

plus Color  
**vdw 400**

## Cement Based Jointing Mortar

For light to heavy traffic loads



Cement-based, polymer-modified, rapid-hardening joint mortar for the jointing of natural stone sets and concrete block paving for interior and exterior areas with light to heavy traffic loads.

- Waterproof
- High freeze/thaw resistance
- Very free flowing
- Self-compacting
- Suitable for narrow joints from 3 mm
- Early pedestrian access and loading
- Compressive strength of 45 N/mm<sup>2</sup>
- Ecological

- Sand beige



- Grey



- Anthracite



*MPA tested!*

**GftK**

Quality for Professionals

## Product and Application Information



### Requirements:

A stable substrate, joint depth to be the full height of the block, a minimum of 40 mm in areas without vehicle traffic, min. joint width 3 mm, preferably 5 mm, maximum 25 mm, paved area temperature for application and curing  $\geq 5^{\circ}\text{C}$ ,  $25^{\circ}\text{C}$  max.

### Tools:

Free fall – preferably a forced action paddle mixer, suitable drill and mixing for small volumes, water/hose, adjustable spray or fan type nozzle, rubber squeegee, stiff bristled brush, sponge, floor washing equipment/machine.

### Preparation:

Ensure the paving is stable with no loose stones/blocks and that the joints are correctly dimensioned. Protect gullies to prevent penetration of joint mortar. Clean the surface of the paving area to remove all bedding residues. Remove any loose materials.

### Test area:

On natural stone setts and concrete block paving, contact between the vdw 400 plus Color and the block surface may result in visual changes such as darkening and/or spotting. We generally recommend applying a test area first.

### Wetting:

Wet the areas. The surfaces of natural stone setts with a rough finish, reconstituted stone paving or absorbent paving blocks must be thoroughly soaked, saturated, before applying vdw 400 plus Color. Avoid water puddling in the joints.

### Mixing the joint mortar:

Pour 4.5–5.0 litres of water per 25 kg bag into a clean mixing vessel. Add the vdw 400 plus Color and mix for about 2 minutes to obtain a smooth, uniform and pourable mortar. Leave to rest for about 2 minutes and mix again briefly (for about 30 seconds).

### Grouting the joints:

Pour the mortar onto the surface, spread evenly over the paving with a rubber squeegee and slurry into the joints. Work the mortar in so that the joint cross-section is completely filled. Strike-off surplus joint mortar with the squeegee.

### Cleaning:

Warning: Do not allow the joint mortar to harden too much on the paving surface. After a hardening time of about 25 minutes at  $20^{\circ}\text{C}$  (checked by a joint pressure test), wash the paving clean diagonally to the joint cross-section using floor washing equipment/machine, or a stiff brush with a hose and spray or fan type nozzle – without washing out the joints. Finally, clean the paving surface again with a hose spray and locally with a sponge to remove any final residues.



## Technical Data

### Product Description

Cement-based, polymer-modified, rapid-hardening, waterproof joint mortar, with graded aggregates.

Binder:	Selected special cements, low-chromate to TRGS 613	
Aggregate particle size:	0.1 – 0.5 mm	
Joint width:	Minimum 3 mm, preferably 5 mm; for joint widths $\geq$ 15 mm, the jointing depth must be at least twice the joint width	
Joint depth:	Minimum 40 mm; for areas with vehicle traffic: full block height	
Packaging:	25 kg bags	

### Material data

Density:	ca. 2,0 g/cm <sup>3</sup>	
Compressive strength:	After 24 hours	ca. 10 N/mm <sup>2</sup>
	After 7 days	ca. 35 N/mm <sup>2</sup>
	After 28 days	ca. 45 N/mm <sup>2</sup>
Water permeability:	Non-permeable	
Storage life:	9 months stored in a dry place away from frost	

### Application data

Added water:	4.5–5.0 litres per 25 kg bag
Pot life:	ca. 15 minutes at 20°C after mixing
Ambient and substrate temperature:	> + 5 °C, max. + 25 °C

### Product safety

Product safety information:	R phrases: 36/38
Safety advice:	S phrases: 2, 22, 25, 26, 37/39

### Ecology

Water hazard class:	Class 1
Disposal code:	170101, 101314

## Packaging

Colours	Verpackung (Sack)	Artikel-Nr.
Sand beige	25 kg	400003.825
Grey	25 kg	400004.825
Anthracite	25 kg	400005.825



## Consumption

The consumptions stated in the table below refer to coursed pavements of natural stone setts with cropped or riven edges and have been compiled from our experience. The natural shape of setts and different paving designs, or laying techniques may result in variations to these values. If in doubt, determine the actual consumption on a test area. The consumptions stated below apply to a joint depth of 10 mm and must be multiplied by the actual depth (i.e. min. 30/40mm).

	Dimensions in mm		Approx. kg/m <sup>2</sup> per 10mm depth, for joint widths			
	Width	Length	3 mm	5 mm	10 mm	15 mm
<b>Sett paving</b>	160	180	0.7	1.1	2.2	3.3
	140	180	0.7	1.2	2.4	3.5
	120	160	0.8	1.3	2.6	3.8
<b>Block paving</b>	100	120	1.1	1.7	3.4	4.8
	100	100	1.2	1.9	3.6	5.2
	80	100	1.3	2.1	4.0	5.8
	60	80	1.7	2.7	5.1	7.2
<b>Mosaic paving</b>	40	40	2.8	4.4	8.0	10.9
	50	50	2.3	3.6	6.7	9.2
	40	60	2.4	3.8	6.9	9.5
<b>Slab paving</b>	600	400	0.2	0.4	0.8	1.2
	400	400	0.3	0.5	1.0	1.5
	300	300	0.4	0.7	1.3	1.9
	200	200	0.6	1.0	1.9	2.8

## Sample Bill of Quantities

Item

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Clean out the joints to 4 cm minimum or the full joint depth.  
Clean the surfaces.

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Prepare according to the manufacturer's instructions, spread fully over the wet surface and work well into the joints with a rubber squeegee. Strike-off any surplus mortar. Wash down with floor washing equipment/machines, or a stiff brush and hose with a spray or fan type nozzle. Then clean the paving surface again with a fine water jet. Follow the manufacturer's technical recommendations and application instructions.

**Manufacturer:**

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# Application Instructions

## Substrate

**vdw 400 plus Color** Cement Based Jointing Mortar is a jointing material and cannot absorb settlement from the substrate. The substrate, supporting structure and surfacing must be designed to accommodate the anticipated traffic load.

### The following regulations, guidelines and technical information sheets must be followed:

- Additional Technical Contract Conditions and Guidelines for the Construction of Pavement and Paving (ZTV P-StB 2006, 2006 edition)
- Additional Technical Contract Conditions and Guidelines for Ground Works in Road Construction (ZTVE-StB 94, 97 version)
- Additional Technical Contract Conditions and Guidelines for Base Courses in Road Construction (ZTVT-StB 95, 2002 edition)
- Guidelines for Standardisation of the Surfacing of Paved Areas (RstO 01)
- DIN 18299 – General Rules applying to all types of construction work (December 2002)
- DIN 18318 – Road Construction – Dry jointed sett and slab pavements, and surrounds (April 2010)
- Technical information sheet – Natural stone sett and slab pavements for road surfacing (DNV April 2002)
- Working Paper – Paving with sett and slab pavements, bound type (FGSV 2007)
- WTA technical information sheet E 5-21-07/D – Bound construction method – Historic paving (May 2009)

### Bedding:

- **Pedestrian load:** Sett or slab paving may be laid in a stable sand or chipping bed. It is better to lay sett or slab paving in a free draining concrete or mortar bed; we recommend **vdw 480 Bedding Compound** or **vdw 490 Trass Drain Mortar** and **vdw 495 Bonding Slurry**.
- **Vehicle load:** Sett or slab paving must be laid in a free draining concrete or mortar bed, we recommend **vdw 490 Trass Drain Mortar**.

### Joints:

- **Minimum joint depth:** The minimum joint depth for **vdw 400 plus Color** is the full block height, at least 40 mm in areas without vehicle traffic.
- **Minimum joint width:** The joint width for **vdw 400 plus Color** is 3 mm minimum, preferably 5 mm, 25 mm maximum.
- The jointing depth for joint widths > 15 mm must be at least twice the width.
- Movement joints must be positioned according to the Safety Principles. Joints from the substrate must be incorporated. Use a suitable flexible joint compound.

## Important

- Experience has shown that some types of block can discolour after cement based jointing.
- We generally recommend applying a **test area**. Test areas represent reference areas. Critical paving types must be cleaned very thoroughly afterwards. Darkening may occur in sensitive or highly absorbent slabs such as granite and sandstone due to rising damp from the bedding.
- Variations in mix water quantities and moisture levels can lead to shade differences in the joint. This is not a quality defect.
- Differences in colour between the various vdw mortar products are unavoidable due to different minerals, binders and aggregates. Colour reproductions in the product information packs are only an indication and only approximate to the original colours of the vdw joint mortars.

## Preparation of jointing area

- Clean the surface of the paving area thoroughly to remove all bedding mortar residues before jointing.
- Check the minimum joint depth and adjust if necessary by blowing with a compressed air or water jet.
- Tape adjacent areas not being paved.
- Protect gullies to prevent entry of the jointing mortar.



# Application Instructions

## Material preparation

- Pour 4.5–5.0 litres of clean, cold water into a forced paddle/free fall mixer
- Add **vdw 400 plus Color** and mix for 2 minutes to obtain a homogenous, pourable mortar
- Leave for a further 2 minutes and mix again briefly (for about 30 seconds).

## Application

- A minimum temperature of +5°C, max. 25°C, is required for application.
- Protect adjacent areas not being paved.  
Wet the paving surfaces. The wetting level is dependent on the block absorbency and the temperature. Avoid puddling in the joints.  
Concrete block paving and absorbent blocks should be soaked the day before jointing; they must be wetted again before applying the paving joint system.  
Apply the ready-mixed **vdw 400 plus Color** onto the wet surface.
- Spread the mortar fully over the paving with the rubber squeegee and work well into the joints. Apply the mortar so that the joint cross-section is completely filled. If necessary, grout again with fresh mortar when the mortar has gone off in the joint.
- Remove surplus joint mortar immediately with the rubber squeegee. When the fresh mortar has been left for a suitable period, wash the paving down diagonally to the joint cross-section using floor washing equipment/machines, or stiff brush with a hose and spray or fan type nozzle – without washing out the joint surface. Then finally rinse clean the paving surface with a water jet
- Pot life is about 25 minutes. Times apply to + 20°C and 65 % relative humidity.
- **Warning:** Do not allow the joint material to harden on the paving surface.
- Material which has hardened on the surface can only be removed mechanically!

## Application Instructions

### Curing

The following points apply to a temperature of 20°C and 65% relative humidity (high temperatures shorten and low temperatures lengthen the curing period).

- Protect the freshly applied mortar from sunlight, draughts, frost and temperatures < 5°C and > 30°C.
- Barrier off the newly treated areas for at least 4–6 hours. They are then accessible to limited pedestrian traffic.
- Protect the newly treated areas from heavy rain for at least 12 hours. Do not lay protective sheeting directly on the surface, provide ventilation underneath.
- The areas are usable by limited pedestrian traffic after 4–6 hours and by limited vehicle traffic after 48 hours, they can be fully loaded after 7 days.
- In principle, a strength test should be carried out before putting into service.

### Cleaning the tools

The tools can be cleaned with water while the mortar is fresh and mechanically when it has cured.

## Safety Information

### Health and Safety:

- When using **vdw 400 plus Color**, avoid contact with skin and wear goggles and protective clothing such as gloves etc.

## Ecology

### Disposal:

- Keep the product away from the drainage system.
- Mixed, cured material is an inert product and does not require special disposal.
- Empty containers can be taken to the nearest Repasack (in Germany) collection point.
- Product information can be found on the label and the safety data sheets.
- Allow to harden before disposal.

Rheinbach-Flerzheim, January 2011



## Product Range

### vdw Paving Jointing Mortars

<b>vdw 400</b>	<b>Cement Based Jointing Mortar</b>	For medium traffic loads, waterproof
<b>vdw 400 plus</b>	<b>Cement Based Jointing Mortar Color</b>	For light to heavy traffic loads, colored, waterproof
<b>vdw 800</b>	<b>Epoxy Pavement Jointing Mortar</b>	High performance for light to medium traffic loads
<b>vdw 805</b>	<b>Epoxy Pavement Jointing Mortar</b>	High performance for light to medium traffic loads Suitable for narrow joints from 3 mm
<b>vdw 815</b>	<b>PlattenfugenMörtel</b>	For light to medium traffic loads
<b>vdw 830</b>	<b>Epoxy Pavement Jointing Mortar Color</b>	For light to medium traffic loads
<b>vdw 840 plus</b>	<b>Paving Joint Mortar/Grout</b>	For pedestrian areas
<b>vdw 850</b>	<b>Epoxy Pavement Joint Mortar</b>	High performance for medium traffic loads
	<b>Self Compacting</b>	
<b>vdw 855</b>	<b>Heavy Duty Joint Mortar</b>	High performance for heavy traffic loads
	<b>Self Compacting</b>	
<b>vdw 870</b>	<b>FugenFestiger</b>	For pedestrian areas
<b>vdw 950</b>	<b>StoneCare plus 3 in 1</b>	Liquid stone protection, water and oil repellent

### Contact

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