



# NEWS RELEASE

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## FOR IMMEDIATE RELEASE

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### PROPER DECK INSTALLATION A MUST FOR SAFETY

MADISON, Wis.— Ah, the backyard deck. Home of neighborhood barbecues, family gatherings and relaxing afternoons with a good book. As spring approaches, many people dream of adding an outdoor living space to their homes. And while much attention is paid to the aesthetics of such a project, a more important—and potentially life-saving—area of focus is the design and construction of the deck.

Why? Because as much as decks provide a locale for good summer fun, they can also be the site of potential disaster when not installed correctly.

“Unfortunately, many people have lost their lives and many more injured in deck collapses due to incorrect installation or inadequate maintenance,” says Dr. Robert Falk, research engineer at the USDA Forest Service Forest Products Laboratory (FPL).

Falk has been involved in the investigation of numerous deck collapses over the past decade and through his research has helped determine proper construction techniques.

For homeowners planning to build a deck, Falk offers the following recommendations for building a structure that will last:

- **Good connections are key**—Properly connecting joists to beams, beams to posts and decks to houses is a critical component to deck construction. Use hot-dipped galvanized or stainless steel hardware for long-term performance.
- **Carefully plan the connection to the house**—This is the area where many catastrophic deck failures occur. Properly Attaching the deck to the house requires that the deck is firmly fastened to the house framing. However, this opens the protective envelope of the siding, potentially allowing moisture penetration which can lead to decay and insect infestation. To deter water damage, caulk pilot holes in the house before installing fasteners, add spacers between the two structures to allow for drying, and extend metal flashing under the siding above the deck and over the siding below the deck. And proper

fasteners are a must. "Nails are not enough here," says Falk. "Lag screws or through-bolts must be used for a secure connection."

- **Use high-quality fasteners**—Choose deck fasteners with good holding capacity and resistance to corrosion. Inadequate or improperly installed fasteners can cause connections to loosen and can weaken the surrounding wood if they corrode. Although they are costly, stainless steel fasteners have the longest lifespan however, hot-dipped galvanized-steel fasteners are also a good choice. When using galvanized fasteners, be sure to choose those with the thickest protective coating (hot-dipped are usually the thickest) and avoid electroplated nails as they are not as durable.
- **Choose deformed-shank nails or screws for deck boards**— Deck screws are widely available and are a good choice for securing the deck board to the framing. If you choose to use nails, avoid smooth-shank nails as they will lose their withdrawal resistance after years of wetting and drying cycles, and can eventually pop up and loosen connections. Spiral-groove or ring-shank nails are a better choice.
- **Keep decay at bay**—You can increase the decay resistance of your deck if you treat any drilled holes with a wood preservative or water-repellant preservative. This will provide added protection from decay in areas where water can collect.

According to Falk, following the proper installation guidelines will give you the best chance of safely enjoying your deck for years to come. "Continued maintenance is still important to prolong the life of your deck, but if you begin with solid construction using the proper connections, you've gotten off to the best start possible."

Robert Falk is co-author of *Wood Decks: Materials, Construction, and Finishing*, published by the Forest Products Society. For more information on proper deck installation, visit our website at [www.fpl.fs.fed.us](http://www.fpl.fs.fed.us). The following articles provide more detailed information:

<http://www.fpl.fs.fed.us/documnts/pdf1997/falk97d.pdf>

<http://www.fpl.fs.fed.us/documnts/pdf1997/falk97c.pdf>

The USDA Forest Service Forest Products Laboratory was established in 1910 in Madison, Wis., with the mission to conserve and extend the country's wood resources. Today, FPL's research scientists work with academic and industrial researchers and other government agencies in exploring ways to promote healthy forests and clean water and improve papermaking and recycling processes. Through FPL's Advanced Housing Research Center, researchers also work to improve homebuilding technologies and materials. Information is available at FPL's Web site: [www.fpl.fs.fed.us](http://www.fpl.fs.fed.us).