



Patio vs. Deck

Decks are dangerous; plan for a patio

BY MATT MILLHAM

Both patios and decks serve the same general purpose: providing a surface on which to comfortably enjoy an outdoor space adjacent to a home. Both can be great places to hang out and grill. Both essentially extend the living space when the weather's right. Both require maintenance (sort of). Both can add value to a house.

But when you consider all the things we use these spaces for and the life of a home, one is inherently safer than the other (not just for people, but for the structure it sits next to): patios.

Most decks last 20 years on average, according to the National Association of Home Builders (other estimates are even lower). They're typically

attached to the house and can do major damage when they fail. The average patio, meanwhile, lasts the lifetime of the home, according to NAHB. Built to code, a patio should never hurt a house.

This is not to say that I'm anti-deck; there's one on my house, and I use it plenty. A well-built deck can be a beautiful, useful thing. What I don't like is avoidable risk, and to me that's more or less the definition of a deck.

The fact that prescriptive building codes gave exterior decks their own section starting in 2015 seems a tacit acknowledgment of this risk. Why it took so long for decks to get more attention is anybody's guess, but I suspect the code council didn't

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Throwdown

I have a deck. And I have a patio. Both are modest affairs. The former requires a coat of weather-proofing stain in the spring and another in the fall—a total of maybe five hours. Easy peasy. The latter demands regular edging, weeding, and re-leveling. On my deck, I lie on a comfortably even, sand- and insect-free surface. On my patio, I watch ants work while the blood rushes to my head.

A few years ago, we published a story titled “Why Decks Fall Down.” The author, David Grandpré, notes that prescriptive codes don’t typically cover decks with hot tubs, large grills, multiple levels, and lots of curves. Instead, they provide guidelines for building decks that are basically rectangular in shape and that meet certain size requirements. He

lists six common reasons decks collapse, noting that most failures occur when more than one problem exists. The average healthy lifespan of a deck is estimated to be between 10 and 15 years, though advances in hardware and engineering know-how continue to increase their longevity. A no-frills, code-compliant deck within the range of its predicted lifespan is unlikely to collapse. For proactive deck lovers like me, the North American Deck and Railing Association has a handy checklist of things to watch for and measures to take to head off the disasters Matt forecasts.

Wood decks are consistently rated as one of the top home updates that will pay off. According to *Continued on page 73*

Patios are persnickety; your best bet is a deck

BY KILEY JACQUES

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want to highlight the myriad ways decks are known to fail and hurt people and buildings. Incidentally, that's exactly what recent code updates have done. Fire, frost heave, termites, rot, detachment, overturning, and water infiltration are just some of the things the code addresses.

One thing the code can't fully account for is the human factor, and that's a biggie. I did a quick search for deck fires in the U.S. over the last year, and Google's predictive search strongly suggests that Americans don't deserve nice things. Lots of people had apparently searched for "deck fire pit," so, needless to say, there was no shortage of stories on deck fires. A lot of these fires spread to the house, and, where a cause was listed, they usually pointed

negligence, I don't have a lot of faith that people are properly maintaining their decks, and that's dangerous.

Data seems to back me up. The U.S. Consumer Product Safety Commission collects deck stats, and a study of their data from 2003 to 2007 found 224,740 injuries related to decks and porches, including 33,270 resulting from structural failure or collapse. These numbers don't include injuries from wet or icy surfaces, splinters, falling on a deck, or alcohol- or drug-related injuries that happened on a deck or porch; these are injuries that resulted because of the structure.

The human factor aside, a deck's propensity for failure largely comes down to two things: water and gravity. Most decks are built with wood, and there's really only one kind of wood that won't rot when left outside in the rain: living trees.

Though decks are typically built with lumber that's been pressure-treated, which can help them stand up to water, that only delays the inevitable. I say "can help" because there's a lot of uncertainty about the quality of pressure-treated products. Rules allow up to 15% of the "treated" lumber rolling out of treatment facilities to fall below its marked grade. For some perspective, regular smokers have lower odds of getting lung cancer than a board does of coming out of a facility undertreated.

Treated or not, wood rots. When it rots, it loses its ability to resist gravity, and gravity's favorite thing, besides dropping apples on physicists, is demolishing decks.

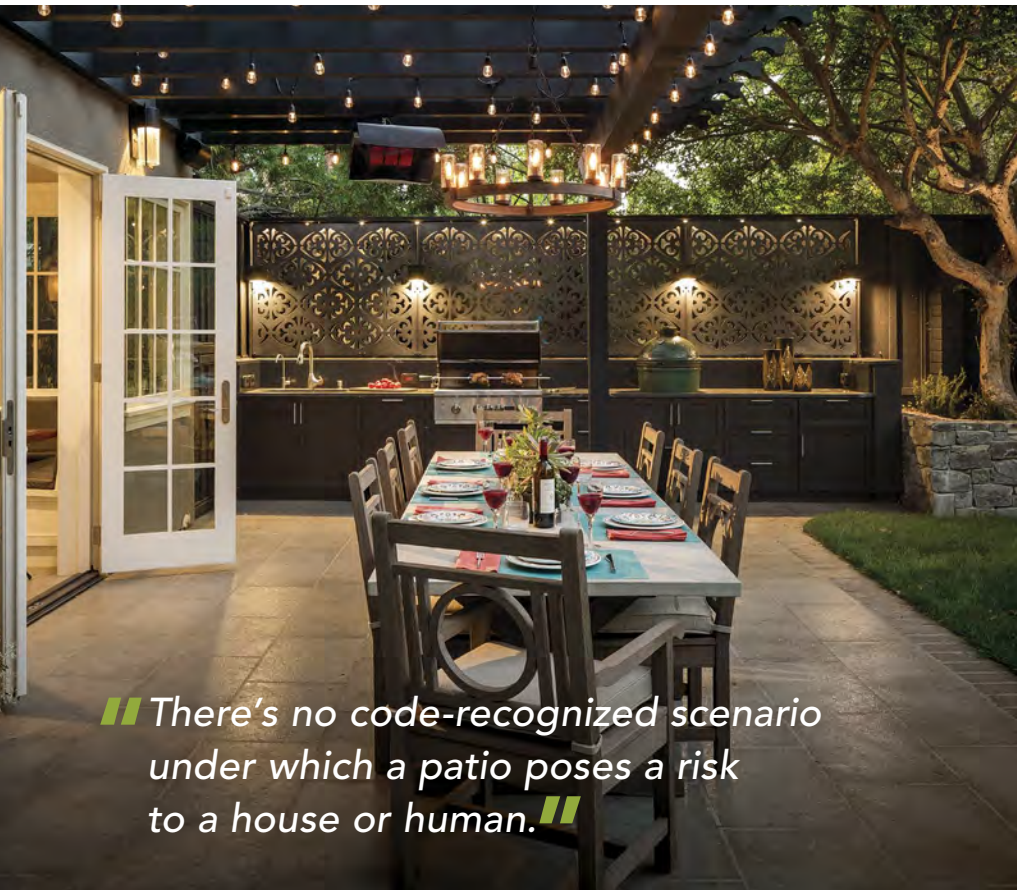
Patios, meanwhile, are already on the ground. The building code requires measures to prevent concrete patio slabs from damaging houses during floods, but under non-Biblical conditions, there's no code-recognized scenario under which a patio poses a risk to house or human. Patio covers, which aren't essential, get extra scrutiny in the code—as should any structure built to defy gravity and the elements.

With the exception of the aforementioned floods, patios are nearly immune to water on a human timescale. Depending on exposure to freeze-thaw cycles, even the least capable paving

materials should outlive your grandkids, whether they're maintained or not. Fire, termites, detachment, overturning—these are non-issues for patios. So put a fire pit or a pizza oven or a pig-roasting station in there and enjoy not burning down your house.

If built with the same attention to detail as a well-made deck, a patio shouldn't need much maintenance. Even if you skimp on the upkeep, it's not going to ruin your house or fall on your dog. The worst-case scenario for a neglected patio is that it gets overgrown and turns into a forest that some dummy logs to build a daggum deck. □

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“There's no code-recognized scenario under which a patio poses a risk to a house or human.”

to grills, fire pits (!), and other forms of negligence. The code addresses flame-spread index, but it can only account for so much stupid.

Even when people aren't actively damaging decks, there's such a thing as passive harm. There's probably nothing on the outside of a home that requires more regular maintenance than a deck, and it's usually not done until someone notices a problem. Even then, the average homeowner may just address cosmetic issues; they probably don't even know what they're looking at structurally. For safety, decks should be inspected by a professional once a year—just like cars (in many states) and human beings. Who does this? Judging by the aforementioned

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a 2018 Cost vs. Value Report, a midrange deck costing \$10,950 has a resale value of \$9,065—that's an 82.8% return on investment. And a meaty selection of building materials allows for good control over the budget. Pressure-treated lumber is laudable for its affordability, availability, and the fact that it's easy to work with. Red cedar offers a natural, chemical-free alternative. And then there's the world of composites and recycled plastics, which are extremely weather- and stain-resistant; plus they don't splinter, warp, rot, or split. That is to say, decks are a flexible investment.

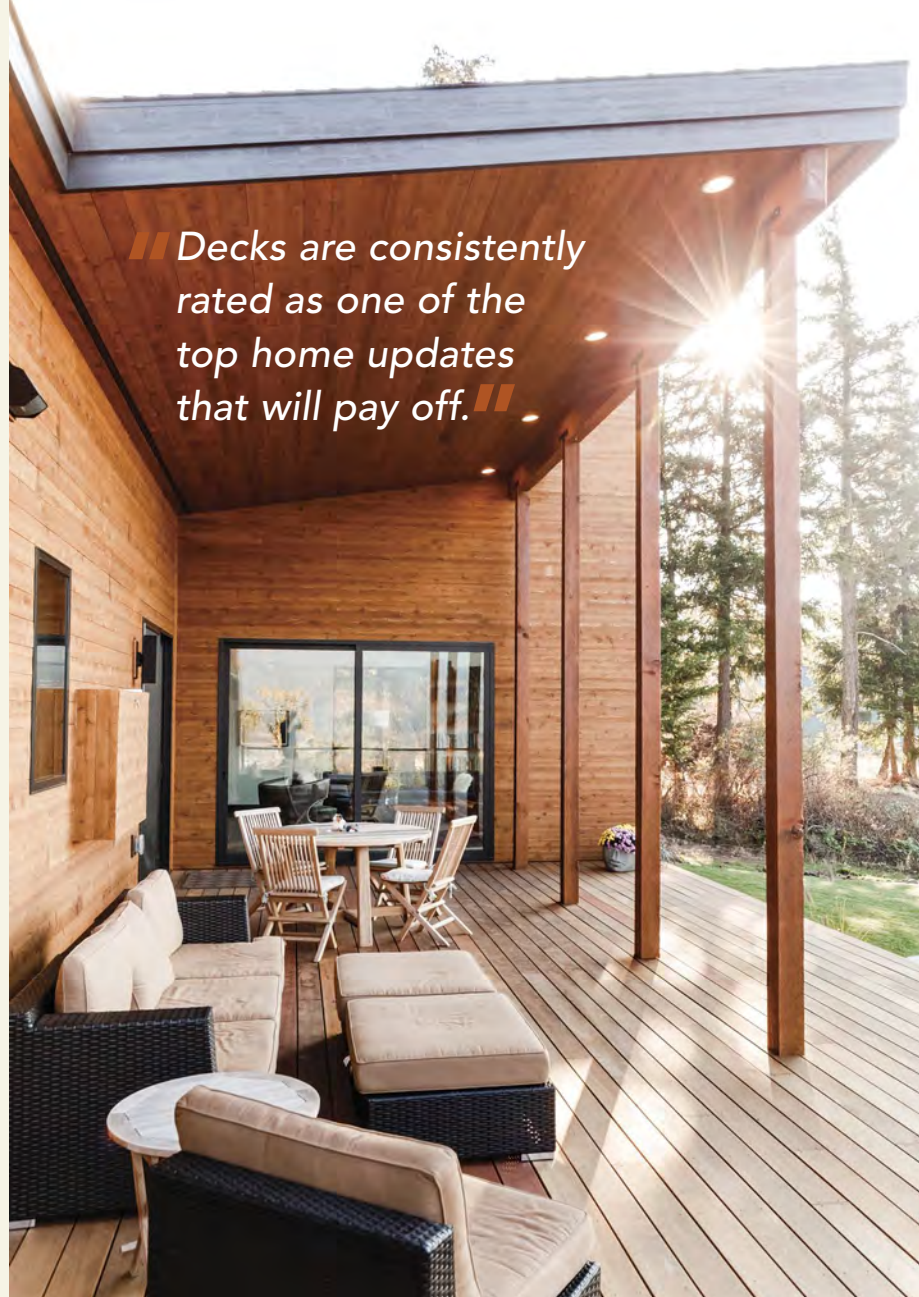
There's a secondary value in decks, too. Essentially, they add another room to your house, and as three-dimensional structures they can make adjacent interiors feel more expansive. Also, because decks can be built off upper floors, they have the potential to capitalize on views. Another benefit of being elevated: uneven terrain is not as much of an installation issue—tree roots and sloping topography are more manageable when coring for footings than when excavating and grading for an entire patio substrate.

Rot? I'd argue that by the time you're replacing boards, it's probable that you got your money's worth. The national average cost to repair a deck is \$1604; I'm cool with that.

I concede that the death-by-patio data is negligible. But accidents do happen. Consider the aforementioned fire pit (which is most commonly sited on patios)—according to the Consumer Products Safety Commission, at least 5300 injuries related to fire pits or outdoor heaters (another popular patio feature) were treated at emergency rooms in the U.S. in 2017. If only someone would collect data on the number of sprained ankles and broken noses that result from uneven, wet, or icy patio terrain.

Visit any online discussion about patios and you'll find some variation on this theme: "The contractor who installed our patio didn't pitch and level it correctly, so there are low spots where water collects near the foundation of the house. Do we need to rip it up and re-install it?" Probably. Soils are particularly tricky when it comes to getting a patio right—something you're not likely to know until after you've had a few good storms. Clay soils expand with water, which can cause pavers to shift, and sandy soils erode, leading to the same problem. Never mind how deep the base should go, how much compaction it requires, and which materials hold up over time. The fact is, there's more that can go wrong than meets the eye.

At \$5 to \$6 per sq. ft., concrete is top among popular paving materials. I would be remiss if I didn't mention its negative environmental impact. The energy-intensive production process, according to Green Building Advisor, accounts for an estimated 7% of greenhouse gas emissions globally. Another problem with concrete: It expands and contracts with changing temperatures,



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which means patios should have expansion joints to handle freezing and thawing conditions. I can't help but wonder how many backyard patios have expansion joints. Something else patios regularly lack? An edging system along the perimeter to keep pavers from wandering off. Move into the brick and stone categories—each of which comes with its own maintenance headaches—and costs increase exponentially (at which point you might as well build a deck).

Perhaps our difference of opinion stems from the fact that Matt, a builder, feels compelled to erect, maintain, and repair a deck himself, whereas I feel no such compulsion. I'm perfectly willing to hire a contractor should any structural damage occur. In the meantime, I spend my time annihilating ant hills, tweezing crabgrass, shifting sand, and generally fussing over my patio. I'm hoping for a decent ROI. □

Kiley Jacques is design editor.