

Kalkman Machinebouw, 2921 LE Krimpen a/d IJssel, Netherlands

# Machines for the production of concrete products for 75 years

**Kalkman Machinebouw is part of the Kalkman Group in Krimpen aan den IJssel in the Netherlands. The original family business dates back 100 years. Kalkman Machinebouw has been developing and producing machines and plants for the production of concrete products for 75 years. Kalkman specialises primarily in concrete slabs in all the usual shapes and sizes. Kalkman machines can produce slabs up to 100 x 100 cm in thicknesses from 3 to 10 cm for both the public and private markets.**

Various systems are available, particularly for the flags used in horticulture, which can add value to the products. For example, there is a system that mixes different colours in the covering layer to achieve a mottled appearance. Furthermore, post-processing steps such as sandblasting, brushing, coating, etc. can be added.

## Tamping compaction

The method used by Kalkman to compact the boards is a refinement of the hammering/beating process. The tamping compaction developed by Kalkman can be described as

targeted vertical high-frequency impact. For more than 40 years, this tried and tested method of tamping compaction has proven to be highly effective and reliable.

"A major advantage of Kalkman tamping is that high degree of concrete compaction with a relatively low cement content is achieved in a very short time. 'With hydraulically pressed slabs, this cement content would not be possible,' says Kalkman, explaining the advantages of this special compression process. 'Particularly in this day and age, this advantage of Kalkman compaction means that the carbon footprint is smaller than with most other machines, where more cement is needed to obtain a top-quality slab.'

In Kalkman machines, the slabs are produced face down in the mould. During compaction, the loose steel base plate of the mould (the face plate or form liner) rests on the anvil, creating a very dense covering layer. This can therefore be quickly reworked.

Another advantage of the inverted slab production with a loose base plate is that no conversion is required for a differ-



*Overview of the machine with six stations*



Colour mixing system with silos for five different colours



Tamping machines for compaction

ent slab thickness. When the bottom concrete is poured, the thickness of the slab is determined by raising the base plate more or less in the mould.

For several years now, the freshly produced concrete slabs are turned over immediately, so that the slabs are placed on the pallets with the visible side facing upwards, where they rest during the curing process. This means that the fresh concrete slabs can be inspected directly and any necessary adjustments to the machine can be made immediately.

**Automatic circulation systems**

For more than 70 years, Kalkman has also been supplying automatic circulation systems with pallets on which the concrete slabs can cure in a curing room.

For curing rooms, you can choose between natural curing and accelerated and optimised curing. For the latter, Kalkman collaborates with partners.

Once the panels have cured, they can be finished to obtain an even higher quality product. These post-processing operations include blasting, brushing, coating, washing, printing and more. Kalkman undertakes some of the work themselves, while for others they work with experienced partners.

Finally, the slabs are conveniently packaged in units or packs. Kalkman offers many options here: upright, horizontal, with or without shipping pallet, with or without preparation for machine installation, etc.

The packages can be placed just outside the production hall, either for immediate removal by forklift, for stacking in an intermediate store, or for loading onto lorries to transport larger quantities in one go to the final storage location on the premises. This significantly reduces amount of travelling motions.

With all these possibilities and options, it is no wonder that, for 75 years, many international clients have chosen Kalkman as their partner for concrete slab production for both the public and private markets. Kalkman's customers include well-known companies such as Excluton, Langhout Beton, MBI De Steenmeesters, Morssinkhof Beton, Redsun, Struyk-Verwo (part of CRH) and many other slab manufacturers.



**Machinebouw B.V.**

**Advantages of Kalkman tamping system**

- ✓ Short cycle times
- ✓ 30 - 50 % less cement consumption
- ✓ Thin face mix independent of product height
- ✓ Highest bending strenght and density
- ✓ Low water absorption
- ✓ Low operational and maintenance cost
- ✓ Low material cost by using recycled materials
- ✓ Earlier post-processing possible









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Removing a fresh concrete slab

### The modern Mondrian

The last commissioned plant for the production of concrete slabs up to 100 x 100 cm was delivered to MBI De Steenmeesters in Kampen. The machine can produce two panels (60 x 60 cm) with facing in eight seconds. For the largest 100 x 100 cm slabs, it takes 15 seconds. The machine and the pallet circulation speed is synchronised. The storage capacity in the curing area is 2,960 pallets - more than sufficient for 24 hour production of both slab sizes mentioned.

The slabs look so much like a painting that this concrete plant has been dubbed the 'Modern Mondrian'.

For Ton Pasnagel, Director of Production and Technology at MBI De Steenmeesters, the new product range is "a ground-breaking revolution" in decorative concrete products. The modern concrete plant, which is also one of the sustainability leaders in Europe, has completely redefined not only the standards, but also the aesthetics of MBI concrete

products. 'This revolutionary process provides unparalleled versatility by combining five colours in the covering layer. This is how we create breathtaking colour schemes that were previously unimaginable,' explains Ton Pasnagel.

The demand for panels produced by the Kalkman machine has increased so rapidly that it became necessary to work multiple shifts sooner than expected. "As the supplier of this "Modern Mondrian", we see this as a great compliment and reward in a market where consumers are becoming increasingly demanding," summarises the Managing Director of Kalkman Machinebouw, Wim Kalkman, with great satisfaction. ■

### FURTHER INFORMATION



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Sample slabs

