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Product Description: Silca System interlocking structural deck grates are designed to support heavy finished surface materials over elevated deck structures and can be installed on timber or aluminium joists or pedestals.

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

Material: Silca Grates - Recycled PC/ABS KB00-BK with UV Stabiliser. TreadTech – Aluminium

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

Scope of use:

Silca System installed over a TreadTech Aluminium Framing System is to be read in conjunction with the current TreadTech Technical Specification documentation.

In this application, Silca System grates are mechanically fixed to TreadTech KEFH-60 Aluminium Joists (65 x 45mm), installed at 400mm centres, using 10G x 60mm 410 Stainless Steel Countersunk Square Drive Self-Drilling WingTek screws. Together, the systems create a robust, level and permeable structural support platform suitable for a wide range of exterior flooring finishes.

The combination of TreadTech Aluminium Framing and Silca System provides a durable, lightweight and corrosion-resistant deck structure suitable for residential and commercial applications. Typical applications include balconies, podium decks, rooftop spaces, courtyards and other elevated outdoor living areas where a raised flooring system is required. Silca System distributes imposed loads across the supporting aluminium framing while providing a continuous support surface for the installation of porcelain tiles, natural stone pavers, concrete pavers, artificial turf, GRC planters and other approved surface finishes. The open grate design promotes ventilation and drainage beneath the finished surface while maintaining a solid and stable substrate.

The TreadTech Aluminium Framing System forms the primary support structure beneath the Silca System and shall be installed in accordance with current TreadTech technical requirements. Silca System shall be installed in accordance with current Silca System installation requirements, including fixing patterns and surface recommendations.

SILCA GRATES - SPECIFICATIONS

Dimension	400 x 450 x 38mm
Material	PCABS - Recycled Polycarbonate ABS with UV Stabiliser
Coverage	0.180m ² (5.5 Units per m ²)
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 400mm ² paver)

For further aluminium framing details – refer to the TreadTech Specification Sheet



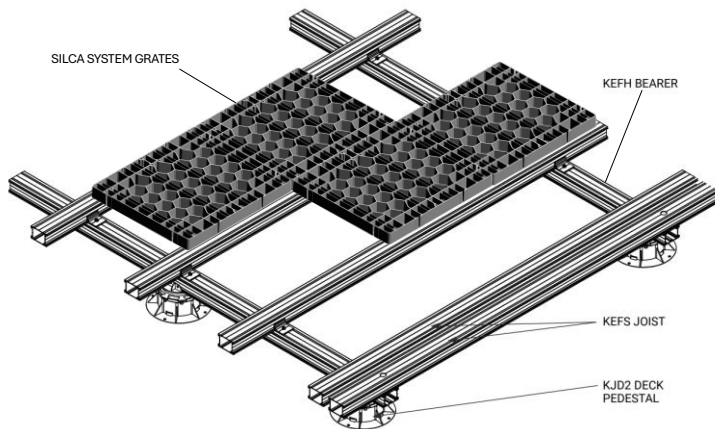
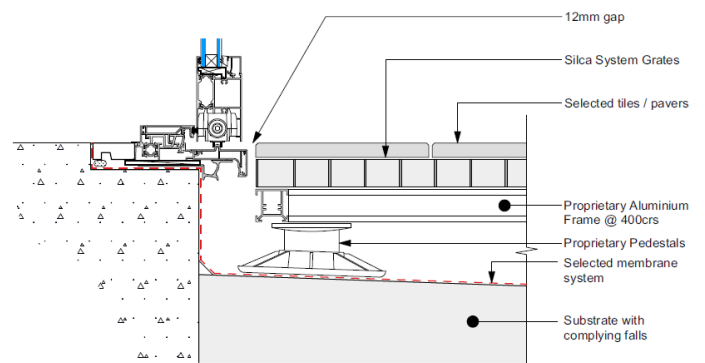
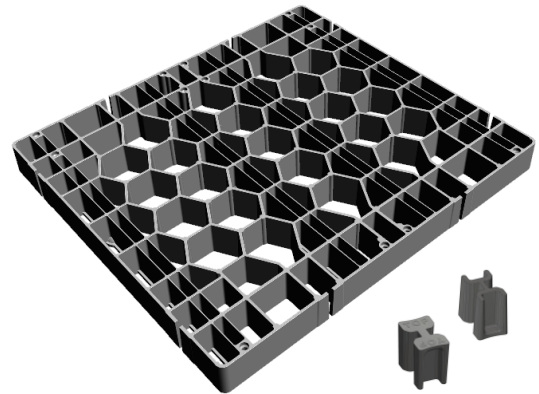
Compliance with NZBC:

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 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

For further aluminium framing details – refer to the TreadTech Specification Sheet

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.

