

Bevilacqua Deck Builders Explains Drought Effects on Existing Decks

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Bevilacqua Deck Builders has released guidance on how sustained dry conditions affect residential deck structures, following the Massachusetts Executive Office of Energy and Environmental Affairs designation of drought conditions across much of the state. According to the U.S. Drought Monitor, approximately two thirds of Massachusetts was under active drought as of late July, part of a pattern of below average precipitation that state officials have tracked since 2024.

The guidance addresses a seasonal factor that receives less attention than winter weather. Wood decking and framing hold a moisture content that varies with the surrounding air. During extended dry periods, that internal moisture falls, and the wood shrinks as it does. The USDA Forest Service Forest Products Laboratory documents this relationship in its Wood Handbook, which describes how dimensional change follows moisture exchange between wood and its environment.

Surface cracking is the most visible result. Outer layers of a board dry faster than the interior, and the resulting tension produces checks and splits along the grain. Those openings admit water when rainfall returns, which begins a cycle of expansion and contraction that widens them further. The pattern tends to appear first on the areas of a deck that take the most direct sun, which is why one section of a surface can look considerably older than another.

Connections are affected less visibly. Fasteners driven into wood at one moisture content lose contact as the surrounding material contracts. Framing connections can develop small gaps that change how load moves through the structure. These conditions are not apparent from the deck surface, and a homeowner may first notice movement or deflection underfoot rather than any visible damage. The connection where a deck attaches to the house carries particular significance, because it transfers a substantial share of the structure's load into the building itself.

Soil conditions add a second variable. Prolonged dry weather changes the volume and bearing behavior of many soils, and how much depends on the material present at a given site rather than on any regional average. Two properties on the same street can differ. The USDA Web Soil Survey provides parcel level soil data for property owners seeking that information.

"Wood moves with the weather, and after two dry seasons a deck is not sitting the way it did when it was built," said Anthony Bevilacqua, owner of Bevilacqua Deck Builders. "The surface is usually the last place a problem shows up. What matters is the frame underneath, the connection to the house, and whether the footings are still doing their job."

Material selection changes the response. Composite decking combines wood fiber and plastic, and polyvinyl chloride decking contains no wood at all. Neither exchanges moisture with the surrounding air the way lumber does, so both resist the cracking pattern that affects wood surfaces. The framing beneath them, where wood framing is used, remains subject to the same effects, which is one reason a surface in good condition does not by itself indicate a sound structure.

Timing also matters. Dry conditions that persist through a summer are followed in New England by a season of freezing and thawing, and openings created during a dry period admit water that then expands as it freezes. Bevilacqua Deck Builders notes that the interval between the end of summer and the first sustained cold is the practical window for addressing conditions found on an older structure.

The company assesses framing, ledger connections, and footings before recommending any surface work, on the basis that a frame in sound condition can often carry replacement boards and railings while one that does not require reinforcement or rebuilding. That sequence applies whether the eventual work involves individual board replacement, railing and stair repairs, post stabilization, or a full rebuild. More information about the company's approach is available at bevilacquadecking.com.

Founded in 2017 and based in Massachusetts, Bevilacqua Deck Builders designs and builds residential and commercial decks, porches, and outdoor living spaces in wood, composite, and PVC. Owner Anthony Bevilacqua brings more than fifteen years of construction experience across paving, home building, and renovation to the company's deck and outdoor living work.

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