



EXPANSION JOINTS: WHAT TO KNOW & WHAT TO EXPECT

When pouring a new slab of concrete, expansion joints are necessary. They are what allows concrete to shrink and expand without cracking. Here, Jim Peterson, founder and president of ConcreteNetwork.com, and Doug Snider, VP and Chief Operating Officer at SUNDEK share the basics of what you need to know about expansion joints before having a new slab installed for a project.

WHY ARE EXPANSION JOINTS NECESSARY?

Concrete is durable and strong, but not stagnant. If the soil shifts below a concrete slab, the concrete naturally shifts with it. Concrete also shrinks and expands over time. It's that movement that causes cracks, but properly placed expansion joints significantly reduce hairline cracks and go a long way in preventing major cracks from occurring, though it's not a guarantee. As Peterson puts it, "the expansion joint is placed so the crack can hopefully happen in the joint instead of the concrete slab."

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TYPES OF JOINTS

Different types of joints serve different purposes for a concrete slab.

- Isolation joints isolate the slab from something near it such as a drainpipe, a wall, or a column. These are placed before concrete is poured.
- Construction joints are used during the pouring process since the entire slab won't be poured at one time. A construction joint is placed at a stopping point, and they're



formed using a bulkhead made of a material such as wood, steel, plastic, or precast concrete.

- Contraction joints are the joints that are placed in concrete after the fresh concrete is poured. They are formed with sawing or tooling a joint with a grooving tool or by putting a plastic strip into the concrete during the finishing process.

EXPANSION JOINTS AND COATINGS

Even if you're planning to have your concrete slab resurfaced with a coating, the slab still needs expansion joints, as the decorative coating's purpose isn't intended to prevent cracking. Rather, the success of the coating depends on the reliability of the concrete slab beneath it.

Before a coating is applied, your contractor will inspect the slab for proper expansion joints. If the slab needs additional expansion joints, it is possible to saw cut into the surface to direct the slab to crack at the new joints. However, the best time to saw cut joints is as soon as the slab hardens—that's why it's so important for the expansion joints to be placed properly when the new slab is installed.

After a coating is installed, when your contractor adds decorative scorelines, they do not need to line up with the expansion joints of the concrete slab.

WHEN TO CUT JOINTS

Timing is important. The concrete needs enough time to withstand a tool or a saw, but if you wait too long, the concrete might begin to create its own joints—in other

words, it'll crack. If it's hot out, that's even more likely to happen.

If your contractor needs to cut the joints fairly quickly after the concrete is poured, they can opt to use an early-entry dry-cut lightweight saw. With this type of tool, the joints can be created pretty much right after finishing pouring the concrete.

JOINT DEPTH

To be most effective, an expansion joint should typically be about $\frac{1}{4}$ of the thickness of the slab itself. So, for example, if a concrete slab is 4 inches deep, the cut needs to be about 1 inch deep.

Properly placed joints meet at the corner to prevent cracking on this 30-year-old stained concrete surface.



JOINT SPACING

When spacing out joint cuts, the general rule of thumb is that each joint should be around 2-3 times the thickness of the slab, but in feet. So, for example, for a 4-inch slab, joints should be about 8 to 12 feet apart. Because timing is important, your contractor should plan out where each joint cut goes before pouring the concrete.

JOINTS ON CORNERS

Corners tend to crack, so it's important that your slab has expansion joints that mitigate that effectively—by making sure two perpendicular joints converge at the corner.

CAN AN OVERLAY BE PLACED OVER A CRACKING CONCRETE SLAB?

If expansion joints were done improperly

and cracking has occurred, it is still possible to apply a coating over the surface. According to Snider, using SUNDEK's Custom Scoreline Effect is "a functional way to incorporate existing cracks into the design of the decorative overlay."

Using this technique, SUNDEK installers prepare the surface by opening the existing cracks, then create a pattern that incorporates those cracks by adding scorelines by hand. Then, those cracks are all filled with a urethane sealant. Working with the cracks rather than against them mitigates the lack of quality expansion joints, resulting in a surface that is less likely to experience significant cracking in the future.

TIPS FOR STAMPED CONCRETE

During the project planning phase, discuss the pattern placement for your stamped

When a job has been done well and expansion joints are incorporated into the design, you barely notice they're there. Here, SUNDEK of Nashville resurfaced the entrance to a business using SunStamp.



concrete with your contractor. They should make sure that the stamp's pattern will line up with the joint line and won't appear misaligned.

Expansion joints ensure the reduction of hairline cracks in the surface, which, in turn, protect your concrete coating. This walkway was resurfaced using SunStamp.

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