

Fast-setting screed cement

PCI Novoment® Z1

for fast track screeds

PCI®  
Für Bau-Profis



### Fields of application

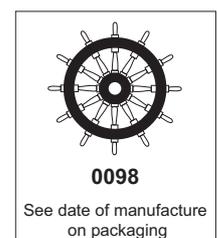
- For indoor and outdoor use.
- For producing fast track
  - screeds on an isolating layer or insulating layer
  - bonded screeds.
- Suitable for heated screeds.



PCI Novoment Z1 enables screeds to be walked on after approx. 3 hours and ceramic tiles after approx. 1 day.

### Features and benefits

- Can be tiled after approx. 1 day and walked on after approx. 3 hours.
- Excellent water binding, low shrinkage, retaining its shape. Therefore perfectly suitable also for the fast-track and reliable production of screeds on an isolating layer or insulating layer.
- Long processing time, can be worked with and smoothed for almost 1 hour despite of the short curing time.
- Special binding agent, therefore no further additives required.
- Temperature resistant from -30°C to +80°C, therefore suitable for cold storage rooms and heated screeds.
- Screed classification: Following the application instructions, cement screeds of class CT-C40-F7 can be produced to DIN EN 13813. It is also possible to produce cementitious screeds of higher quality depending on the quality of the screed sand and the mixing ratio.



## Technical data

### Material

Material base	special cement with additives
Bulk density	approx. 1.2 g/cm <sup>3</sup>
Consistency	powder
Colour	grey
Strength to DIN EN 13892-2	
Compressive strength after 28 days**	> 45 N/mm <sup>2</sup>
Bending tensile strength after 28 days**	> 7 N/mm <sup>2</sup>
Storage	dry, no permanent storage over +30°C
Shelf life	min. 6 months
Packaging size	25 kg PE lined heavy duty paper bag stock no. 3950/2

### Application

Consumption (mixing ratio = 1 : 5 in parts by weight)	approx. 3.4 kg PCI Novoment Z1 per m <sup>2</sup> and cm layer thickness
Layer thickness (depending on aggregate)	
- minimum	approx. 35 mm for screeds on isolating layer; approx. 45 mm for screeds on insulating layer;
- maximum	approx. 10 mm for bonded screeds approx. 100 mm
Recommended grade of aggregate (grading curve with low portion of fines within range B/C)	
largest grain size	layer thickness
Ø 4 mm	approx. 10 – 40 mm
Ø 8 mm	approx. 25 – 80 mm
Ø 16 mm	approx. ≥ 65 mm
Processing temperature	+5°C to +25°C
Mixing tools	forced action mixer
Conveyance	pneumatic
Mortar consistency	stiff-creamy
Processing time*	approx. 50 minutes
Curing time*	
- walkable after	approx. 3 hours
- ready to take further covering	
- ceramic tiles and flagstones after	approx. 1 day
- wall-to-wall carpet, parquet flooring and vapour-tight coverings after	approx. 1 day (at max. 3 CM % residual moisture). <b>The CM measuring is to be carried out in accordance with the operating instructions for cement screeds issued by the CM meter producer!</b>

\* Times are achieved when the temperatures of mortar, ambient air and substrate are approx. +23°C over the entire period, the relative humidity does not exceed 50% and aggregates within the fraction line B/C of DIN 1045 are used. See also "General information on the application of rapid setting cement screeds".

\*\*Screed sand grade 0 - 8 mm /fraction line A/B from Renning; mixing ratio (parts by weight) PCI Novoment Z1 : sand = 1 : 5.

## Preparation of substrate for bonded screeds to DIN 18560-3

- The substrate must be clean, structurally sound, able to bear weight, free from grease and other residues. Remove heavy contamination mechanically, residues of oil and wax with PCI Entöler oil remover. Smoothed surfaces with cement slurry are to be milled or shotblasted (Blastrac). Prewet the prepared substrate, keep damp, apply PCI Repahaft bonding agent and PCI Novoment Z1 screed mortar wet on wet.

## Application procedure

The German standards DIN 18560 and DIN 18353 must be followed for the application of PCI Novoment Z1.

**1** Fill aggregates in a forced action mixer and mix according to the mixing ratio as indicated below. Add PCI Novoment Z1 and mix for 1 minute.

**2** Add water while mixer is running (quantity of water depends on the moisture content of the aggregates used) and mix for approx. 2 minutes. Avoid too much water! **The mortar consistency should be stiff-creamy.**

**3** Spread mortar using a shovel, finishing trowel or surface scraper, compact, scrape off with a browning rod, rub down with a wooden board and smooth if necessary.

**4** Protect newly applied screed from rapid drying.

**Mixing instructions for the mixing drum of a standard screed mixing pump (useful volume approx. 200 litres of fresh mortar)**

- Fill mixing drum with aggregates up to half (grading curve with low portion of fines within range A/B)

- Add 2.5 bags of PCI Novoment Z1 (= 62.5 kg) (corresponding to mixing ratio = 1 : 5 parts by weight or 340 kg of PCI Novoment Z1 per m<sup>3</sup> of fresh mortar)

- Fill mixing drum with aggregates.

- Add water until a stiff-creamy consistency is produced.

**In special cases, use dry, bagged aggregates available from the following suppliers:**

Amberger Kaolinwerke (AKW)  
phone +49 / 9622 / 180  
fax +49 / 9622 / 183 75  
grade 0/8

Gebr. Dorfner OHG  
phone +49 / 9622 / 820  
fax +49 / 9622 / 82 69  
screed sand X0/7

Weisenburger GmbH  
phone +49 / 721 / 9 50 92 11  
fax +49 / 721 / 9 50 92 20  
screed sand B/C

or available from regional concrete batching plants

## Information on the application as heated screed

■ Application details to DIN 18560-2 and DIN EN 1264-4.

### Preheating phase:

A PCI Novoment Z1 screed can be heated after 3 days. Initial preheating takes place at a flow temperature of +25°C to be maintained for 3 days. The maximum flow temperature is set and maintained for another 4 days. Then the heating system is switched off. Ensure

adequate air supply and ventilation during the heating and cooling phase. Avoid draught! Do not allow the room temperature to drop below +15°C and the temperature of the screed surface to fall below +18°C. The heating contractor must draw up a report on the initial heating operation and subsequent commissioning. The report must be handed over to those concerned and

must contain the following information:

1. Data on the pre-heating operation with respective flow temperatures.
2. Maximum flow temperature attained.
3. Operating condition and outside temperature at the time of handing over.
4. Date of commissioning.

A screed heated up this way can be covered with a wide variety of top coverings.

## General information on the production of fast-setting cement screeds

Aggregates with a large proportion of fine particles (sand) have a larger surface area than aggregates with less fines. More cement and water are therefore required to produce a screed. The screed does not reach the appropriate strength if the consistency is too soft and/or contains too much water. This might result in shrinkage cracks and bulges. The equilibrium moisture will not be reached until later. The strength and low residual moisture level important for laying subsequent coverings are dependent on the

following factors:

### 1. Grading curve of aggregates used

Aggregates with a large proportion of fine particles require more gauging water and lead to low strength and retarded dehydration of the screed.

### 2. Compaction of fresh mortar

Low density and insufficient compaction of green screed mortars result in low strength.

### 3. Mixing ratio

Rich mixes lead to high strength and rapid drying. Lean mixes dry slowly and achieve lower strengths. An appropriate

mixing ratio has a positive effect on the shrinkage behaviour.

### 4. Temperature of substrate and aggregates

Curing and drying times may considerably increase at low application and substrate temperatures (compared with the times at +23°C).

### 5. Humidity and ambient temperature

The residual moisture is considerably determined by the climate, i.e. temperature and relative humidity, mainly at an early stage. It may take considerably longer under high humidity

## General information on the production of fast-setting cement screeds

before vapour-tight coverings or moisture-sensitive coverings can be laid. The relative humidity should not exceed 70% during the curing process. In principle, the residual moisture content should be checked before laying impervious coverings (see German standards DIN 18365 and

DIN EN 1264-4).

### 6. Layer thickness

The minimum layer thickness of 40 mm must be observed for screeds on insulation layers which can be pressed down to 5 mm. A minimum layer thickness of 45 mm is required for floating screeds to be covered with tiles.

The maximum and minimum layer thickness of a screed depends on the aggregates used. The thickness of the screed must be at least 3 times and maximum 10 times as thick as the diameter of the largest fraction.

## Please note

- The general guidelines for cement screeds must be observed. The fast curing properties of PCI Novoment Z1 must be taken into consideration.
- **A top covering or waterproofing layer must be applied, e.g. bonded application with ceramic tiles, when installing PCI Novoment Z1 screeds in swimming pools, outdoors or in wet rooms.**
- PCI Novoment Z1 must not be mixed with cement, fast-setting bonding agents, fibres, admixtures or additives.
- Do not apply PCI Novoment Z1 at substrate temperatures below +5°C and above +25°C or under exposure to draught.
- Apply PCI Novoment Z1 within approx. 50 minutes (at approx. +23°C) after mixing. Higher temperatures reduce, lower temperatures increase the time given.
- Never add water or fresh PCI Novoment Z1 to reconstitute a mortar mix which has already begun to set.
- Screed mortars with PCI Novoment Z1 can only be mixed in a forced action mixer according to the instructions.
- Uncovered screeds prepared for further covering absorb moisture at unfavourable climatic conditions (e.g. high humidity). The residual moisture in the screed can be reduced by taking appropriate measures (e.g. air dehumidification).
- Clean tools and mixing buckets with water immediately after use. The cured product can no longer be cleaned with water.
- Differences in compressive strength and bending tensile strength may occur when using regional screed sand. It is required to carry out quality control measures in accordance with DIN 18560.

## Information on the safe use

PCI Novoment Z1 contains cement: Causes serious eye damage. Causes skin irritation. Keep out of reach of children. Wear protective gloves (e.g. cotton gloves soaked in nitrile) and eye/face protection. IF IN EYES: Rinse cautiously

with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention. IF ON SKIN: Wash with plenty of soap and water and put skin cream on (pH value approx. 5.5). IF SKIN IRRITATION OCCURS: Get

medical advice/attention.

The product is non-flammable. No special fire precautions are therefore required.

Giscode ZP 1

*For further information: see PCI Material Safety Data Sheet.*

## Disposal of emptied PCI sales packaging

PCI participates in an area-wide waste disposal system for sales packaging completely emptied. DSD – Duales System Deutschland (Dual System Germany, contract number 1357509) is

our partner for waste disposal. PCI sales packaging completely emptied can be disposed of via DSD in accordance with the symbol printed on the packaging.

## Services for architects and designers

Consultations at the workplace, supplementary information, testing certificates and sample descriptions can

be requested from professional advisors and at the company headquarters.



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managementsystem

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