

Strutting to floor joists (including attic trusses)

(February 2024) (Third issue – supersedes March 2023)

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Question

- a. Is herringbone strutting acceptable where joists bear into the web of steel joists or are supported in hangers?
- b. Where joists are in hangers is it acceptable to use 38mm x 38mm noggings at the top of the joists (for support of the floor decking) and at the bottom of the joists (for fixing plasterboard ceiling) as the strutting between joists?
- c. Is strutting required where trimmed floor joists are supported in joists hangers which do not extend the full depth of the joists?
- d. Should strutting be provided on all timber floors?

Considerations

- Strutting is needed to prevent rotation of the joists, and should be provided in accordance with the design.
- NHBC Standards clause 6.4.12 refers to solid strutting between solid joists ends bearing into the web of steel joists or supported in hangers.
- NHBC Standards clause 6.4.13 says where solid timber joists are supported in joist hangers the hanger should be the full depth of the joist.
- NHBC Standards clause 6.4.16 gives guidance on support to trimmed, trimmer and trimming joists.
- There are different methods of fixing lightly loaded trimmed solid joists to a trimmer.
- NHBC Standards clause 6.4.9 limits deflection of the floor joists to 14mm where strutting is provided and 12mm where strutting can be omitted.

Answer

- a. Herringbone strutting is acceptable where joists bear into the web of steel joists or are supported in joist hangers. At perimeters of floors and ceilings noggings, as required, should be provided to support the floor decking and ceiling boards.
- b. Noggings at the top and bottom of joists would not prevent rotation of the joists and provide load sharing. They are not an acceptable alternative to solid or herringbone strutting.
- c. Solid floor joists carrying only light loads e.g. short trimmed joists, can be supported with timber-to-timber joist hangers. In this arrangement strutting or joist hangers, which extend the full depth of the trimmed joists, are not required provided the trimmed joists are skew nailed to the trimmer to resist rotation.
- d. Strutting or blocking of timber joists should be provided in accordance with the design. Where floor joists are designed to have instantaneous deflection of over 12mm, strutting or blocking of the joists in accordance with clause 6.4.15 should be provided. Where the instantaneous deflection of the floor joists is 12mm or less, strutting or blocking are generally not required and can be omitted unless stated otherwise by the designer.

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Note: For timber engineered joists

- Strutting is necessary where joists bear onto the web of steel joists.
- Strutting is not necessary where joists are supported in joist hangers of a type, which retain both the top and bottom flanges.



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