



Installation over Concrete Slab

In addition to a standard patio installation, EarthStone patio stones are ideal as an overlay for any concrete surface. Both the uniform thickness and the standard sizes make it the perfect choice to place over a concrete slab either as a new install or as a means to beautify that “old” concrete patio. Recommended installation of the stone over a concrete slab calls for the use of mortar. The workability and effectiveness of the mortar is time sensitive and varies depending on the working conditions. Careful planning and a general familiarity with the use of mortar will aid in both the ease of installation and in the durability and beauty of the finished patio stone surface. Mortar using Type S masonry cement should be used in the installation of EarthStone patio stones. Once that the concrete surface has been completed the following steps should be taken to ensure project satisfaction:

1. **Be sure that the concrete surface to be covered has appropriate grade to divert water away from structures or other areas of concern and to avoid water accumulation.**
2. **Be sure that existing surface is free of substances that may prevent proper stone adhesion.** Examples of such substances include excessive dirt, oils, paints, sealers, etc... Dirty, painted, or sealed surfaces may be sandblasted or pressure-washed to return the surface to its original condition.
3. **Plan layout or design of stone to ensure proper placement and to avoid the necessity to replace or move stone once that they have been installed.** Since stones are set in mortar, there is difficulty in moving the stones once they have been installed. It may also be of benefit to place occasional grid lines or measurements to ensure proper stone placement and joint alignment.
4. **Apply the individual stones to the concrete surface using mortar.** The use of a mortar bonding agent may aid in adhesion (see your local masonry supply distributor for recommendations). A bed of approximately ¾” of mortar should be placed on the concrete surface in which the stones are to be placed. Apply mortar bed only to area in which stones are to be placed immediately. Applying mortar to too large an area may allow mortar to become too dry thus losing its workability and adhesive qualities. Mortar should be of the consistency that will support the weight of the stone but fluid enough to allow stones to be pressed into position and allow the mortar to spread evenly over the entire back surface of the stone. Caution should be taken to avoid any voids being generated under any part of the stones. (Voids can allow water accumulation and may subject the stone to undesirable freeze/thaw concerns).

5. **Level each of the stones consistent with the established grade of the slab and verify proper stone positioning and joint alignment.** Do not allow mortar to set or delay too long before verification. Also note that EarthStone patio stones are intended to be installed with approximately ½” joints between stones.
6. **Fill joints with mortar.** Once stones are set and are sufficiently stable, the joints should be filled with mortar using a mortar/grout bag. Exercise caution to avoid getting mortar on the faces of the stones.
7. **Strike/clean the mortar joints.** Once the mortar is sufficiently cured (mortar should be somewhat dry and crumbly; should not smear or leave residue on stone surfaces), use a mortar striking tool to remove the excess mortar and finish the mortar joints. A wisk broom may be used to provide additional cleaning and finishing of joints.
8. **Seal the completed patio or landscape project with a breathable concrete sealer.** Your local landscape or masonry supplier will have a variety of suitable sealers with finishes ranging from clear/natural penetrating sealers to topical, film-forming sealers with varying levels of sheen and color enhancement. **Always test sealers first for effectiveness and desired finish qualities.**

Helpful tips:

- Mortar should be of about the consistency of whipped mashed potatoes.
- Mortar workability diminishes over time. Make batches of mortar only large enough to utilize within 15 to 20 minutes.
- Mortar is designed to bond with masonry products. EarthStone is a masonry product. Avoid getting mortar on the finished stone surfaces. Any mortar on the stone surface should be removed immediately using water and a cloth or soft nylon bristle brush. Avoid spreading the mortar over the stone surface, as the stone is porous and removal may be difficult.
- Avoid installation of stone during extreme heat. The heat of the concrete slab and subsequent lack of moisture may create less than ideal curing conditions for the mortar. Mortar that does not remain hydrated for a sufficient time will not realize the desired strength.
- Do not allow the finished patio to be exposed to freezing temperatures within 48 hours of project completion.

Please visit www.earthstoneonline.com (Installation Guides Section) to view guides for other installation methods or for installation instructions for other EarthStone Products.