

StoneDeks™ System

PORCELAIN AND NATURAL STONE INSTALLATION METHODS



There are so many possibilities when you use the StoneDeks™ System! Any dimension Stone, Paver or Porcelain pavers from ¾" up to 3" can be used (*for additional technical/installation questions, please call... Design tables are available upon request.*)

- Raised or second story decks
- Gazebos
- Patios - especially those located on steep inclines where back fill and access costs are prohibitive
- Multi-level or terraced patios - especially where the grade is difficult and expensive to achieve
- Balconies and porches – match surrounding hardscape right up the steps
- Water features
- Bridges
- Docks, piers or water's edge walkways
- Boat houses
- Pool decks for above ground pools
- Pool decks where the surrounding grade is problematic
- Raised walkways where the soil conditions are problematic
- Any area where the deck can be matched to the hardscape
- When the homeowner wants an option other than wood or something that looks like wood
- Any time you want to eliminate settling issues and callbacks

The StoneDeks™ System is designed to be installed on a 16" on center joist system. 8" on-center joists have been used to provide additional support in areas with snow load issues. Using 8" on-center will also reduce the natural flex to the system. The StoneDeks™ System SilcaGrate™ is designed to have some flex for durability. Your deck will flex through the change in the weather and the seasons. If the grate did not flex it would break. (E.g. when attempting to use concrete on a deck, even when installed correctly, the concrete will crack and break over a few years because it is not flexible. The same will happen with mortar and tile.)

INSTALLATION ON DECK JOISTS

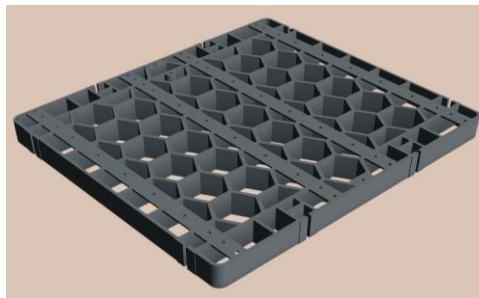
Level the deck – for residential and rooftop applications (deck should be pitched and deck must be flat.)

1. Start with the finished height of the top of your finished deck floor, then work backwards: thickness of the paver, then the thickness of the Silca grate, then the top edge of your joist. Consider door thresholds and steps, as well.
2. Check your dimensional lumber or metal joists to make sure they are level (some contractors use 2x12 for all installations even if it is not called for in the design tables). Install joist crown up.
 - a. Use straight edge
 - b. Use long level
 - c. Use level line

3. Correcting the level (Flatness) if needed
 - a. Adjust pedestals
 - b. Apply shims
 - c. Plane down crowns on lumber (joists should be installed crowns up).

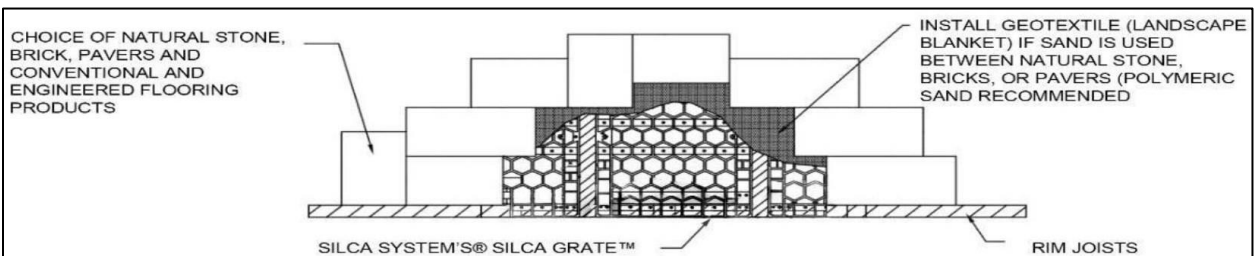
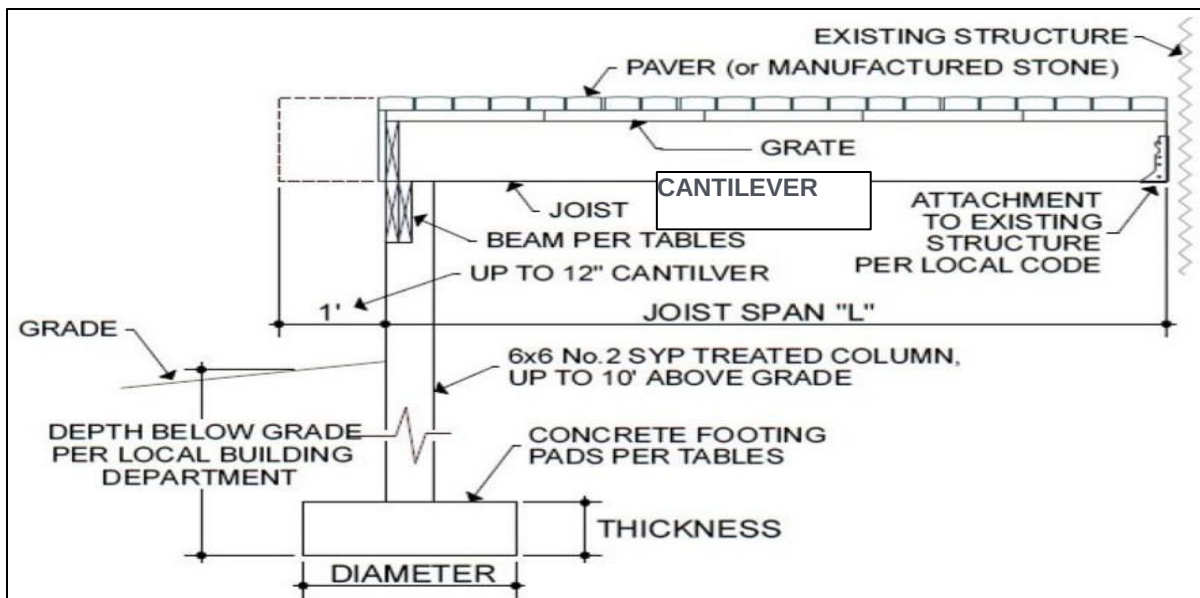
Install SilcaGrate™

1. Be sure the SilcaGrate™ is installed correctly
 - a. If you are using a recommended adhesive to adhere your stone to the grate, you can install the grate with the straps on top for the main body of the deck, or just for the perimeter for additional gluing surface.

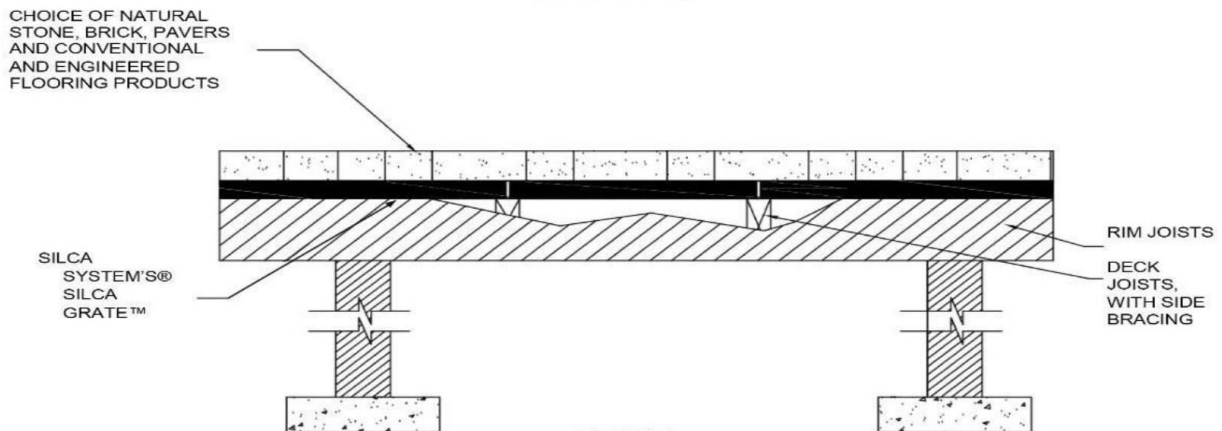


Strap up for adhesive contact

2. Every other row should start with half a grate cut in half length-wise.
3. Fasten using #9 x 3" deck screws, 4 per grate.
4. Fasten using an appropriate metal screw for metal joist (screw head must recess into the countersink). Some self-tapping metal screws have a wing tip that won't fit through the screw hole, you may need to use a standard metal screw and pre-drill the holes
5. Trim SilcaGrate™ where necessary (use medium tooth saw blade/circular saw/reciprocating saw/table saw/jig saw). Grates can be pre-cut or run over the edge of the rim joist and cut off in place using a saw.
 - a. Any cut edges should be supported with blocking
 - b. When screw holes have been cut off screws can be toenailed or applied through the bottom rib



PLAN VIEW



FRONT ELEVATION

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. FOR PRODUCT AND COMPANY INFORMATION VISIT WWW.STONEDEKS.COM OR CALL 330-821-1585

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PORCELAIN PAVER INSTALLATION ON DECK JOISTS- 2 installation options

1. Use of SilcaMat™ with Porcelain pavers -recommended method of installation

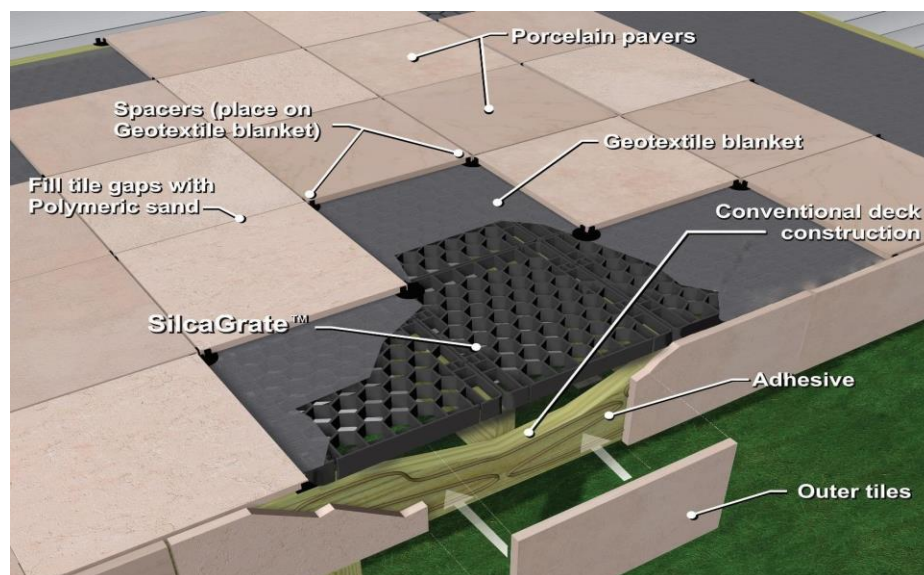
- a. SilcaMat™ is applied to the top of the SilcaGrate™ prior to the installation of the paver. The advantage to the use of the SilcaMat™ is the reduction of movement and reduction of sound as porcelain pavers have a hollow ringing sound when used over an open area.
- b. When installing the pavers on SilcaMat™ we recommend the use of removable tile spacers to ensure proper spacing. Butting together porcelain pavers is not recommended as chipping will occur. Pavers may be glued to the mat if desired using SB-190 adhesive or equivalent) (only a dime-sized amount of adhesive is needed on each corner.)
- c. Apply polymeric sand to joint lines and wet down as recommended. Sand may take a few days to fully set up. The outside edges of the joints on the end of the deck can be taped to prevent the sand from running out until it sets.

Note: With most polymeric sand the amount of drainage will be reduced to 5%-15% or less. There are joint filler products on the market that are permeable, or you can use combinations of finer aggregate and joint stabilizer that will allow for better drainage.

2. Use of Geotextile and spacers with Porcelain pavers

- a. Geotextile 3 mm thick, woven or unwoven, is applied on top of the SilcaGrates™ prior to the installation of the stone or paver
- b. Flexible spacers should be applied to the corners of the tile to prevent clicking together and then glued to the fabric and glued to the paver using SB-190 adhesive or equivalent.
- d. Once spacers and tiles are applied, a fine polymeric sand should be applied to the joints and wetted down. The outside edges of the joints on the end of the deck can be taped to prevent the sand from running out until it sets.

Note: With most polymeric sand the amount of drainage will be reduced to 5%-15% or less. Also, there are joint filler products on the market that are permeable, or you can use combinations of fine aggregate (#9 or granite chips) and joint stabilizer that will allow for better drainage.



COMMERCIAL ROOFTOP APPLICATION - 4 installation options.

1. **Direct on Pedestals:** Support SilcaGrate™ using pedestals.
2. **Pedestals with dimensional lumber framing:** Support with dimensional lumber or metal framing using pedestals with dimensional lumber attachments and apply rooftop SilcaGrate™
3. **Pedestals with metal framing:** Support with dimensional metal framing platform and apply SilcaGrate™.

Note: Custom aluminum framing is available by special order.

4. **Overlay application for limited height:** Support with dimensional lumber framing platform and apply SilcaGrate™. For roof top overlay with limited or no mechanicals, the SilcaGrate™ can be supported with plastic or vinyl sleepers allowing $\frac{3}{4}$ " for drainage underneath, install in the direction of scuppers or drains and hold back $\frac{1}{4}$ " from the edge of the side of the roof. See patio overlay installation for more details.

Note: We recommend a $\frac{1}{8}$ " perimeter gap for drainage. Install pavers with SB190 adhesive or equivalent for more secure installation



SilcaGrates™ on pedestals

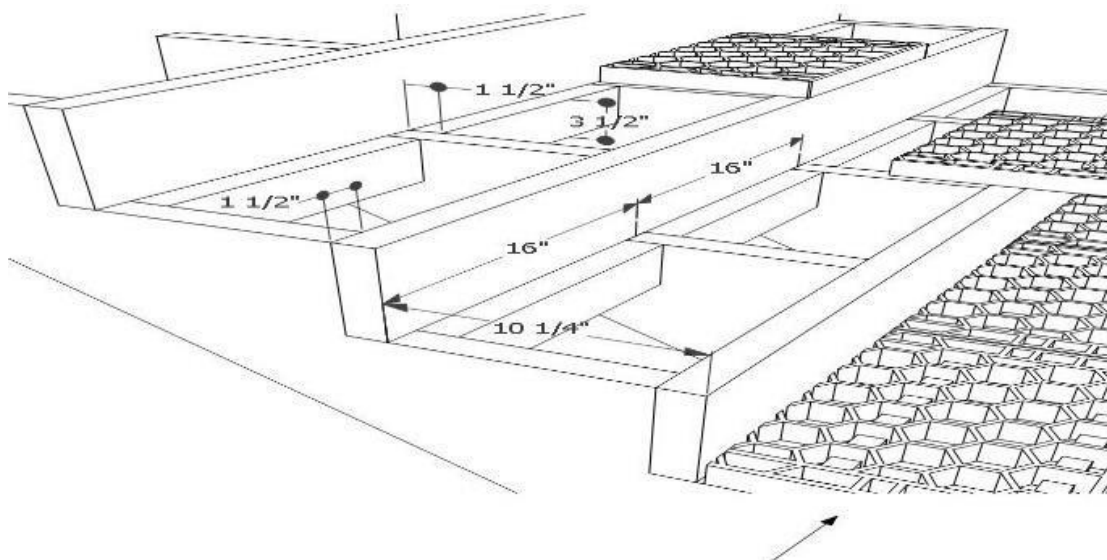


SilcaGrates™ on pedestals with joist adapters and joists. (reduces required number of pedestals.)



INSTALLATION ON STAIRS

5. When installing the SilcaGrates™ on steps be sure to do the math to ensure correct tread and riser spacing. Stringers should be positioned 16" on center and the grates cut to the length of the tread. *The grate should be supported on all 4 sides for stair application.* Risers can be finished in stone by attaching the stone to the wood with adhesive. The tread can then be bull-nosed over the top of the riser and secured with adhesive. Stair edges can be finished in a number of options in the same manner as the edge finishes pictured above.
6. If you are using a recommended glue to adhere your stone to the grate, install the grate with the straps on top for the main body of the deck or just for the perimeter for additional gluing surface „such as a full bead when **Apply Pavers**



PATIO OVERLAY INSTALLATION

Installation of SilcaGrate™ as a patio overlay provided pitch and level are correct

a. Install sleepers using vinyl or plastic lumber installed on a 16" on center pattern in the direction of the pitch of the patio. Install the SilcaGrate™ on top of the sleepers with a 1 3/4" long screw with a #9 head, allowing 3/4 of an inch for drainage underneath the grate.



Note: Rim joist or fascia board can be covered with matching stone or paver using a masonry glue or SB 190 adhesive. A ledger board may be needed to hold the stone in place until the glue sets up. The stone on the main body of the deck can be extended to cap the stone on the fascia. This method can also be used with stair systems as well as being applied to exterior plywood then attached to the side of the deck. Remember to allow some gaps to allow air to the underside of your deck

GROUND INTALLATION USING SILCA SOILGRD™

Silca SoilGrid™ can be used for Hardscape Installation for Patios, Walkways, and Pathways (half the base and aggregate is needed and paver installation is much faster. Silca SoilGrid™ creates greater load dispersal which results in fewer call backs for settling)

1. For a typical pathway installation, the area must be excavated but only half as much as needed for a traditional hardscape application, and then the leveling media set in place and compacted.
2. A geotextile blanket can be used if desired, followed by the Soil Grid
3. Once the grates are in place the cells are filled with the desired aggregate followed by a geotextile, then the porcelain pavers are installed.
4. The final step is sweeping polymeric sand into the joint lines and setting per the manufacturer's instructions. Porcelain pavers are only recommended for use for pedestrian traffic unless laid over concrete.

WHEN TO USE THE STONEDEKS SYSTEM

Simply put, the StoneDeks™ System allows you to put porcelain pavers on a wood or metal frame structure such as a deck, roof top, porch, balcony, raised walkway, gazebo, dock, pier or landscape feature. This can save you money and time as well as offer you more options for deck coverings.

When to suggest or think about using the StoneDeks™ system

For Deck Builders

This is a **good, better, best approach** with your homeowner. In addition, with the use of porcelain pavers there are a great variety of design options, including matching existing hardscape or interior stone tiles.

1. Works with decks, 2nd story decks, raised walkways, porches, balconies, docks and piers, any wooden or metal framed floor system.
2. Requires far less maintenance and is longer lasting than a wood deck.
3. When you have a tiered patio or deck you are able to do this without all the back fill and retaining walls, and no settling issues, thus saving on construction costs.

For Hardscape

StoneDeks System creates the opportunity to add additional design elements on a current project and match existing hardscape.

1. In backyards where homeowners want a patio, but the slope is too extreme. Where retaining walls and huge amounts of backfill are needed, the same job can be done with a wood or metal frame that is then clad in stone, with no need to return for settling issues.
2. For water features such as bridges and waterfalls which can be framed in wood and clad in stone.
3. For retaining walls which can be built with a wood framed structure inside to support the deck frame and keep the massive stone look without all the backfill.
4. When access to the construction area is limited.
5. When you have a tiered patio or deck you can do this without all the back fill and retaining walls, and no settling issues that would normally be very cost prohibitive.
6. When soil conditions are poor or water saturated, such as near rivers or lakes.