

# Cement-based Joint Mortar for Paving Stones and Flagstones

## Properties and application areas:

BOTAMENT® Garden ZF is a paving joint mortar for external paving with a precipitation of up to 5 %. It is suitable for the slurry application method and for jointing natural stone paving, concrete block paving and flagging for garden paths, domestic entrances and terraces.

## Substrate preparation:

The entire structural design including carrier base, bedding and paving must be fit for purpose with regard to its expected loading. Loose sitting stones must be stabilised, drain inlets must be made safe against penetrating joint material.

The joints must be thoroughly cleaned before the bedding mortar cures. Natural stones with a rough surface, artificial stones or very absorbent paving stones must be thoroughly pre-wetted prior to application of BOTAMENT® Garden ZF. Standing water in the joints must be avoided.

## Application:

BOTAMENT® Garden ZF is added to clean, cold water and is stirred continually with a slow-rotating agitator. To mix a sack of 25 kg approximately 3.75 litres of water are required; mix until a homogenous mass of uniform colour has formed. After a maturing time of 3 minutes the material is briefly stirred again.

The material should always be prepared using the same proportions, as differing water/cement ratios can result in slight colour variations.

BOTAMENT® Garden ZF must be processed within 15 minutes. Material that has started to set must not be stirred or applied again, as this may be detrimental to reaching the final strength.

BOTAMENT® Garden ZF is inserted into the joints with a rubber squeegee or float. The excess joint mortar is then removed diagonally to the joint profile. As little material as possible ought to remain on the stone surface so as to make the clean-up easier.

Immediately after the joint mortar starts to set the cover is washed in diagonal direction to joint profile making sure not to wash out the joints. Re-

place the wash water frequently with clear water and repeat this process until the residual laitance has been removed completely. In large projects we also recommend using an electric grout sponge cleaner.

Alternatively to washing the surface, the grouted cover may either be cleaned using a hard broom or a cleaning machine with a brush attachment.

## After-treatment:

The freshly grouted area must be protected from very strong heat, particularly from strong sunlight, strong winds or draughts by taking suitable measures. If in doubt, subsequent wetting of the area with clean water aids an even curing process.

## Tips:

All processing times and technical data are based on a temperature of +23 °C and 50 % relative humidity, unless otherwise stated. Higher temperatures and lower humidity accelerate, while lower temperatures and higher humidity delay processing time and curing. Higher layer thicknesses also delay the curing process.

High substrate moisture or where substrate and tile shoulders show great differences in absorbency, colour variations can occur. Discolouration may be caused by adjoined soiled building structures or by soiling in the mixing or wash water.

Mortar remains may deposit in the micro pores of the cover surface. For this reason, if in doubt, carry out a test joint grouting first.

Where aggressive waters that attack cement (DIN 4030) are present that may impair the joint mortar it is advisable to contact the department Application Technology prior to installation.

Based on the raw materials used slight colour variations may occur between batches. We therefore recommend using only material from one batch on a given area.

The technical data sheets of all products used in combination with BOTAMENT® Garden ZF must be observed.

The safety data sheet is available up-

# BOTAMENT® Garden ZF

- For joint width up to 5 mm
- Water-impermeable  
(WTA datasheet E-5-21-09/D)
- Can be mixed to a slurry
- Cures crack-free
- For interior and exterior areas

# BOTAMENT® Garden ZF

**Material basis:**  
modified cement mortar

**Colour:**  
sand grey

**Density (Fresh mortar):**  
approx. 2.10 g/cm<sup>3</sup>

**Grain size:**  
0.1-1.3 mm

**Compressive strength:**  
after 1 day: > 4 N/mm<sup>2</sup>  
after 7 days: > 30 N/mm<sup>2</sup>  
after 28 days: > 30 N/mm<sup>2</sup>

**Bending tensile strength:**  
after 1 day: approx. 2 N/mm<sup>2</sup>  
after 7 days: > 4 N/mm<sup>2</sup>  
after 28 days: approx. 7 N/mm<sup>2</sup>

**Joint width:**  
Up to 5 mm

**Joint depth:**  
at least 30 mm for paving stones  
at least 10 mm for tile covers

**Mixing ratio:**  
25 kg BOTAMENT® Garden ZF:  
approx. 3.75 litres of water

**Processing time:**  
approx. 15 minutes

**Application temperature:**  
from >+5 °C to +25 °C

**Walkable:**  
after approx. 2 hours

**Fully loadable:**  
after approx. 2-3 days

**Cleaning:**  
While fresh with water.  
After curing with cement laitance  
remover.

## Cement-based Joint Mortar for Paving Stones and Flagstones

on request or can be found on our  
website.

To achieve optimum results and to  
avoid discolouration of natural stones  
we recommend conducting a site-  
specific test sample prior to applica-  
tion.

### Use of cleaning agents:

Very acidic cleaning agents may dam-  
age joints. If you have any queries,  
please contact the department Appli-  
cation Technology.

### Consumption:

For joint widths of 5 mm and joint  
depths of 30 mm.

#### Mosaic paving

- 40 x 40 mm: 13,7 kg/m<sup>2</sup>
- 50 x 50 mm: 11,4 kg/m<sup>2</sup>
- 60 x 60 mm: 9,7 kg/m<sup>2</sup>

#### Small paving stones

- 100 x 80 mm: 6,7 kg/m<sup>2</sup>
- 100 x 100 mm: 6,1 kg/m<sup>2</sup>
- 120 x 100 mm: 5,5 kg/m<sup>2</sup>

#### Large paving stones

- 160 x 160 mm: 4,3 kg/m<sup>2</sup>
- 160 x 180 mm: 4,0 kg/m<sup>2</sup>
- 180 x 180 mm: 3,7 kg/m<sup>2</sup>

#### Tile covers

- 200 x 200 mm: 3,1 kg/m<sup>2</sup>
- 300 x 300 mm: 2,5 kg/m<sup>2</sup>
- 600 x 400 mm: 1,6 kg/m<sup>2</sup>

The consumption quantities stated are  
average amounts. Deviations from  
these amounts are therefore possible  
due to site-specific conditions.

### Packaging:

25 kg paper bag

### Storage:

Cool and dry. Minimal shelf-life at least  
12 months in its original sealed con-  
tainer.

### Regulations and guidelines:

The following regulations, datasheets  
and guidelines must be followed in  
their respective current versions:

- DIN 18318:2006 Construction works  
for traffic lanes - stone and tile  
pavements without binding elements,  
kerbsides
- DIN EN 1341:2001 paving slabs  
made from natural stone for outside  
areas – requirements and test meth-  
ods
- DIN EN 1342:2003 paving clinker  
made from natural stones for outside  
areas – requirements and test meth-  
ods
- DIN EN 1338:2003 paving stones  
made from concrete – requirements  
and test methods
- DIN EN 1344:2003 paving clinker –  
requirements and test methods
- ÖNORM B 2214, paving works,  
standard contract of services
- Additional technical contract terms  
and conditions and guidelines for the  
construction of paved surfaces and  
tiled covers
- Additional technical contract terms  
and conditions and guidelines for ex-  
cavations in road construction
- Additional technical contract terms  
and conditions and guidelines for  
load-bearing layers in road construc-  
tion
- Guidelines for the standardisation of  
superstructures of traffic surfaces
- WTA Datasheet E-5-21-07/D Bound  
construction – traditional paving