

FLOOR NAILING

BUILDING CODE REFERENCES

DIVISION B

- 9.23.3.3. Prevention of Splitting
- 9.23.3.4. Nailing of Framing
- 9.23.8.3. Built-up Wood Beams

Floor nailing requirements can be found in Article 9.23.3.4. of the Code. These nailing provisions encompass all nailing requirements for houses. The requirements as they apply to the floor system alone follow.

NAILING OF FLOOR FRAMING

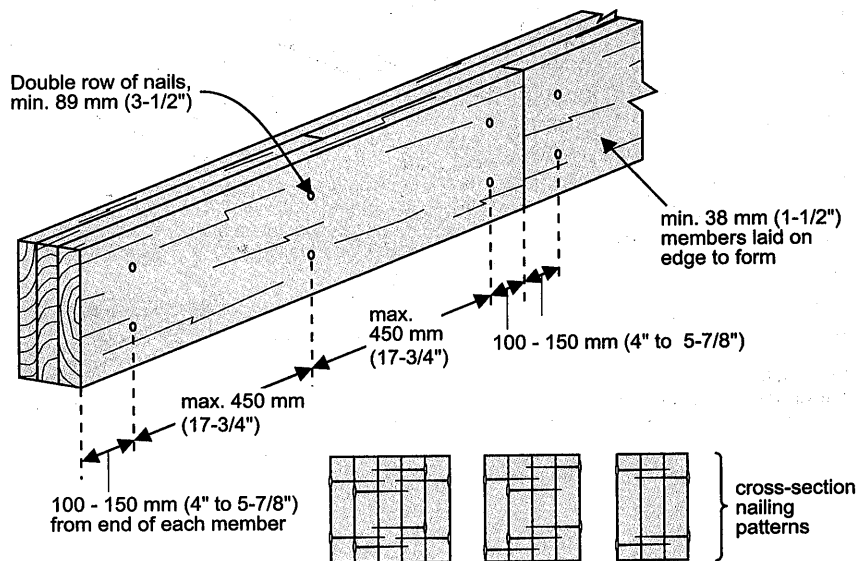
Figure 3.11 identifies the minimum nail length and number to be used in the framing of floors. Nails must be staggered in the direction of the grain and kept well in from the edges of the member to minimize splitting of the wood.

Nailing for Framing		
Construction Detail	Minimum Length Nails mm (inches)	Minimum Number or Maximum Spacing of Nails
• Floor joist to plate - toe nail	82 (3-1/4")	2
• Wood or metal strapping to underside of floor joists	57 (2-1/4")	2
• Cross bridging to joists	57 (2-1/4")	2 each end
• Double header or trimmer joists	76 (3")	300 mm (11-3/4") o.c.
• Floor joist to stud (balloon construction)	76 (3")	2
• Ledger strip to wood beam	82 (3-1/4")	2 per joist
• Joist to joist splice	76 (3")	2 at each end
• Tail joist to adjacent header joist (end nailed) around openings	82 (3-1/4") 101 (4")	5 3
• Each header joist to adjacent trimmer joist (end nailed) around openings	82 (3-1/4") 101 (4")	5 3

Figure 3.11
Nailing for Framing (9.23.3.4.)

NAILING OF BEAMS

The requirements for the nailing of built-up wood beams are intended to ensure that the built-up wood members act as a single piece of lumber. Three, four, or five individual pieces of lumber that comprise a beam and that have not been suitably tied together will not have the same strength as the equivalent single piece of lumber. Figure 3.12 and 3.13 show the Code requirements for nailing of built-up beams.



Note:
As an alternative to nailing, bolt members together with minimum 12.7 mm (1/2") diameter bolts with washers and spaced 1.2 m (3' 11") max. o.c. with end bolts not more than 600 mm (23-5/8") from the ends of the members.

Figure 3.12
Nailing of Built-up Beams

(9.23.8.3.)

JOIST AND BEAM SUPPORT

BUILDING CODE REFERENCES

DIVISION B

- 9.20.8.3. Bearing of Beams and Joists
- 9.23.8.1. Bearing for Beams
- 9.23.9.1. End Bearing for Joists
- 9.23.9.2. Joists Supported by Beams
- 9.23.9.3. Restraint of Joist Bottoms
- 9.23.9.4. Strapping and Bridging in Tables A-1 and A

Wood, glue-laminated or steel beams used in houses must bear no less than 89 mm (3-1/2") at end supports to avoid the crushing of beam or support material and to adequately transfer the load from the beam to the support. Beams should be level and bear evenly. Refer to Figure 3.14. Further requirements for built-up wood beams are detailed in the notes associated with the span tables in the Code. For example when supporting not more than one floor, 3-ply wood beams supporting lengths greater than 4.2 m (14') require a minimum bearing length of 114 mm (4-1/2") while 4-ply and 5-ply wood beams will only require a minimum bearing length of 76 mm (3").

End bearing for joists can be no less than 38 mm (1-1/2").

Any beam or joist bearing that does not comply with Part 9 must comply with Part 4.

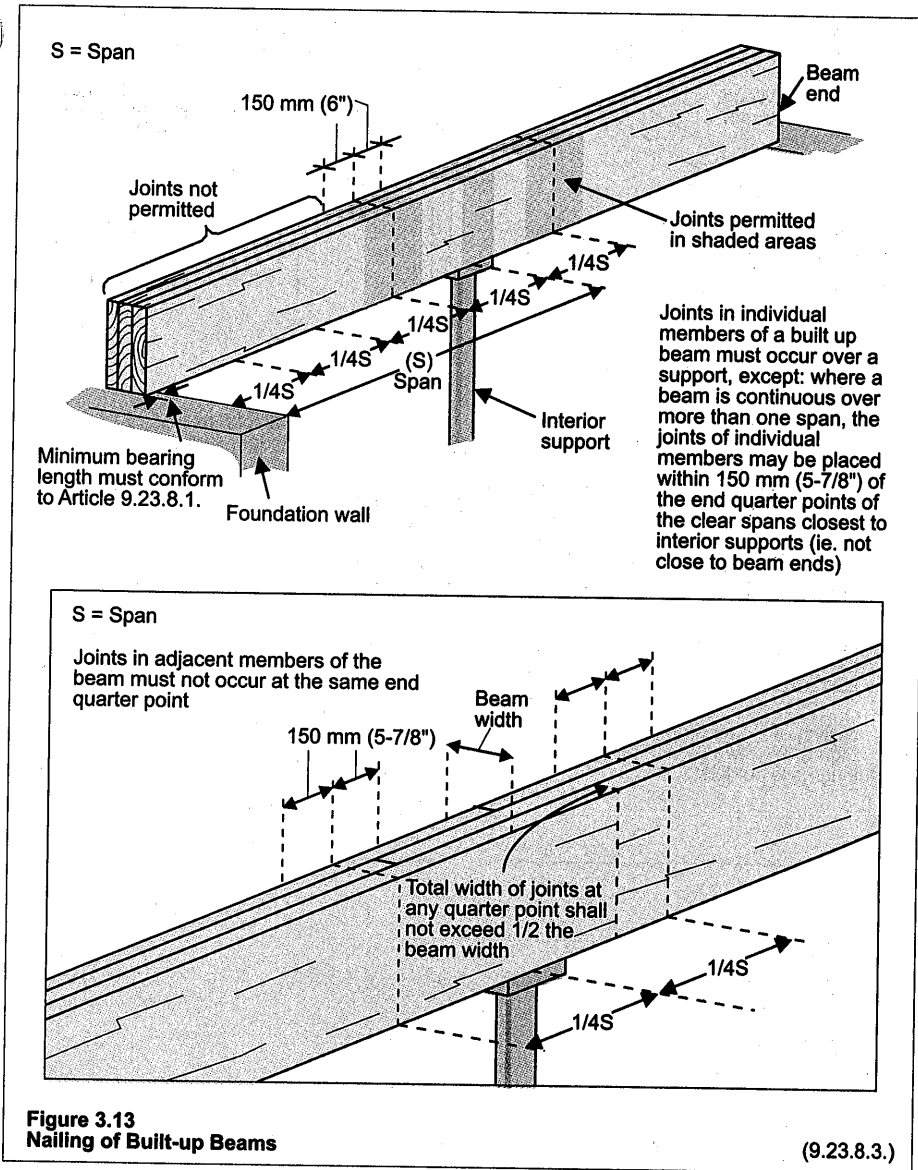


Figure 3.13
Nailing of Built-up Beams

(9.23.8.3.)

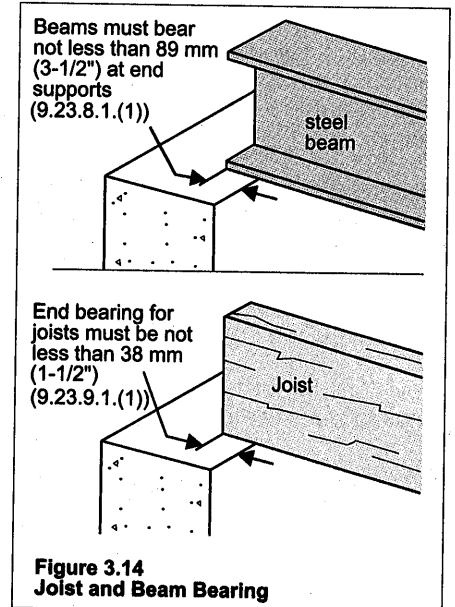


Figure 3.14
Joist and Beam Bearing