

ALIMATS®

Lightweight and Interlocking Mat Modules



ALIMATS® is a patented modular load spread solution for cranes and powered access. Single day, weekly and long-term hire – with an option to purchase. Nationwide delivery 24/7, and international shipping. Watch our **ALIMATS® videos** here.

Applications

- ✓ Crane Outriggers
- ✓ Concrete Pumps
- ✓ MEWPS
- ✓ Props
- ✓ Scaffolding
- ✓ Scissor Lifts

Features and Benefits

- **Certified** - Fully certified Aluminium system
- **Engineered** - Interlock enables bi-directional load spread
- **Strong** - Section properties enable high load capacity
- **Lightweight** - Mat modules weigh between 13kg and 48kg
- **Handleable** - All modules fitted with handles as standard
- **Adaptable** - Mat sizes 0.33m² up to 8.07m²
- **Safe** - Easy to set up by hand. No need for short rigging or plant



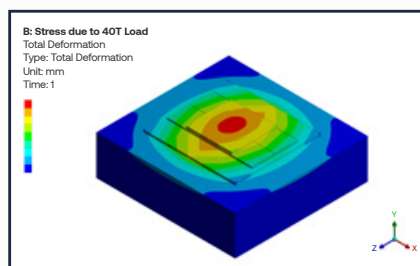
Safer Stronger Solution

We've conducted various types of Finite Element Analysis (FEA) simulations on a variety of mat configurations – considering hard, soft and uneven ground/soil conditions. These were analysed both interlocked; and not interlocked. ALIMATS® come with a patented interlocking design and these simulations highlighted some key benefits.

- The interlock enables monolithic action and enhances bi-directional load spread, which results in more even load distribution and reduced stress values below the mat surface.



INTERLOCK



FEA ANALYSIS



POWERED ACCESS SET UP

Design Considerations and Specification

Outrigger Mat Material

Handleable outrigger mats are generally manufactured from: **Aluminium, Timber, Ultra-High-Molecular-Weight-Polyethylene (UHMW)** and are used to distribute the load of the outrigger to the ground. The suitability of the outrigger mat used is determined by:

- The size of the mat being suitable to distribute the load to the ground at a stress level less than the ground bearing capacity.
- The strength and integrity of the mat and its ability to evenly distribute the load exerted by the outrigger.

Please refer to the table below regarding material property variables.

Properties	Plastic UHMW	Timber Ekki / Azobé (D70)	Timber Oak (D40)	Aluminium ALIMATS®
Mat Density (kg/m ³)	960	1080	660	600
Material Density (kg/m ³)	960	1080	660	2700
Compressive Strength (MPa)	50	34	26	280
Tensile Strength (MPa)	28	42	24	270
Modulus of Elasticity (MPa)	1350	20000	13000	69000

This table highlights the importance that the selected material is actually capable of transferring the load horizontally across the mat surface prior to distribution into the ground.

Timber strength deteriorates with continued use and when exposed to the elements, so certification won't be available at time of use.

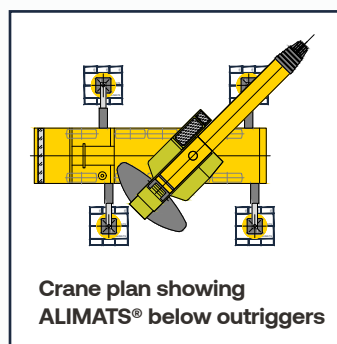
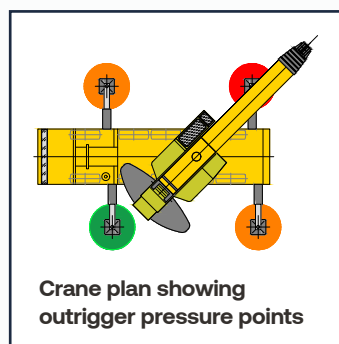
New ALIMATS® Range

Outrigger mat sizes are made up by interlocking ALIMATS® modules together on-site.

Module	Module Dimensions
Mini	580mm x 580mm x 60mm (13kg)
Short	1160mm x 580mm x 60mm (25kg)
Standard	1740mm x 580mm x 60mm (38kg)
Long	2175mm x 580mm x 60mm (48kg)
Extra Long	3480mm x 290mm x 60mm (48kg)

Core Outrigger Mat Available Sizes		
0.33m ²	1.346m ²	2.018m ²
3.028m ²	4.037m ²	5.046m ²
6.055m ²	7.064m ²	8.073m ²

Example | Calculation*



Allowable ground bearing pressure: 25.00T/m²

Weight of crane and counterweight: 83.50T

Weight of load: 5.00T

Hook Block: 1.24T

Max point load: $(83.50 \times 0.75) + 5.00 + 1.24 = 68.87T$

Mat size required: $68.87 \div 25 = 2.76m^2$

Therefore adopt ALIMATS® mat size = 3.02m² *

* Based on a simplistic approach to load spread.

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