

Date of issue: April 2013.
Revision: Rev 6.1 Q4 2025

Product Description: Silca System interlocking, structural deck grates are specifically designed for the support of heavy finished surface materials over elevated deck structure.

Manufacture: Manufactured by Jakaar Industries Limited – 66 Cryers Rd, East Tamaki. ISO 9001.
 Under advisement by Merx Pacific Limited.

Material: Recycled PC/ABS KB00-BK with UV Stabiliser.

Environmental: Made in NZ from 100% Recycled Materials
 Recyclable at facility. Permeable surface.

Scope of use: Structurally compliant support system for tiles and natural stone over timber or aluminium joist. Silca System Grates provide a stable, ventilated, and permeable substrate suitable for supporting tiles, natural stone, pavers or artificial turf.

The Silca Grates are mechanically locked together on all four sides using Silca Lock Connectors inserted into the alignment slots in each side (x2 per side – av3.3 per Grate), providing increased rigidity and consistent load distribution grate to grate across the decking element.

Mechanical fixing is achieved with x6 10 g × 75 mm 304SS countersunk screws per Grate - fixed through the Grate’s designated screw edge locations into the joist.

Stone, tiles or pavers are adhered with SabreBond SMP 45 polymer adhesive (refer to SabreBond TDS and wind uplift analysis). Gaps are maintained using tile spacers during curing to ensure permeability while meeting wind uplift requirements. Spacers are removed post cure.

Cuts can be made to the grates without compromising the structural system.

Silca System delivers a durable, compliant, and low-maintenance solution ideal for both residential and commercial applications.

Suitable for standard above ground, elevated decks or installations over membrane. Can be specified on structures within the scope of **NZS 3604**.

SILCA GRATES - SPECIFICATIONS

Dimension	398.5 x 450 x 38mm
Material	PCABS - Recycled Polycarbonate ABS with UV Stabiliser
Coverage	0.180m2 (5.5 Units per m2)
Weight per grate	1.814 kg
Floor loading with timber joist (refer to Design Statement and tables)	(2kPa, 1.8kN) to (4kPa, 4.5kN)
Compliance	Clause B1/VM1 and B2 of NZS AS 1720.1:2022, and E2/AS1
Load deflection test (per grate)	5 ton + per unit (spanned)
Load compression test (per grate)	68 ton (with a 400mm2 paver)



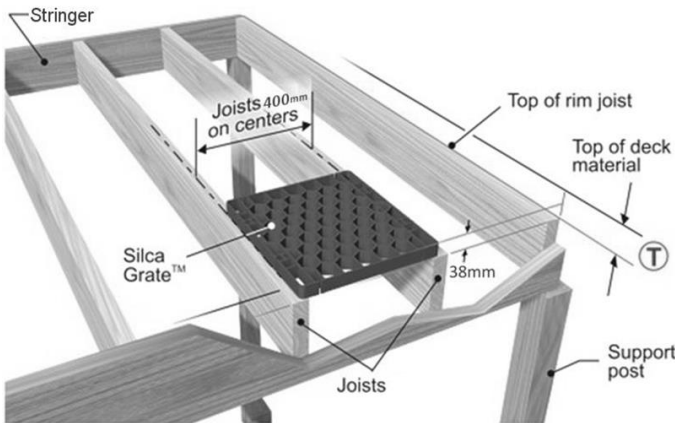
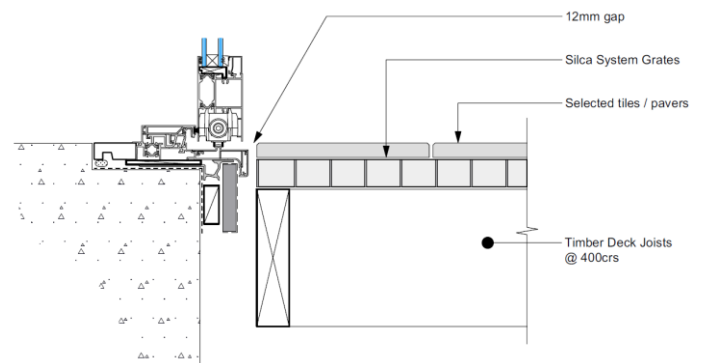
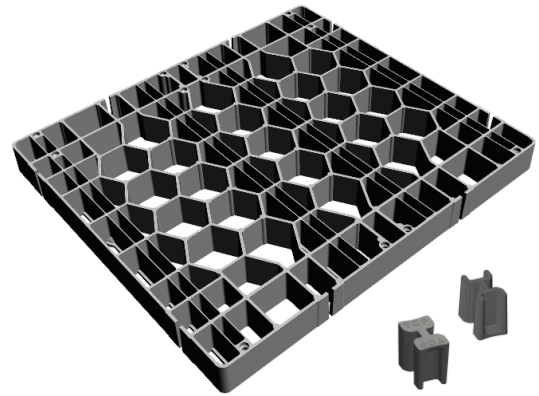
Compliance with NZBC:

Structure – B1: Installed per Silca System Design Statement Specifications and Install Guides, provides an acceptable level of structural integrity and complies with Clause B1/VM1 of AS/NZS1170.1. NZBC.
Floor Loading with timber joist (2kPa, 1.8kN) to (4kPa, 4.5kN) (refer to Design Statement and span tables)

Durability – B2: Installed per Silca System Design Statement Specifications and Install Guides, provides an acceptable level of product durability and meets the requirements of Clause B2 of NZBC.
Silca System Grates and Connectors are manufactured from Polycarbonate (PCABS) with UV Stabiliser additive.
It is manufactured under strict quality control procedures by an ISO 9001-accredited facility.

Permeability – E2/AS1: Silca System provides a suitable support structure on which to install tiles or pavers. Said tiles or pavers installed with a 5mm gap surrounding, complies with E2/AS1 as a permeable surface allowing ‘Level Entry’ through threshold and ‘Permeable site coverage.’

Limitations: Polycarbonate (PCABS) with UV Stabiliser does have strong resilience to chemicals and acids, however as a precaution, it is advised to not wash or store Silca System with *undiluted* strong acids and chemicals.



TILE WIND UPLIFT SUMMARY (Refer to Wind Uplift Summary / adhesive application sheet and SabreBond SMP45 TDS)

Test Reference	Adhesive	Result
Tile Wind Uplift	SabreBond SMP45	119.49 kN/m ² (calculated uplift resistance)

Maintenance to Ensure Permeability: Where permeability is required under E2/AS1, drainage gaps shall be maintained around all tiles, and thresholds to ensure compliant surface drainage performance. Gaps must remain unobstructed and be routinely cleared of organic matter, debris, and silt to maintain designed permeability and prevent hydraulic blockage.

Installation, Resources and Support: Silca System must be installed in accordance with Silca System Technical Specifications, Statements and Install Guides. Available on the website for download: <https://silcasystem.co.nz/resources/> or email to info@silcasystem.co.nz

PACKING

Grates per pallet load	(SP1) = 162
Coverage per pallet load	(SP1) = 29.45sqm
Dimension per pallet load	1.0m x 1.2m x 1.2m H
Weight per pallet load (incl. pallet)	(SP1) = 314kg
Grates per FCL (SP1) (standard 20')	3,564
Pallets per FCL (SP1)	22
Coverage per FCL (SP1) (standard 20')	648 m2

All performance data presented herein is based on information provided by Silca System, Merx Pacific Ltd, and Sabre. Values are derived from manufacturer specifications, test data, and theoretical calculations. Users must verify suitability for specific project conditions. Merx Pacific Ltd assumes no liability for improper installation or use outside the scope of referenced guidelines and standards.

