



SILCA SYSTEM

INSTALL GUIDE

OVER

OUTDURE QWICKBUILD

CONTENTS

PG. 2

Preliminary Installation Notes

PG. 3

Preparation

PG. 4

Qwickbuild Installation

PG. 5

Silca Grate Installation

PG. 6 - 7

Tile/Paver Installation

PG. 8

Additional Notes



OVER OUTDURE QWICKBUILD

MANUFACTURERS RECOMMENDATIONS

This is a comprehensive installation guide for Silca System Grating over OUTDURE Qwickbuild aluminium framing.

Silca System Grates are screw fixed directly to the joists of the Qwickbuild framing system.

It provides a flat, durable, free-draining surface on which to lay tiles or paving. It is suitable for use in all climate zones. Silca System can be used on structures within the scope of NZS 3604 and provides a permeable surface under E2/AS1.



BEFORE BEGINNING THE INSTALLATION PROCESS, GATHER ALL NECESSARY MATERIALS AND TOOLS.

MATERIALS:

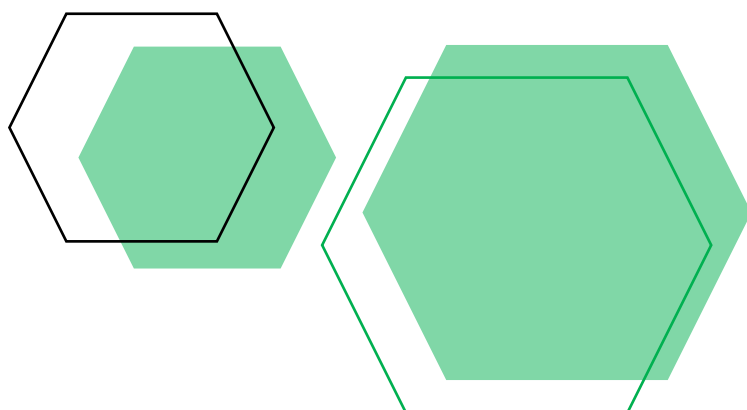
- Silca System Grates
- Silca System Connectors
- Screws (10G X 60 410 CSK SQ SELF DRILL WINGTEK)
- Tile Adhesive (SabreBond SMP45)
- Pavers or tiles. Recommended 14-70mm. (Most popular is 20mm)
- Tile spacers (2-5mm)
- Geotextile blanket (optional - for when sanding or grouting only)
- Border/Facia Type if required
 - Timber facia – Tile/paver to match –
 - Aluminium system – Fiber Cement board or similar.

TOOLS:

- Drill or impact driver.
- Hammer - for nocking in Connectors.
- String line.
- Straightedge and Electric Plane (if needed to flatten joists)
- Circular saw and/or reciprocating saw for cutting Grates if needed.
- Adhesive sausage gun or caulking cartridge gun.

PRELIMINARY INSTALLATION NOTES

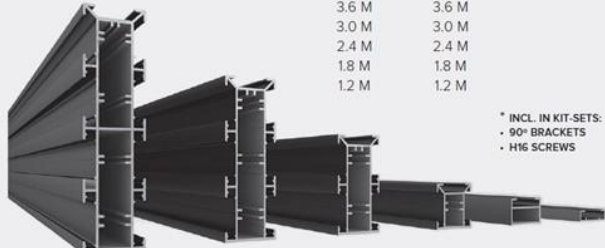
1. **Prioritize Safety:** Always prioritize safety by using appropriate PPE throughout the installation process.
2. **Thoroughly Read Installation Guide:** Familiarize yourself with the entire installation guide before beginning.
3. **Inspection of Deck Substructure:** Have a qualified professional inspect all footings, piles, bearers, and joists for compliance with relevant building codes, or have a qualified engineer design accordingly.
4. **Seek Professional Assistance if Necessary:** Don't hesitate to seek help if you encounter complexities. Contact Silca System NZ or Outdure.
5. **Maintain a Clean Work area:** Keep the work area clean and organized. It makes the job safer, more efficient, and enjoyable.
6. **Adhere to the Manufacturer's Instructions:** Follow these recommended procedures and guidelines carefully to help ensure the successful and safe installation of the Silca System.



PROFILES AVAILABLE AS KIT-SET* IN THE FOLLOWING LENGTHS:

PROFILES (MM):	180X45	135X45	90X45	45X45	28X45	13X45
LENGTHS:	5.8 M	5.8 M	5.8 M 3.6 M 3.0 M 2.4 M 1.8 M 1.2 M	5.8 M 3.6 M 3.0 M 2.4 M 1.8 M 1.2 M	5.8 M	5.8 M

* INCL. IN KIT-SETS:
• 90° BRACKETS
• H16 SCREWS



PREPARATION

HEIGHTS, MATERIALS, METHODOLOGY

Measure and determine the desired finished floor level (FFL)(top surface of tile). This will depend on factors such as paver or tile thickness, door thresholds, existing structures, and aesthetic preferences.

Ensure the paver or tile you select is suitable, of the same or similar thickness within the batch, and the underside is flat or consistent to prevent rocking. Currently, the most popular choice is 20mm Porcelain or natural stone. (We recommend a minimum tile thickness of 14mm)

Silca System Grates are 38mm thick.

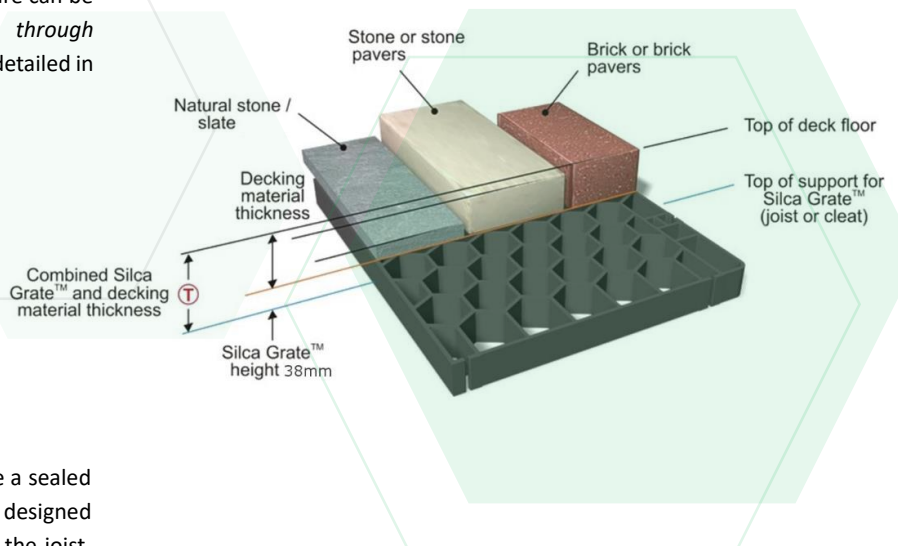
Subtract the thickness of the paving material then subtract 38mm for SilcaGrate thickness. This will determine the top of the joist level.

Calculation

$\text{FFL} - \text{tile thickness} - \text{grate thickness (38mm)} = \text{T (top of joist)}$



Where a free draining permeable surface and level entry through threshold is desired (no grout) a level structure can be built. For “permeable surface” and “level entry through threshold” a 5mm gap around each tile is required as detailed in E2/AS1 for permeability and level entry.



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.)



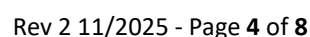
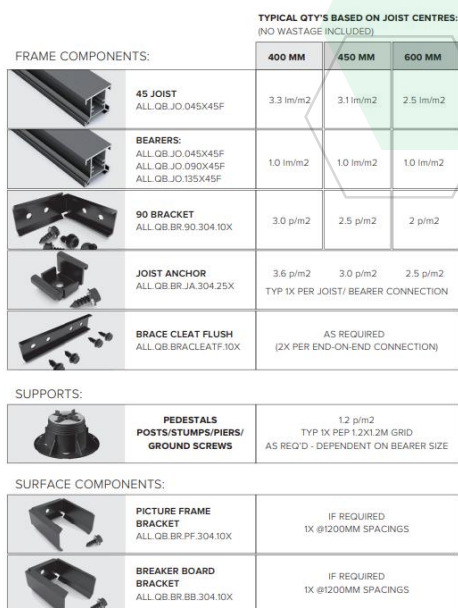
OUTDURE ALUMINIUM SUBSTRUCTURE FOR FLOATING OVER MEMBRANE OR SLAB

JOISTS spaced at 400mm centres.

Make sure joists are installed dead flat.

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

FOR MORE COMMON CONNECTION DETAILS PLEASE REFER TO THE OUTDURE QWICKBUILD DESIGN MANUAL.
FOR ALL OUTDURE PRODUCT DESCRIPTIONS OF USE PLEASE REFER TO OUTDURE PRODUCT CATALOGUES.



SILCA GRATE INSTALLATION

INSTALLING THE SILCA GRATES AND CONNECTORS TO THE SUBFRAME

Position the Silca Grates on top of the joists, butted up to each other so the edges sit centred on each joist. The Spanning Ribs span from joist to joist. Ensure the edges of each grate sit on the centre of each joist.

The Silca I-Lock Connectors are required for any floating joist system.

Insert the Silca I-Lock Connectors into the designated slots on each side of the grates, corresponding with the next grate. X2 per side.

Knock down connectors as you proceed approx. 2mm below flush. **Do not leave proud of the grate surface.**



Attach the Silca Grates to joists using X6 countersunk head self-drilling screws per grate. 10G X 60 410 CSK SQ SELF DRILL WINGTEK.

Do not leave screw heads proud of the grate surface.

The correct and recommended screws can be supplied as part of your order for use with Outdure Qwickbuild. These do not require pre-drilling.

Only tighten screws to a firm stage and do not over tighten. (this can damage the countersink and compromise the grate's structure)

COMPLETE SILCA GRATE INSTALLATION

Install Silca Grate over the entire desired deck area. Steps and stairs can also be installed. Trim grates where required using a suitable power saw. Extra screwing options are available using the strength bands.

Be careful not to damage the membrane when cutting or screwing.



TILE/PAVER INSTALLATION

TEST AND PLAN

Planning for the desired layout is vital as this will lead to a smooth efficient install with fewer cuts or redoes.

- Conduct a **trial layout** with your chosen tile or paver to verify pattern, fit, and necessary cuts.
- Plan the layout carefully to **minimise cuts and rework**, ensuring alignment with existing building elements such as railings, steps, stairs, and door thresholds.
- Use **strings, straightedges and measurement** to verify tolerances and maintain straight courses where desired.

INSTALL OPTIONS

Depending on your paver choice and design application, several installation methods are available.

Options vary based on permeability specification, material type or thickness, and desired style.



Option 1

Direct Adhesive Fix - (Permeable surface)

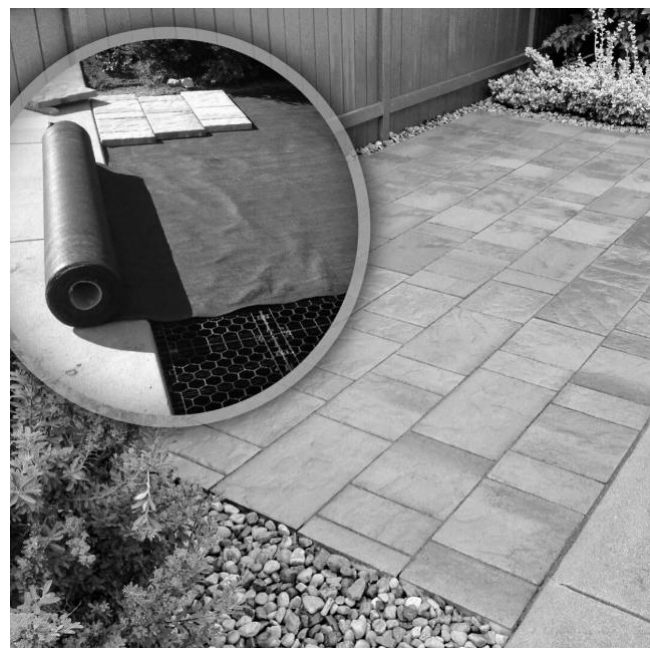
- Glue-fix tiles/pavers directly to the Silca Grates using **SabreBond SMP45 adhesive** (available on request).
- Apply **spot adhesive** on top of connectors, screw head areas, and bead along grate edges where they meet adjacent grates. Use **dobbs approximately the size of a Powerade cap**, These areas provide a good key for the adhesive as it squeezes in and around.
- Place tiles/pavers using **spacers and string lines** to maintain alignment.
- Position spacers in the top of the **tile-to-tile gap**, so they can be removed later. **Not** at the cross intersection of where four tiles meet.
- 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 the finished surface.



Option 2

Sand or Grout with Geotextile Layer:

- Lay a **geotextile cloth** over the Silca Grates to prevent sand or grout from falling through. Non-woven fabrics are preferred; weed mats may be used if necessary.
- Lay pavers on top and **bind with polymeric sand or grout** as desired. Modern grouts allow flexibility, including **permeable options** for drainage.
- Ensure **deck substructure fall/gradient** for rainwater runoff is pre-established.
- Grouted finishes can combine **Options 1 and 2** by cutting sections in the geotextile for adhesion where required.



Option 3

Dry Lay for Heavy Pavers:

- For sufficiently heavy pavers (e.g., 1.2 × 1.2 m × 60 mm concrete slabs), a **dry lay** may suffice under their own weight.
- Gaps or grout lines may still be required to **accommodate deviations in size, squareness, or gauge**.
- Deck substructure must be **engineer-designed** for large-format or heavy pavers.

ADDITIONAL NOTES – PLEASE READ

- Engage a **qualified and licensed industry professional** for all deck structure design and construction.
- **Do not expose Silca System components to undiluted acids or solvents.**
- **Screws must be tightened firmly but not over-torqued**, to avoid damaging the countersink and compromising the grate's structural integrity.
- Use only the **recommended screws and adhesive** specified in this Install Guide and by Silca System NZ.
- **Do not leave any screw heads, connectors, debris, or packers proud of the grate surface** during tile or paver installation. A flat, consistent surface is essential for proper adhesion and load distribution, particularly with softer natural stone types.
- Install Silca System strictly in accordance with the **Manufacturer's Recommendations** and Install Guide. For technical support, contact **Silca System NZ** info@silcasystem.co.nz or consult our **FAQs** at <https://silcasystem.co.nz/faqs/>.

This Install Guide is provided for professional reference purposes only. Information, diagrams, and instructions are based on current manufacturer recommendations and industry best practices. Users must verify suitability for specific project conditions. Silca System NZ or Merx Pacific Ltd assumes no liability for improper installation, use outside the scope of this guide, or failure to comply with applicable building codes and standards



NOTES, PLANS, SKETCHES:

