than dimension Y, timber is only required in the web of the beam to achieve minimum nailing and for sloped applications.

- Minimum thickness for the timber on top of the beam is 38mm for the 30mm Square Twist nails, or 75mm if 75mm nails are specified.
- General rule, maximum allowable overhang of the timber nailer is 6mm.
- Timber to be adequately connected to the steel beam to transfer the applied loads, design by others.
- Dimension Tmax can be greater than the joist height when using the JHA 450 hanger. Suitable lateral restraint to be provided to the floor system.
- Minimum grade of additional timbers to be C16

Face Fix Hanger onto Timber in Web

- Extra timber (minimum grade C16) may be required on top of the beam so maximum nailing requirements can be achieved.
- Timber to be adequately connected to the steel beam to transfer the applied loads, design by others.
- Face fix SAE / HU hanger are not designed for below support applications.