

One module. Connections. A system.

Access performance is understood through the modules, their connections and the ground that supports them.

XtremeM combines a one-piece rotationally moulded shell, overlapping edges and mechanical connections. This architecture creates a connected access surface that can be recovered and reconfigured as the project evolves.

Consider the platform, not just the panel

A staggered layout and bolted connections are central to the system. Evaluating load distribution means considering three components together.

The module

Its geometry and stiffness govern its local response to wheel or track contact.

The connections

Overlaps and mechanical connections join adjacent modules. Their behaviour contributes to the response of the assembly.

The supporting ground

Its bearing strength, moisture and deformation influence platform response and operating conditions.

The number of connected modules alone does not determine a bearing-capacity gain. The effective loaded area depends on panel and connection stiffness, the loads and the ground, among other factors.

Three data points, three mechanisms

The original reports document different types of loading. Reading them together supports a configuration suited to the project.

Connections · lateral load

20 metric tonnes

Attested resistance to a lateral load for the system described with at least four connectors.

Signed letter, 13 November 2024. [1]

Compression · local test

828 psi ≈ 5.71 MPa

Pressure measured at 22.5 mm displacement under an 8 × 8 in plate, on a solid area of a specimen.

Cube Automation, October 2016. [2]

Bending · supported panel

7 measured points

Load-deflection pairs recorded on a panel with two supports spaced 4 ft (1.22 m) apart.

COR Engineering, September 2017. [3]

Compression: retain the test context

The test used a 12 × 16 in specimen, loaded on its solid area through an 8 × 8 × 1 in plate. It characterizes the specimen’s local response.

Two reference points from the original report

Pressure	Displacement	Report context
828 psi	22.5 mm	Pressure and displacement recorded together.
948 psi	Not recorded	Pressure subsequently reached before the test stopped.

These results alone do not establish an allowable platform load. The 400 t/m² pressure in the dossier’s technical data sheet is a separate figure (≈ 3.92 MPa), not a conversion of 828 psi. [2]

Bending: the seven original measurements

An 8 in tube applies the load; two 8 in tubes act as supports, spaced 4 ft (1.22 m) centre to centre. The table reproduces the report's values without extrapolation.

Reported load (kg)	Deflection (mm)
1633	8
3382	18
5252	29
7141	50
9091	64
11045	88
12951	118

A single-panel test in this arrangement. It is neither a spanning-capacity rating nor a test of the connected assembly on ground. [3]

Ground conditions and load distribution

The engineering dossier includes finite-element simulations attributed to COR Engineering. They explore the module's response under wheel or track loads and at different CBR values, an indicator of ground bearing strength. The results include relationships between CBR, applied pressure and displacement. [4]

These pages report simulation results, distinct from physical tests. Project use requires confirmation of the model, configuration, contact conditions and acceptance criteria. The available pages do not quantify a bearing-capacity gain from increasing the number of connected modules.

Connections · lateral load

The 20-tonne attestation concerns a lateral load. It does not supply a vertical-load multiplier for a network of modules.

Build the right configuration for your access

01 Define the operation

Loads, wheel or track footprints, traffic, manoeuvres, speed and duration of use.

02 Understand the terrain

Support bearing strength and deformation, moisture, slopes, water flows and seasonal changes.

03 Define the assembly

Module layout, overlaps, connectors, edges and transitions, following the applicable instructions.

04 Validate and monitor

Design-team review, module and connection inspections, and monitoring of operating conditions.

Modules require underlying support. Access selection and water management are designed together at site scale.

Go back to the original documents

The page numbers below refer to the PDF files. The documents are in English and can be accessed below in their original version.

[1] Signed attestation - 13 November 2024

Louis DeGrâce, P.Eng. · p. 1 · Lateral load, electrical resistivity and galvanizing of locking parts.

[2] Engineering dossier - compression

Cube Automation, October 2016 · pp. 9-10. Technical data sheet pressure: p. 3.

[3] Engineering dossier - bending

COR Engineering, September 2017 · pp. 6-7.

[4] Engineering dossier - simulations

Summary of finite-element simulations attributed to COR Engineering · pp. 14-17.

This note supports the reading of the reports. It does not replace installation instructions or a site-specific design approval.

Let's discuss your project

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Base modules are manufactured by Xtreme Matting Corp.