

Tile on Silca System - Wind Uplift Summary

Adhesive Application Data

Application Zone	Contact Area (m ²)	Qty of Areas	Total Contact Area (m ² /sqm)
Connectors	0.000625	17	0.010625
Screw Head and Housing	0.000144	72	0.010368
Grate to Grate Beads	0.029	1	0.029000
Mid Grate Zig Zag Cell Wall (x2)	0.00036	12	0.004320
Total			0.054313

Adhesive Properties (SabreBond SMP 45)

Property	Value
Tensile Strength (ISO 8339-A)	2.2 N/mm ²
Lap Shear Strength (ASTM D-1002)	1.65 MPa
Ultimate Elongation (S2 Dumbbell)	520%
Consistency	Non-sag

Calculated Wind Uplift Resistance

Metric	Value
Tensile Strength Used for Calculation	2.2 N/mm ²
Total Effective Contact Area	0.054313 m ² per m ²
Theoretical Resistance (N/m ²)	119,488.60 N/m ²
Equivalent Resistance (kg/m ²)	12,184.45 kg/m ²
Equivalent Resistance (kN/m ²)	119.49 kN/m ²

Interpretation

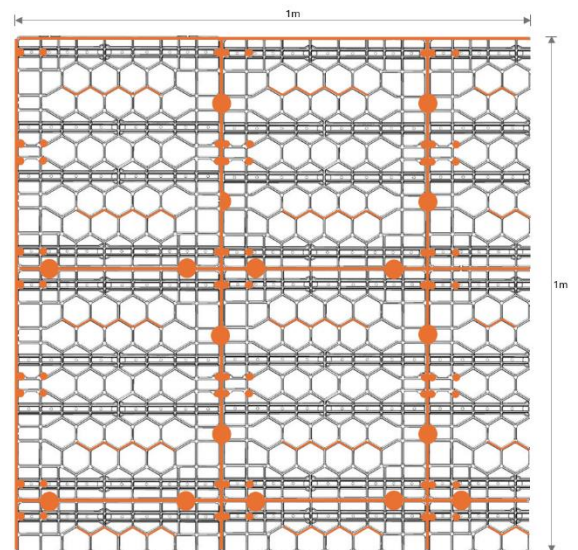
- Values are calculated conservatively based on the nominal surface areas of pre-compression adhesive dobbs and beads applied to the Silca System grates.
- Additional bond area developed through adhesive squeeze-out and tile underside contact has not been factored into the calculations.
- The total adhesive contact area per square metre is approximately **0.054313 m²**, equivalent to a 233 mm × 233 mm square of consistent adhesive bonding.
- Adhesion strength calculations are based on tensile performance figures provided in the SabreBond SMP45 Technical Data Sheet
- Actual bond areas in practice are expected to exceed the calculated values due to real-world bedding conditions.
- Adhesion strength and tensile resistance provided by SabreBond SMP45 exceed standard requirements for external tile installation, ensuring a strong structural safety margin.

Conclusion

Based on conservative assumptions, the Silca System with SabreBond SMP45 adhesive achieves a theoretical uplift resistance of **119.49 kN/m²**, indicating extremely high performance against wind uplift forces.

Adhesive Application Reference Image:

- This application reference image is displayed for data gathering purposes and as a guide for real-world application patterns.
- It shows a typical 1 sqm application of adhesive onto the application areas referenced in the above tables.
- Tiles may interact with a randomized selection of these adhesive points; the scenario has been averaged as a 'typical' case.
- If more adhesive is required (e.g., loading a specific tile corner or smaller tile formats), additional cell walls and bead areas can be better utilized.



Name / Title:		Date:	
Signature:			