

Exterior

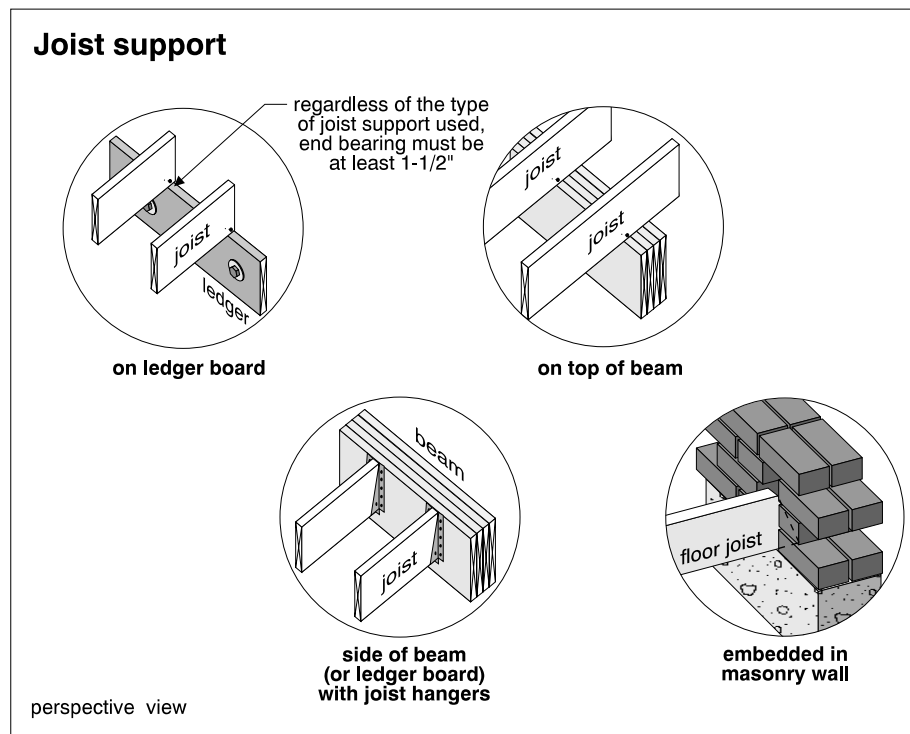
MODULE

STUDY SESSION 3

- 1.** You should have finished Study Session 2 and Quick Quiz 2 before starting this Study Session.
- 2.** This Study Session deals with beams, joists, floors, roof structures, and skirting on porches, decks and balconies.
- 3.** Upon completion of this Study Session, you will be able to –
 - list four common beam problems
 - state the amount of end bearing required for beams and joists
 - list seven common joist problems
 - list three causes of problems with cantilevered joists
 - list seven common flooring problems
 - list two common roof structure problems
 - list four common skirting problems
- 4.** This Study Session should take about one and a half hours to complete.
- 5.** Quick Quiz 3 is included at the end of this Session. Answers may be written in the spaces provided.



Joist Support Joists may be supported on top of beams, ledgerboards or other framing members. Joists may also be supported by metal brackets called **joist hangers**. A properly installed joist hanger may be a more secure connection than a joist resting on a beam. Joists resting on beams are typically toe-nailed to the beam. While gravity provides a good downward anchoring force, there is less protection against uplift than with a joist hanger. Also, the end of the joist is better restrained from twisting or other lateral movement with a joist hanger.



Rust And Sizing Of Joist Hangers These joist hangers and their fasteners may or may not be corrosion resistant. Joist hangers should be checked for rust. Joist hangers also come in different sizes. A joist hanger intended for a 2 x 4 will not be effective on a 2 x 10.

Nailing Of Joist Hangers It is very common to find that the joist hangers were not nailed properly. With very few exceptions, all of the holes in joist hangers are intended to have nails. Skippy nailing can lead to failure of the joist hanger and movement of the joist.

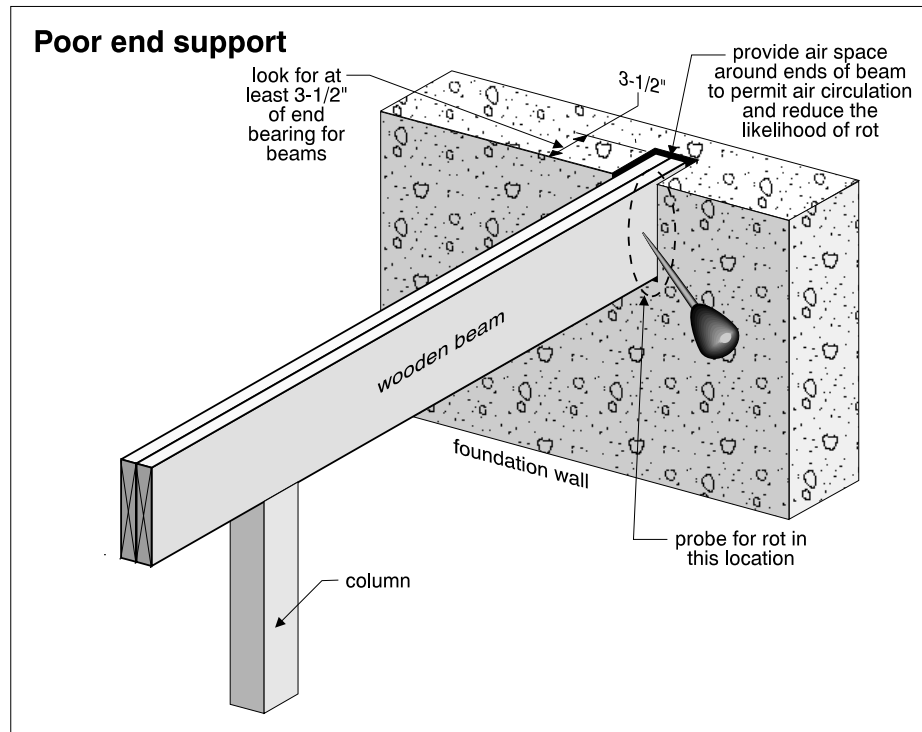
End Bearing The end bearing for joists should be at least 1½ inches, even on joist hangers.

Racking Many decks are built with poor lateral stability and will rack (move slightly side-to-side) easily. A deck does not have to move very much before connections are weakened.



3.4.1.2 Poor end support

Beams rely on at least 3½ inches of end bearing to transfer their loads to the structure below (usually columns or walls).



Causes End bearing may be poor because of –

- poor construction
- building shifting
- rot
- settling columns
- sagging beam

One cause of poor end support is shifting of columns that support beams. If a column shifts and rotates away from the building, a beam may lose its support at the column end. If the beam moves with the column, the end of the beam resting on the house wall may be pulled out of its pocket.

Beams resting in masonry pockets should not be mortared in tightly at the ends. There should be space allowed for ventilation so that the wood can dry after it gets wet.

Implication Beams without adequate end support may fall.

Strategy Where visible, look for at least 3½ inches of end bearing for beams. Probe ends of beams with a screwdriver to look for rot.



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QUICK QUIZ 4

INSTRUCTIONS

- You should finish Study Session 4 before doing this Quiz.
- Write your answers in the spaces provided.
- Check your answers against ours at the end of this Section after the Final Test.
- If you have trouble with the Quiz, reread the Study Session and try the Quiz again.
- If you did well, it's time for Study Session 5.

1. What is garage gas-proofing?

2. Why should there be no supply or return registers from heating/cooling ductwork in a garage?

3. Man doors in attached garages should be _____ and _____ and should have a _____ closer attached.

4. In what two ways is combustible plastic insulation a severe fire hazard?

