SILCA SYSTEM

INSTALL GUIDE

OVER

OUTDURE QWICKBUILD

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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 (Wedi 610 adhesive)
- 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.

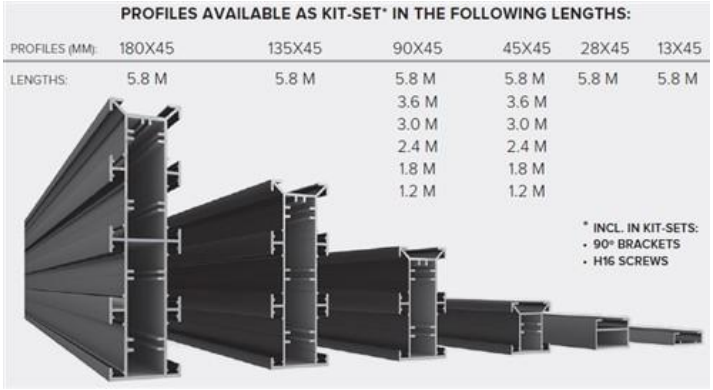
2. Thoroughly Read Installation Guide: Familiarize yourself with the entire installation guide before beginning.

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.



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)

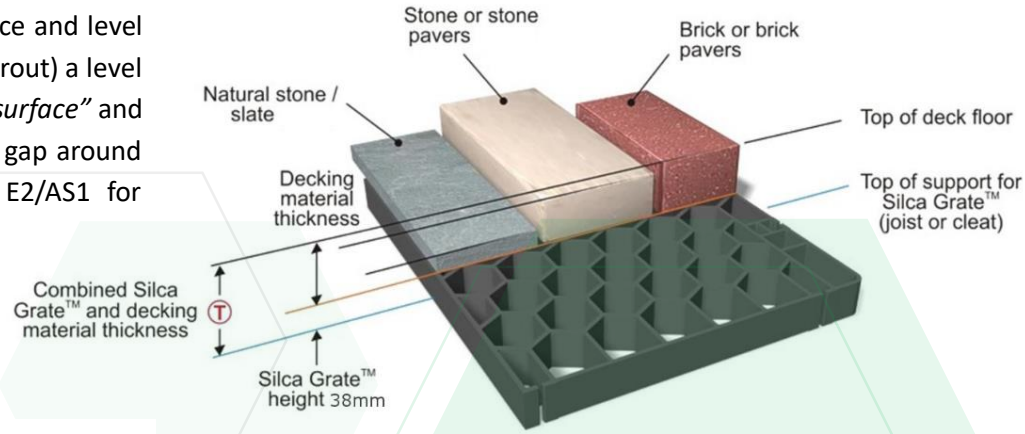
Silca System Grates are 38mm thick.

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

Calculation

FFL - tile thickness - grate thickness (38mm) = 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.)

QWICKBUILD CONSTRUCTION

OUTDURE ALUMINIUM SUBSTRUCTURE FOR FLOATING OVER MEMBRANE OR SLAB

Install your OUTDURE Qwickbuild framing system per OUTDURE's DECK FRAMING SYSTEM DESIGN & INSTALL GUIDES. www.outdure.com

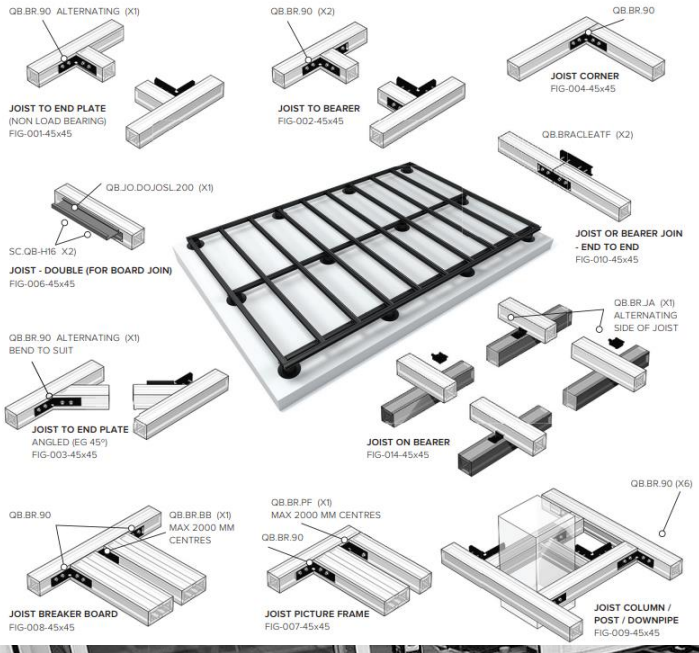
JOISTS spaced at 400mm centres. Silca Grates are designed to help with "creepage" on joist centres and the actual width is 398.5mm. So please keep this in mind when planning your joist layout and installation. An extra-long deck may require correction of centres every so often.

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.

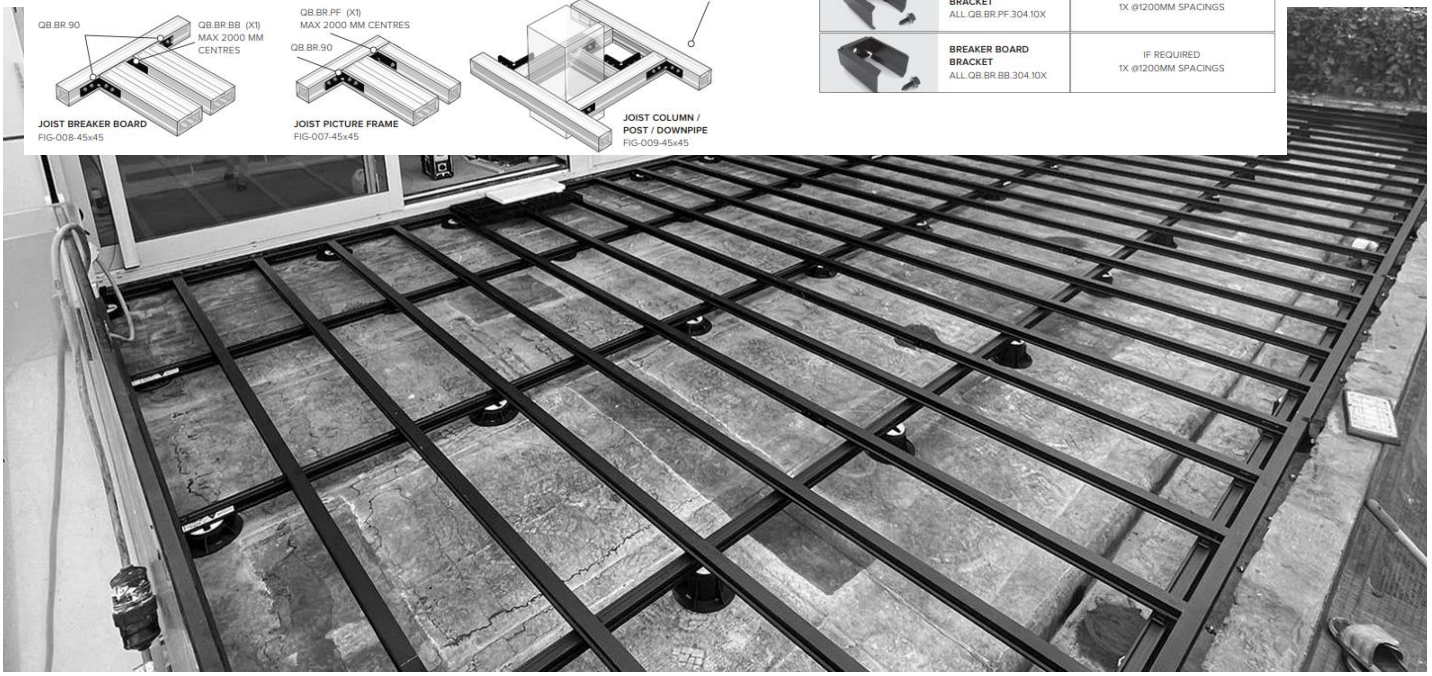
45X45 FRAME COMPONENTS & CONNECTION DETAILS

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



TYPICAL QTY'S BASED ON JOIST CENTRES:
(NO WASTAGE INCLUDED)

FRAME COMPONENTS:	400 MM	450 MM	600 MM
45 JOIST ALL.QB.JO.045X45F	3.3 lm/m2	3.1 lm/m2	2.5 lm/m2
BEARERS: ALL.QB.JO.045X45F ALL.QB.JO.090X45F ALL.QB.JO.135X45F	1.0 lm/m2	1.0 lm/m2	1.0 lm/m2
90 BRACKET ALL.QB.BR.90.304.10X	3.0 p/m2	2.5 p/m2	2 p/m2
JOIST ANCHOR ALL.QB.BR.JA.304.25X	3.6 p/m2	3.0 p/m2	2.5 p/m2
	TYP 1X PER JOIST/ BEARER CONNECTION		
BRACE CLEAT FLUSH ALL.QB.BRACLEATF.10X	AS REQUIRED (2X PER END-ON-END CONNECTION)		
SUPPORTS:			
PEDESTALS POSTS/STUMPS/PIERS/ GROUND SCREWS	1.2 p/m2 TYP 1X PEP 1.2X1.2M GRID AS REQ'D - DEPENDENT ON BEARER SIZE		
SURFACE COMPONENTS:			
PICTURE FRAME BRACKET ALL.QB.BR.PF.304.10X	IF REQUIRED 1X @1200MM SPACINGS		
BREAKER BOARD BRACKET ALL.QB.BR.BB.304.10X	IF REQUIRED 1X @1200MM SPACINGS		



SILCA GRATE INSTALLATION

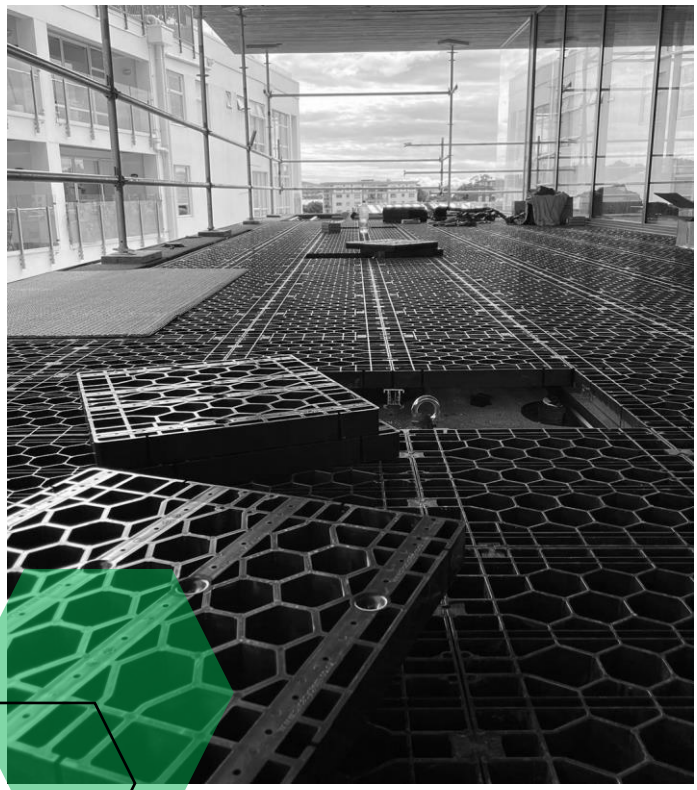
INSTALLING THE SILCA GRATES AND CONNECTORS TO THE TIMBER SUBSTRUCTURE

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.

Silca Grates are designed to help with “creepage” on joist centres and actual width is 398.5mm. The Silca I-Lock Connectors are required for any floating joist system. They lock the Grates very tight to one another, so please keep these tolerances in mind as long runs can actually calculate less.

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

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

Running strings and measuring tolerances of other building elements such as railings, steps/stairs, and door thresholds to achieve optimal tile/paver layout.

TILE/PAVER INSTALL

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

OPTION 1 (Permeable surface)

Glue-fix the tiles/pavers directly to the Silca grates with gaps for drainage, using the recommended Wedi 610 adhesive. This can be supplied upon request.

Spot glue fix the adhesive on and around the connectors, screw head areas, and where the grates but up to the next, with large dobbs about the size of a Powerade bottle cap. These areas provide a good key for the adhesive as it squeezes in and around.

Place down tiles/pavers using spacers and strings to keep them straight and inline.

Tile spacers should be installed sitting in the top of the tile-to-tile gap, so they can be removed later. ***Not*** in the cross + junction 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.

TILE/PAVER INSTALL

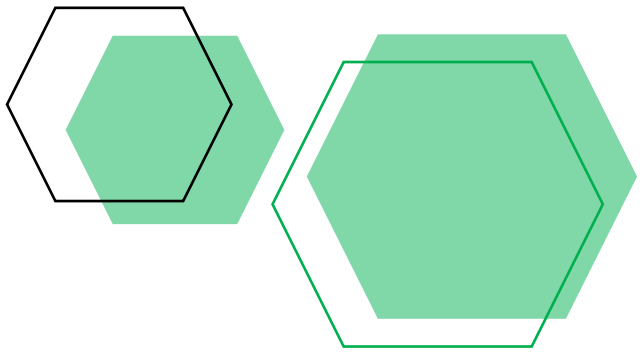
OPTION 2

Lay down a geotextile cloth on top of the grates before installing any pavers. A non-woven cloth is very effective but a basic weed mat can still suffice. It is just to stop the sand or grout from falling through during installation.

Lay your pavers accordingly and bind by sweeping in 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.

Fall for rainwater runoff is required to already be accounted for and constructed in the deck substructure.



OPTION 3

If the pavers are heavy enough e.g. people have used 1.2m x 1.2m x 60mm concrete cast slabs, a simple dry lay can suffice and will stay put under their own weight. Again, design and paver preference comes into play, as a grout line or gap may still be required to hide deviation in paver gauge, squareness, etc.

For pavers this large, the deck substructure would need to be engineer-designed accordingly.

Note: for grouted finishes a combination of both OPTIONS 1) and 2) can be achieved by cutting areas in the geotextile blanket for adhesion during installation.

FINISH WITH PERIMETER TRIM (SITE SPECIFIC)

Install your chosen Border/Facia Type – Timber facia – Tile/paver to match – Aluminium system – Fiber Cement board or similar.

OVER TIMBER DECK FRAME INSTALL

For installation over a timber deck frame, the above install guide still applies.
See our Standard Install Guide here: Silca-System-Install-Guide-2024.pdf (silcasystem.co.nz)

Please refer to our other literature or contact us for further assistance.

NOTE: FOR ALL FLOATING JOIST INSTALLS WE RECOMMEND USING OUR I-LOCK CONNECTORS TO HELP STABALISE THE DECKING ELEMENT.

ADDITIONAL NOTES – PLEASE READ

- Please use an appropriately qualified and licensed industry professional 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)

- Only use the recommended screws and adhesive, noted within this Install Guide.

- Do not leave any screw heads or Connectors or debris/packers proud of the Grate surface during tile installation. Tiles/pavers require a flat and consistent installation onto the grate surface and adhesive for adequate load bearing. Particularly with soft natural stone types.

- SilcaSystem shall be installed in accordance with these Manufacturer's Recommendations and guides. If any questions arise, please contact Silca System NZ or refer to our FAQs at https://silcasystem.co.nz/faqs/

- SilcaSystem or Merx Pacific Ltd. will not be held liable for any variation to these recommendations.

- For all Outdure installation or queries please refer to www.outdure.com