

LEAVE GAPS EVERYWHERE

IT MAY SOUND COUNTERINTUITIVE, BUT CREATING STRATEGIC GAPS THAT ALLOW A HOUSE TO MOVE WILL MITIGATE CALLBACKS AND LOST PROFITS

By Graham Davis

The last edition of this column addressed drywall cracks caused by movement of a home's framing members due to changes in temperature and humidity, as well as wind, seismic, and live loads.

In fact, almost every aspect of a house is constantly in motion. If neglected in your construction processes, this dynamic can (and usually does) lead to callbacks with varying degrees of severity, especially early in a home's life.

It's a bit of an art to accommodate the near-constant settling, swaying, shrinking, and expansion of a home's structure and finishes. If I had to sum up the solution in three words, it would be: "Leave gaps everywhere." It's that simple. And, in most cases, fill those gaps with a high-quality, flexible sealant.

Concrete. The most common cracks in concrete slabs are due to shrinkage early in the curing process. A control joint—a surface cut or groove at least one-quarter the depth of the slab—can direct where a crack occurs, help keep it straight, and conceal it to some extent.

Sheathing. For the roof, walls, and floors, the American Plywood Association recommends a 1/8-inch gap on all sides of a panel to allow for expansion and contraction caused by moisture (see image 1, opposite page). Without such gaps, you can expect issues with finish materials.

Siding. Follow manufacturer instructions for gapping. All siding requires edge gaps

where siding meets trim pieces, as well as over drip caps, water tables, and hardscape and landscape elements. Lap siding extends lengthwise as it warms from the sun; a gap allows this movement to occur without causing issues, such as buckling.

Brick veneer. Long wall sections require expansion joints, but there also should be a 1/4-inch gap around windows, door frames, and at material transitions (image 2). Butting brick up tight to a vinyl window is a recipe for a cracked frame or thermal unit, or for the window to stick.

Stucco. Like concrete floors, three-coat stucco requires control joints to control cracks (see image 3). Best practices for these gaps are outlined in ASTM Standards C926 and C1063.

Tile floors. Ceramic tile should be decoupled from structural substrates. Create gaps between the tile and subfloor and fill them with crack-isolation membrane.

Drywall. In addition to managing truss uplift (image 4), other places where gaps allow frames to move without cracking drywall include a 6-inch gap between the corners of rough openings and any vertical or horizontal joints in the drywall.

Tiled shower walls. We've covered best practices for waterproofing tiled shower

walls in previous articles, but gaps are essential where tile meets other materials, such as a fiberglass tub or shower pan, and also where it turns a corner. Grout lacks flexibility, so fill those gaps with sealant to reduce cracking.

Material transitions. All transitions from one type of material to another along a finish surface, inside or outside, need a 1/8-inch gap filled with sealant.

About sealant. Rule No. 1: Don't skimp on sealant! Also, sealants must be durable and flexible. We recommend brands that meet ASTM C920 Class 25 standards. In addition, not all joints are created equal, and sealant simply pressed into a corner will fail early. A best

practice is to create an "engineered joint" that fills a gap and bonds only to the two opposing surfaces. For large gaps, press backer rod into the depths of the gap and apply sealant over it, providing the greatest degree of flexibility.

Houses are forever on the move. Let's build them in a way that allows for it. **PB**

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IMAGE 1: SHEATHING GAPS



IMAGE 2: BRICK VENEER GAPS



IMAGE 3: STUCCO CONTROL JOINTS



IMAGE 4: TRUSS UPLIFT GAPS

