

Silca[®]
SYSTEM

INSTALL GUIDE

Manufacturer's Recommendations – Install Guide

- **Always remember to use appropriate safety gear**
- Please read this entire guide before installation
- **CAUTION:** Have a qualified person inspect all footings, piles, bearers and joists for compliance to relevant building code
- **CAUTION:** Make sure the stringer is bolted securely through a corresponding structural member on the house
- Remove all old timber or composite decking etc. from existing deck. (Renovation of existing deck)
- Check joists are at 400mm centres and are dead flat, check with a straightedge and adjust accordingly

Materials

- For materials you will need 65mm -75mm deck screws with a countersunk head.
- Make sure they are coated deck screws to prevent rust in the treated deck frame.
- Adhesive for gluing your tiles or pavers directly to the Silca Grates. We recommend – Sikaflex®-123 MS Bond By SIKA.
- *If you choose* to do an installation using grout or paver sand you will also need landscape fabric and polymeric sand

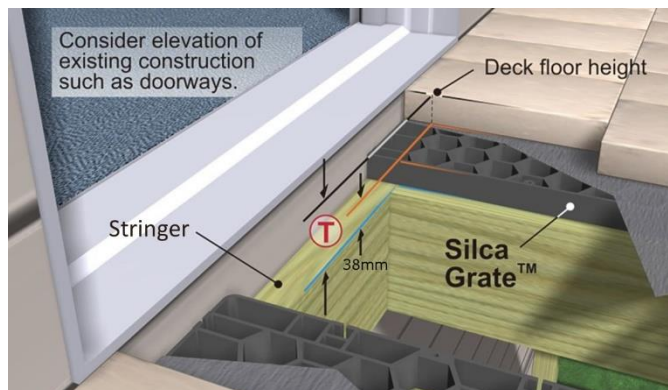
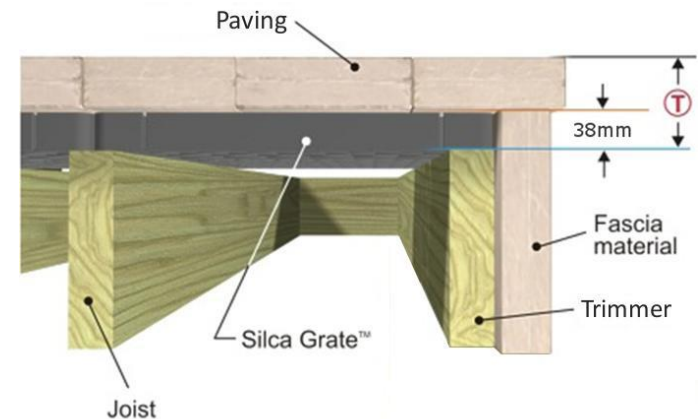
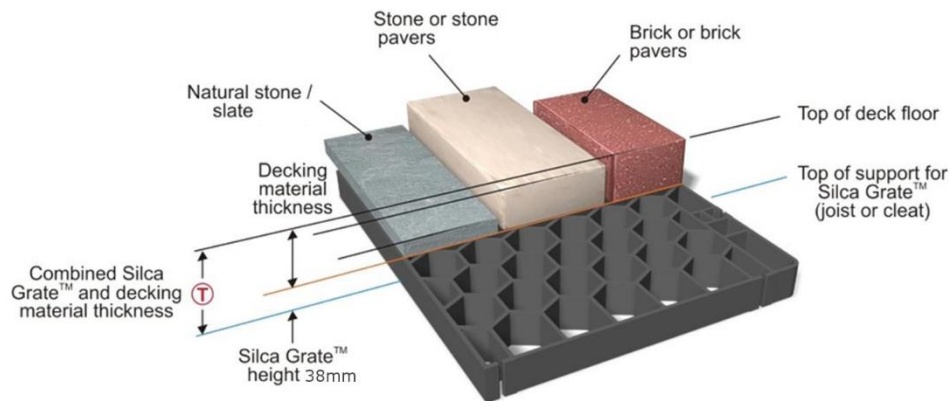


Tools

- For tools you'll need all the typical tools that you would need building any deck. Level, measuring tape, pencil, string line etc.
- You will need a drill or impact driver for screwing the grates to the joist.
- If cutting will be required a circular saw, reciprocating saw, jig saw and/or table saw. Depending on the scale of your project, one or all of these tools would be sufficient.

Preparation

- Establish your finished surface level considering existing door thresholds, steps, heights etc.
- Ensure the paver or tile you select is suitable, of the same or similar thickness (we recommend over 14mm) and the underside is flat or consistent to prevent rocking. Currently the most popular choice is 20mm Porcelain Tile.
- Subtract thickness of paving material then subtract 38mm for SilcaGrate thickness. This will determine the top of the joist level down from your door sill where applicable.
- *If* polymeric sand or grouting is to be used to achieve a sealed surface, then adequate fall or gradient will need to be designed for rainwater runoff. It is easiest to achieve fall with the joist. (This surface is classed as non-permeable and does not allow Level entry through thresholds)
- Where a free draining “permeable surface” and level entry through threshold is desired (no grout) a level structure can be constructed.
- Choose Border/Facia Type – Timber fascia – Tile/paver to match – Aluminium system – Fiber Cement board or similar



Deck Construction

- Silca Grates are designed to help with “creeping” on joist centers and actual width is 398.5mm. So please keep this in mind when planning your joist layout and installation. An extra-long deck may require correction of centres every so often.

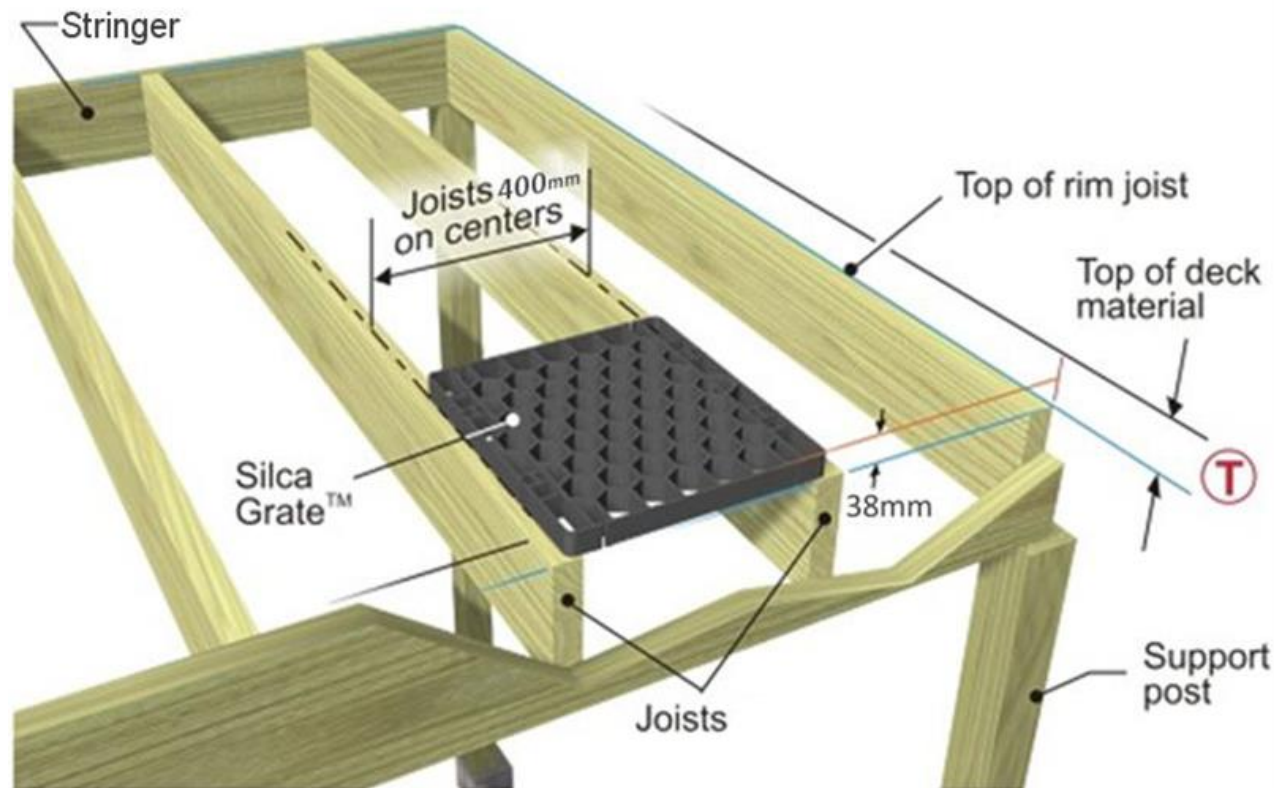
We recommend KD (Kiln Dried) exterior use treated H3.2 timber. *(Refer to joist span/paver thickness tables as a guide)*

Deck structure needs to comply with local building code and if required may need to be engineered and consented, depending on height and ground conditions etc.

- Build your deck substructure with joists placed at 400mm centres. Make sure joists are finished dead flat and adjusted with electric plane and straightedge where required. (Joist tape can now be installed if preferred *optional* this can help with sound deadening)

- If polymeric sand or grouting is to be used to achieve a sealed surface then adequate fall or gradient will need to be designed for water runoff.

- Where a free draining “permeable surface” and level entry is desired, (no grout) a level structure can be constructed.



Representation of structure only

SilcaGrate Install

- Place SilcaGrate on deck joists so the edges sit centered on each joist. The Spanning Ribs spanning from joist to joist. (Staggering optional)
- Silca Grates are designed to help with “creeping” on joist centers and actual width is 398.5mm. So please keep this in mind.
- If “Silca I-Lock Connectors” are being used (e.g. over floating joist system) these lock the Grates very tight to one another, so please keep these tolerances in mind as long runs can actually calculate less.
- Attach Silca Grates to joists using X6 countersunk wood thread screws per grate. 10G x 75mm screws. (These can be supplied upon request)
Only tighten screws to a firm stage and do not over tighten. (this can damage the countersink and compromise the grate’s structure)



Complete SilcaGrate Installation

- Install Silca Grate over the entire desired area. Steps and stairs can also be installed.



Paver/tile – Test and Install

- Now is the best time to test install your choice of paving to check for pattern and material fit and trim. Planning for desired layout is vital as this can lead to a smooth efficient install with fewer cuts or redoes.

Depending on your paver choice and application there are several solutions for you to choose from.

OPTION 1) Glue fix the tiles/pavers direct to the Silca grates using a suitable construction adhesive. We recommend the Wedi 610 Silicon Based adhesive. This can be supplied upon request)

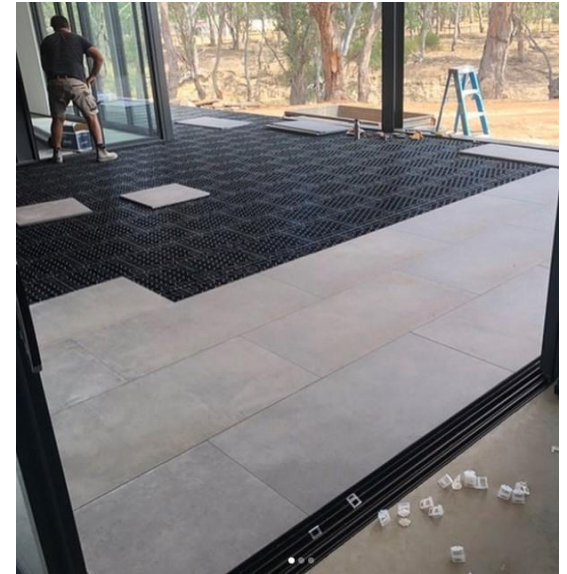
Spot glue fix the adhesive around the countersunk screw areas on the grates with a large dobb about the size of a plastic Coke bottle cap, this provides a good key for the adhesive. Place down pavers using spacers and strings to keep straight.

A 3mm spacer is a nice fine gap yet still allows water to drain. To achieve a “permeable surface” regarded by councils a 5mm Gap around each tile/paver is required. See E2/AS1 for permeability and level entry.

Allow adhesive to fully cure before removing spacers or walking on finished surface.

OPTION 2) lay down a geotextile cloth on top of the grates then lay your pavers and bind by sweeping in a polymeric sand (cement based sand) or grouting. There are more flexible grouts these days so cracking has not been an issue. Even permeable grouts so water can drain through without the need for fall. This is up to your design preferences.

OPTION 3) if the pavers are heavy enough e.g. people have used 1mx1mx60mm concrete cast slabs, a simple dry lay can suffice and will stay put under their own weight. Again, design preference as a grout line may still be required to hide deviation in paver gauge, squareness etc.
Note: for grouted finishes a combination of both OPTIONS 1) and 2) can be achieved



(Optional) • If polymeric sand or grouting is to be used, install a geotextile/landscape blanket over SilcaGrates. This helps the sand from falling through during install. If adhesive of tile direct to the Silca Grate is still required, simply cut holes as you go.

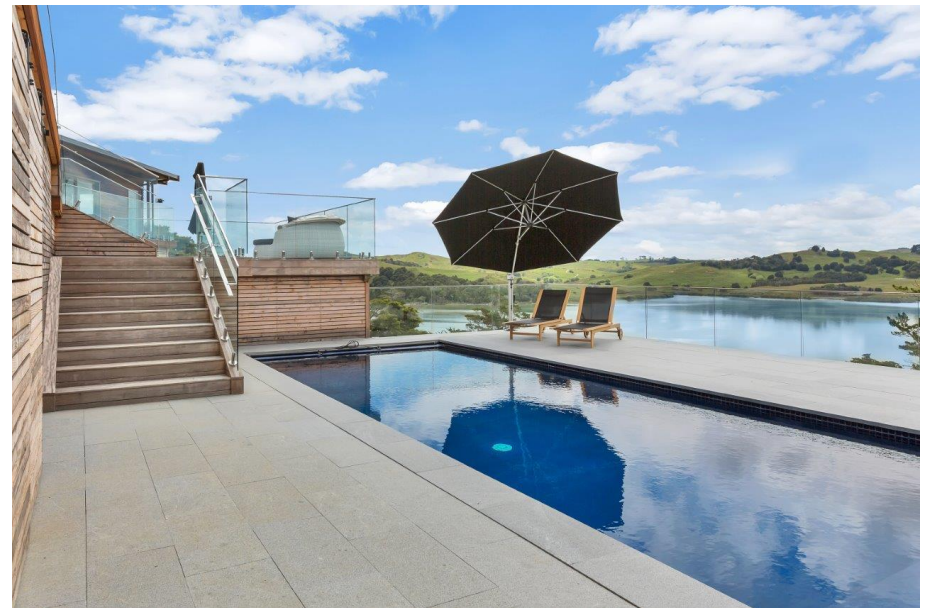


Polymeric Sand Application Tips

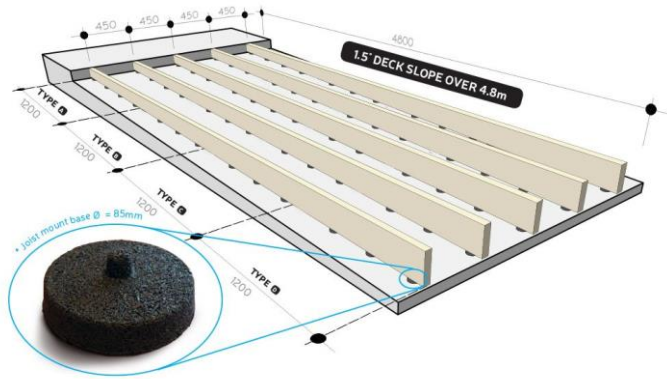
- Check weather forecast to allow for 12 hours of curing time without precipitation.
- On a perfectly 100% dry surface pour Polymeric sand into all joints. Use a broom to ensure all joints are filled with sand.
- Excess sand on the surface of the paving material can be removed using a leaf blower, LIGHTLY. Be sure all joints remain filled with sand.
- Lightly wet the polymeric sand and entire paving surface using a garden hose soft sprayer or mister. Be sure all joints are saturated, not flooded.
- Repeat wetting 3 times, then use a leaf blower to blow the excess water and slurry off the surface.
- For more details please refer to manufacturers specifications.



Complete Installation of Decking Material and Enjoy Your New Low Maintenance Outdoor Living Area!



FOR INSTALLATION OVER MEMBRANE OR SLAB THE ABOVE INSTALL GUIDE STILL APPLIES YET USING A FLOATING JOIST STRUCTURE.
NOTE: FOR ALL FLOATING JOIST INSTALLS WE RECOMMEND USING OUR I-LOCK CONNECTORS TO HELP STABILISE THE DECKING ELEMENT.



Additional Notes

- Please refer to your local building code and/or a qualified representative for all deck structure design and construction.
- Do not allow SilcaSystem units to be exposed to any undiluted acids or solvents.
- Only tighten screws to a firm stage and do not over tighten. (this can damage the countersink and compromise the grate's structure)
- SilcaGrate shall be installed in accordance with these Manufacturer's Recommendations.
- SilcaSystem or Merx Pacific Ltd. will not be held liable for any variation to these recommendations.