

 **Biax**®

The beginning of a new era for foundations.

The Biax® 500 Foundation System (formerly known as Armadillo Foundation System) is a construction technology that builds **robust, cost effective, time effective** and **environmentally aware** waffle slabs.

The Biax® 500 Foundation System is an excellent solution for construction on grounds with poor performance such as **liquefiable, soft or expansive soils** and it has been successfully used for the Christchurch post earthquake recovery program.

An efficient use of land is a paramount for modern cities, the Biax® 500 Foundation System is the ideal option for residential and commercial **buildings up to four storey high**.

By using components exclusively made of recycled polypropylene, the Biax® 500 Foundation System is also **a sustainable alternative** to foundations generating tonnes of polluting polystyrene from void former offcuts every year.

The Biax® 500 Foundation System is protected by international patents:
NZ 625921, AU 2014275575, EU app:14807425, CHINA 201480044297, US 14/895972,
NZ Design Reg.: 421383, 421384, 421385, 421386, 421387



Scan QR Code to
watch a video of the BIAX500 in action





The BIA[®] keystone

The keystones easily interlock with the pods and are equipped with built-in bar retainers.



Emphasis on efficiency.

Efficiency is the key word for us because only by optimizing the resources it is possible to generate cost savings and sustainability. We have focused on the optimization of six key resources: **labour, time, concrete, steel reinforcing, transportation and storage.**

Labour intense activities are eliminated: The installers simply click pods, keystones and the steel into place without ties. The use of steel cages and stirrups is virtually eliminated.

Duration of construction is significantly reduced: The Biax® 500 Foundation System minimizes earthworks and ground improvement works. The easiness of the system allows a working team of 4 people to install 200 m² in a day.

The use of construction materials is optimized: The superior performance of the Biax® 500 design pattern allows savings with the use of concrete and reinforcing steel.

Freight and use of the site are minimized since all components stack neatly into and on top of each other. The components required to construct a building with a floor area of 500 m² can be delivered (and stored on site) using nothing larger than a standard two axis trailer. The equivalent material currently used in waffle floors would require a volume comparable to two 40ft containers.



The best footprint under your building.

Just as your car needs good tyre tread to be safe on the road, your building needs a foundation with a good footprint to be safe on the ground.

The Biax® 500 Foundation System transfers the loads of your building onto the ground minimizing pressure peaks and the risk of settlement.

On the other hand the voided contact patch mitigates potential uplift forces of swelling soils beneath the slab resulting extraordinarily efficient on expansive clays.

Above: The pressure diffusion pattern of a conventional polystyrene waffle slab. No group effect is achieved, the ribs perform as a grid of individual strip footings.

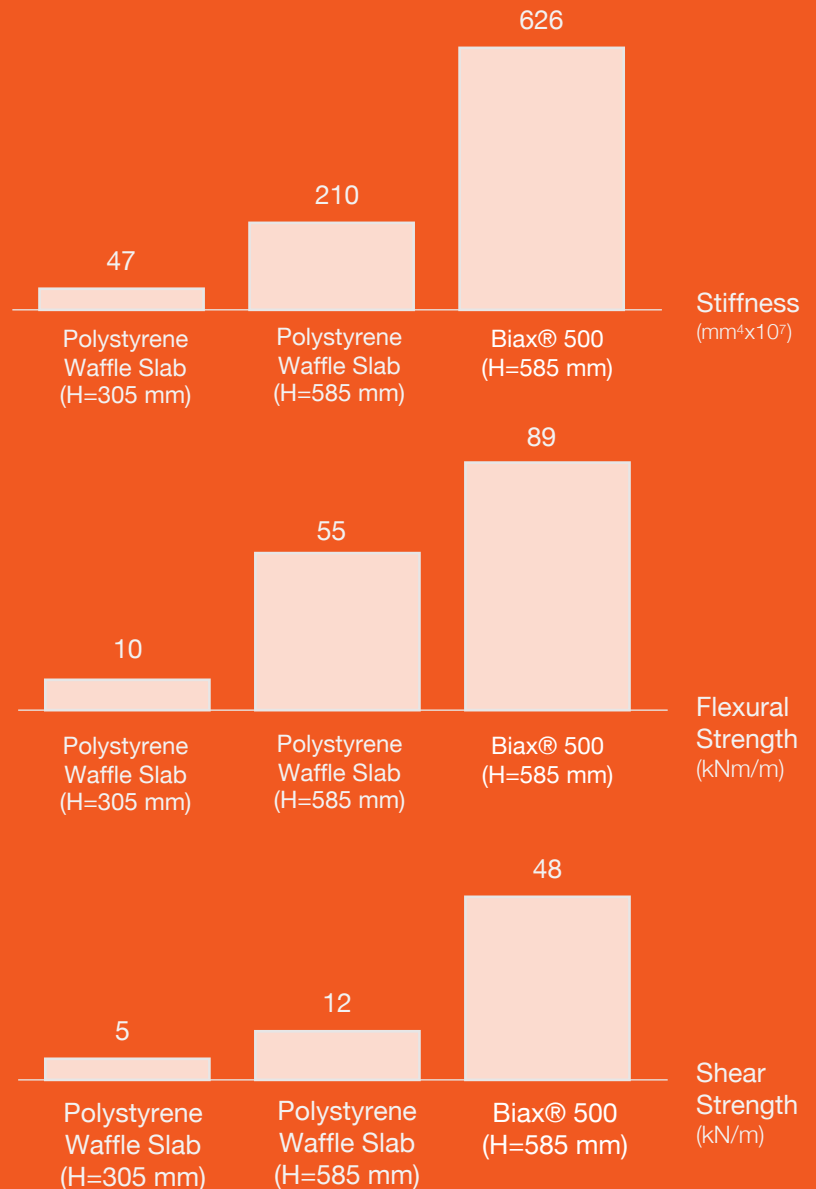
Below: The pressure diffusion pattern of the Biax® 500 Foundation System. The spacing of the ribs is adequate to achieve a group effect and the foundation performs as a floating raft.

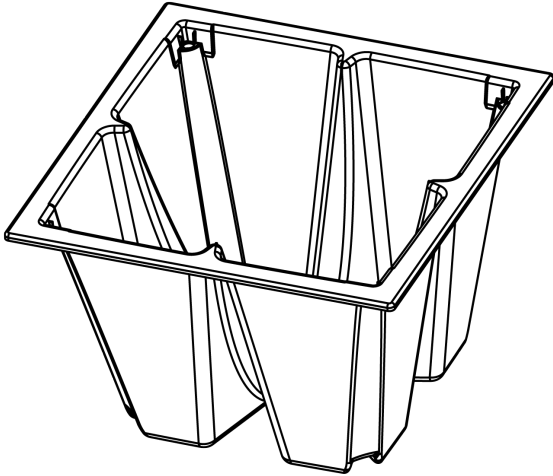
Superior performance across the board.

A stiff foundation designed to perform as a floating raft is able to spread the load of the building on a large footprint and provides protection against deformations induced by ground movements.

Since stiffness and stresses are related, stiffness must always be accompanied with an adequate robustness.

In the Biax® 500 Foundation System the perfect balance of stiffness and strength is achieved by a unique interweaving pattern of the structure.





Biax® 500 pod

The Biax® 500 pod is a sacrificial void former.

The patented design of the Biax® 500 pod shapes the concrete with a unique interweaving pattern of ribs and arcs delivering extraordinary structural performance to the foundation.

The Biax® 500 pod is designed to reduce slab curling and shrinkage cracks, while providing higher quality to the concrete surface.

The Biax® 500 pods are also an effective capillary barrier against moisture across the foundation.

Technical data:

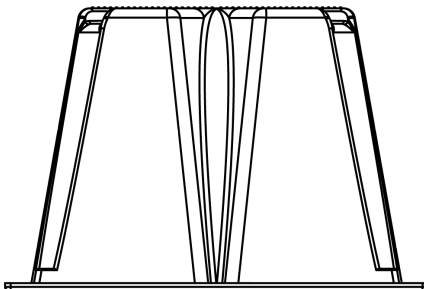
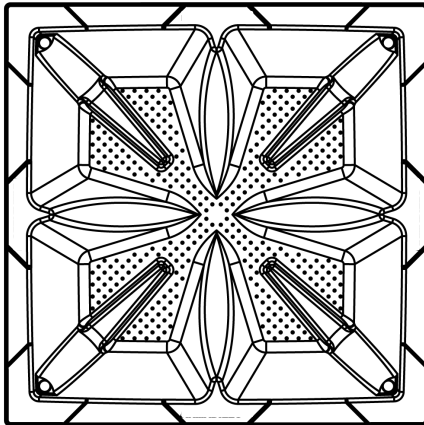
Material = Re-milled Black Polypropylene

L x L x Height = 750 x 750 x 500 mm

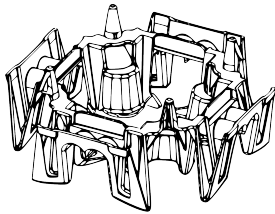
Volume \approx 150 litres

Weight \approx 4,5 kg

Consumption of concrete = 0,32 m³/m²



Product Made in New Zealand



Biax® 500 keystone

The Biax® 500 keystones engage the Biax® 500 pods forming a stable array.

The Biax® 500 keystones also retain the reinforcing steel bars providing adequate concrete cover.

The Biax® 500 keystone has been designed to be perfectly ergonomic and stackable for easy handling and installation.

Technical data:

L x L x Height = 220 x 220 x 120 mm

Weight \approx 120 g

Material = Re-milled Black Polypropylene

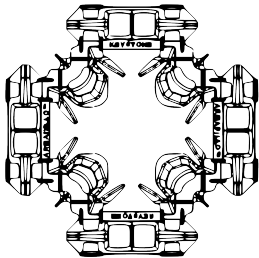
Maximum number of bars = 2 in each way

Maximum diameter of bars = 20 mm

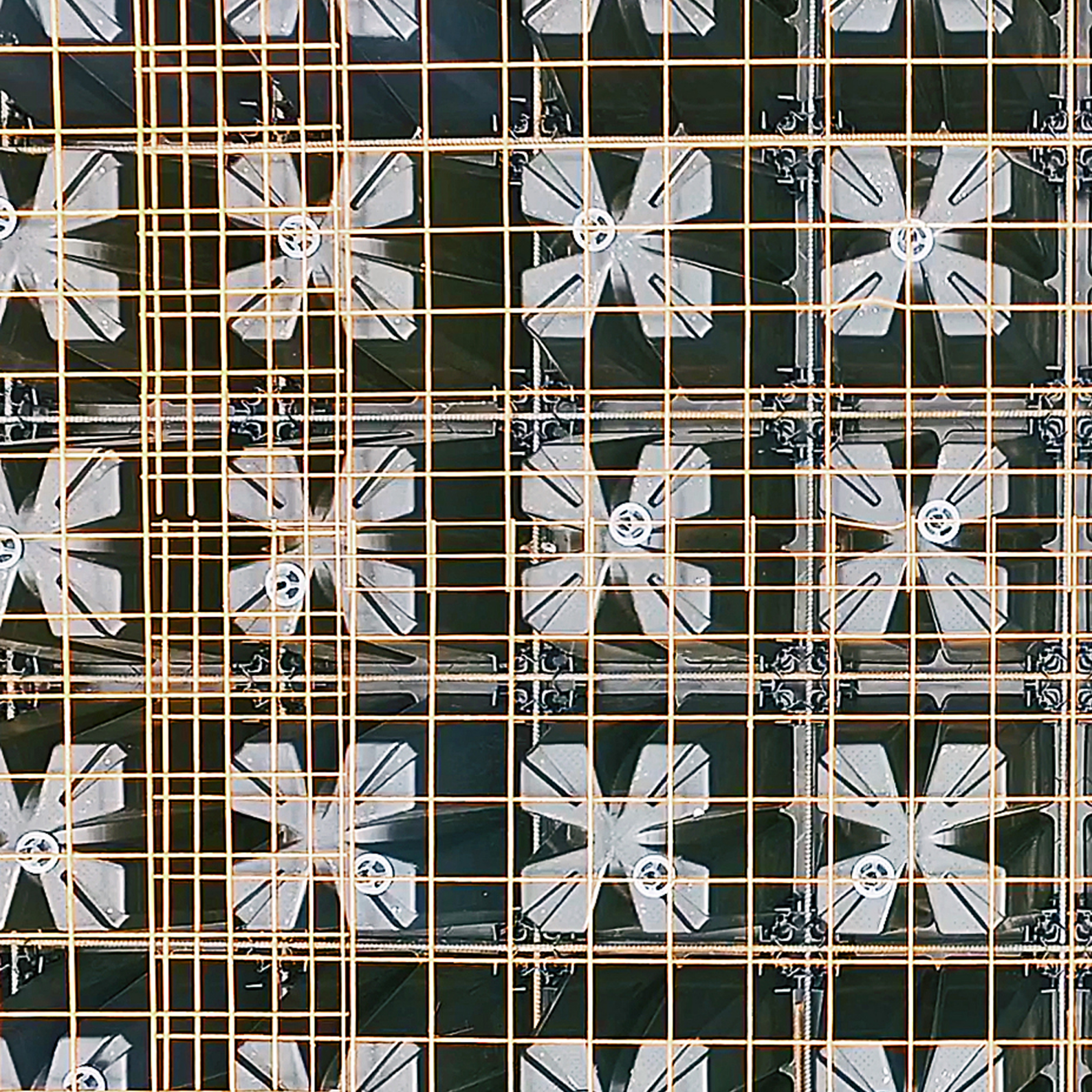
Minimum diameter of bars = 12 mm

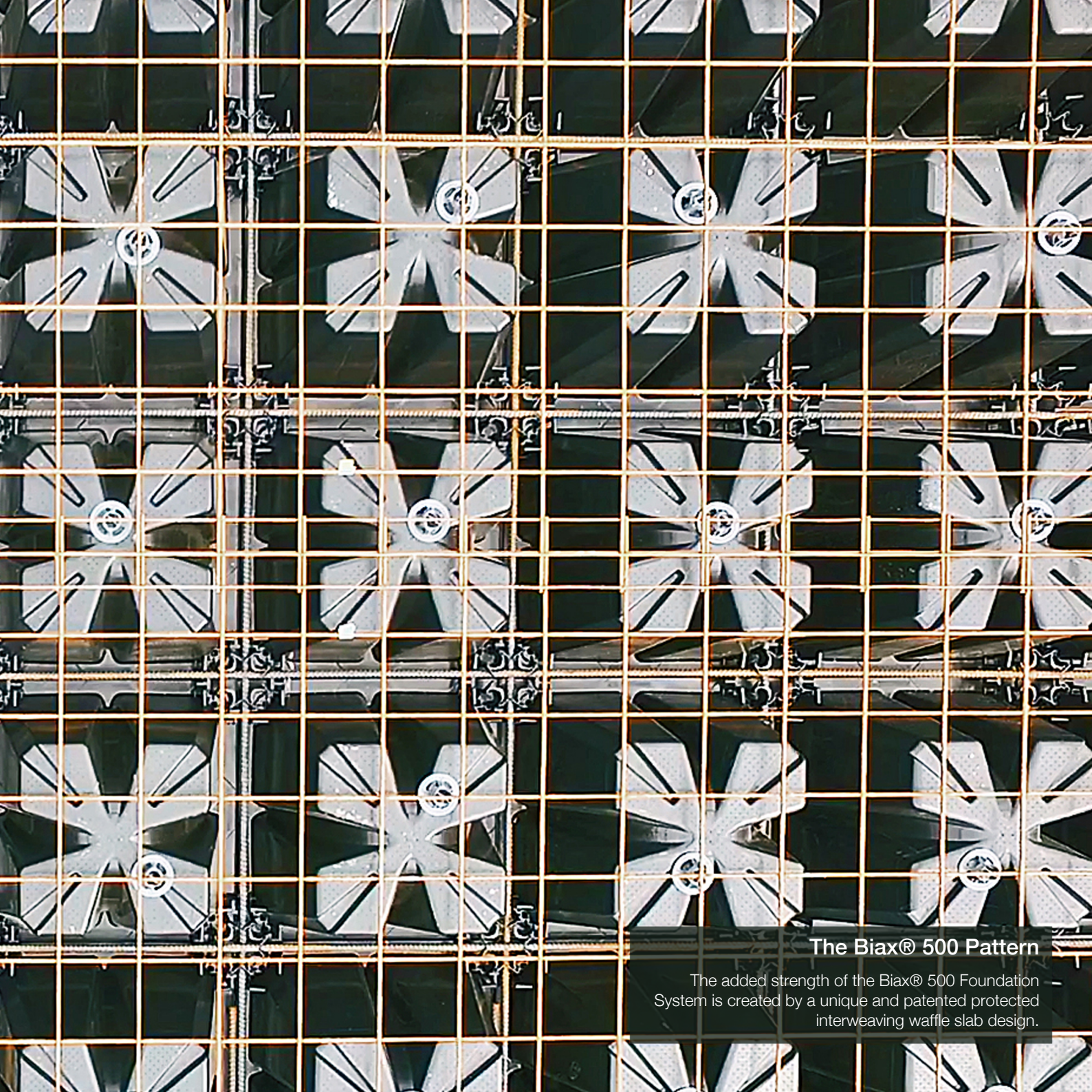
Bottom spacing for cover = 50 mm

Lateral spacing for cover = 35 mm



Product Made in New Zealand





The Biax® 500 Pattern

The added strength of the Biax® 500 Foundation System is created by a unique and patented protected interweaving waffle slab design.

DISTRIBUTED IN NEW ZEALAND BY
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DESIGNED IN ITALY

