

Critical Deck Connections

A Deck is a Structure – Build It Like One

A system of key connections throughout the deck framing, also known as a continuous load path, is essential to building a safe deck. When this system of connections is made properly, loads are transferred throughout the deck's frame and into the ground and/or the adjacent structure to which the deck is connected.

The connections called out below are necessary in order to create an effective continuous load path.

Joist-to-Ledger

Where joists terminate into a beam or ledger, a joist hanger is needed to provide bearing without costly blocking.

Recommended Products: LUC and LUS Joist Hangers

Railing Post-to-Deck Framing

To provide adequate load resistance, posts should be connected to the deck framing, not just bolted through the rim joist.

Recommended Product: DTT2 Deck Tension Tie

Stair Stringer-to-Deck Framing

A connector makes the connection stronger than toe-nailing or fastening through the rim joist into the end of the stringer.

Recommended Product: LSC Adjustable Stair-Stringer Connector

Stair Tread-to-Stringer

Staircase angles provide a secure connection and eliminate the task of notching the stair stringer (which takes time and weakens the stringer).

Recommended Product: TA Staircase Angles

Lateral Load Connection

In some applications it is necessary to reinforce the connection to the adjacent house to resist lateral (side-to-side) movement. A connection back into the floor joists is the recommended method.

Recommended Product: DTT2 Deck Tension Tie

Ledger Attachment

Correct ledger attachment is crucial to avoid deck collapse. Nails and smaller screws do not provide adequate pull-out resistance.

Recommended Products: Strong-Drive® SDS/SDWS/SDWH Structural Wood Screws

Beam-to-Post

Post caps provide a secure connection between post and beam that is easier to install than through-bolts and stronger than toe-nailing.

Recommended Products: BC, BCS, AC, LPC, PC post caps

Joist-to-Beam

Joists bearing on beams should be firmly connected to resist side-to-side (lateral) and uplift loads.

Recommended Products: H1 and H2.5A Hurricane Ties

Post-to-Concrete

Post/column bases anchor the wood member securely to the footing and can help prevent decay at the post end by providing a 1" stand-off from the concrete.

Recommended Products: New Concrete (wet): PBS Post Bases, and CBSQ Column Bases
Existing Concrete (hardened): ABA, ABU, ABW, Adjustable, Retrofit Post Bases

Deck FAQs

Frequently Asked Questions – Building a Safe Deck

Should I try to build a deck myself?

If you feel confident in your ability to understand and build large-scale projects, you can probably build a deck. You should feel comfortable using power tools like a circular saw or drill and feel confident in your ability to measure accurately and understand how the deck will lay out on the site and fit together. If you are thinking about a fairly complex deck, be realistic about your ability.

Where can I find deck plans that show an example of how to build a deck?

Many deck-design books are available and can provide creative ideas as well as valuable “how-to” information. Many plans are available online free of charge, however, deck-building books may provide more instructional detail for the novice.

What should I look for if I hire a contractor?

It is always recommended that you work with a licensed and insured contractor, preferably one who can provide references to other deck projects. It is also important to check with your regional licensing board to see if they have any complaints filed against them. Follow up on provided references and search online reviews; this can give you a feel for the quality of the work, as well as how the contractor was to work with.

When hiring a contractor, make sure to ask how they plan to provide a continuous load path within the structure of your deck. Use the Simpson Strong-Tie *Deck Framing Connection Guide* as a checklist to make sure they address the important connections.

Do I need a building permit for a deck?

Many building departments require a permit before constructing a deck, as these structures support people. Contact your local building department for specific requirements in your area. If you hire a contractor, they may assume this responsibility, however, the homeowner is ultimately responsible for acquiring all necessary permits prior to construction.

Why should I use connectors?

Other than the wood itself, the most important part of any deck is how the wood members are connected to one another and the adjacent structure (if not free standing). Simpson Strong-Tie® connectors not only make decks stronger and safer, they make quality building easier because they remove the guess work about how to properly make important connections.



What connector finish/material should I use?

Consideration to environmental conditions should be given when selecting all components of your deck. Sprinkler overspray, salt air, and regional climate are a few of the many factors that can impact the performance of your deck. Simpson Strong-Tie offers connectors and fasteners with many levels of corrosion resistance to address a wide variety of environmental and in-service conditions. See www.strongtie.com/corrosion for more information.

I am concerned about mounting a ledger board to the side of my house. What is the best way?

Mounting a ledger correctly is the most important connection in an attached deck. This installation is difficult because it usually requires fastening into the frame of the house that cannot be seen. A typical requirement of ledger attachment is a positive connection to a rim joist or to a header above a door or window. Attaching to siding materials or veneer will not provide a proper ledger connection. For more information on mounting a deck ledger see our *Deck Framing Connection Guide*.

For additional important information visit www.strongtie.com/deckcenter and see our *Deck Framing Connection Guide*.