

PROJECT REFERENCE

Augsburg, 03.02.2021

The challenge of steel: Formenbau Staiger relies on PCI products and specialist advice when laying steel slabs

No everyday floor laying

■ **Steel as a floor covering? Unusual, but not impossible. Formenbau Staiger GmbH in Königsfeld-Neuhausen opted for the unusual floor design in the entrance area of their company building. For the commissioned master company Weisser Fliesenarbeiten, this meant laying XXL slabs with a high coefficient of expansion on screed with underfloor heating. Not an everyday job!**

■ The idea of laying steel slabs in the new company building came from the company owner himself: Udo Staiger had seen the unusual floor covering in a hotel in Austria. When planning the new company building, it was clear to him that steel would be on the floor in the entrance area. With the 285 x 150 centimeter tiles, the flooring is a real eye-catcher and at the same time tough. The contractor commissioned the company Weisser Fliesenarbeiten from Königsfeld-Erdmannsweiler with the tile laying. The family business turned to PCI to meet the challenge. PCI specialist advisor Markus Nagel was at their side from the start and was also on site during the application. This free service is part of the full range of products and services for PCI Augsburg GmbH.

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Large formats made of steel

Laying large-format tiles and slabs is more time-consuming and complex compared to standard formats. “The processor must know the material-specific and application-related special features and take them into account. Then laying is not rocket science,” explains PCI consultant Nagel. “In the present case, the high expansion coefficient of steel is an important criterion. Steel expands more when there are temperature differences than conventional laying materials.” And there is the small proportion of joints when laying the large-format steel slabs: joints reduce thermal stress and shrinkage stress. At Formenbau Staiger, however, this was only possible to a limited extent due to the small area involved. The underfloor heating installed in the screed also aggravated the construction site situation.

The substrate is decisive

In the case of large formats, the preparation of the substrate is decisive for perfect execution. Its evenness must be well below the stringent requirements of DIN 18202 with a tolerance of three millimeters per meter. Depending on the type of substrate and the application, processors must use a suitable filler and leveling compound. And the following applies: the more carefully the leveling work is carried out, the easier it is to lay the floor covering. The two master tilers, Weisser, carried out the leveling work on the recommendation of PCI specialist advisor Nagel with the wash and protective primer PCI Gisogrund and the floor leveler PCI Periplan Extra. This was followed by PCI Seccoral 2K Rapid for stress relief: The waterproofing slurry was the decisive component of the recommendation by PCI. It was this flexible

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intermediate layer of around three millimeters that made the floor structure and laying the steel slabs possible.

Adhesive and steel must bond

In the next step, the actual laying of the slabs, the processors had to master the challenge of adhesive bonding. The solution was to prime the steel slabs with the low-viscosity special primer PCI Epoxigrund 390. For the perfect bond of the flexible mortar, the processors scattered the reaction resin primer, while still fresh, with an excess of fire-dried quartz sand 0.2-0.7. After the primer had hardened they brushed off the excess quartz sand: a rough, non-slip surface was produced. This procedure offers the greatest possible reliability. Healthy building is also guaranteed: The primer is solvent-free and very low in emissions in accordance with GEV-EMICODE EC 1 R.

Reliable bond

The slabs were laid in the combined method with PCI Flexmörtel S2. The tile adhesive was the last decisive component for the reliable laying of the slabs. The highly flexible mortar compensates for temperature fluctuations and substrate stresses. Its high adhesive tensile strength achieves the double value as required making it the ideal solution for large-format slabs on heated screeds.

PCI Flexmörtel S2 is also very low in emissions according to GEV-EMICODE EC 1 R. The silicone sealant PCI Silcoferm S was used for the elastic grouting of the large formats.

The master tiler company Weisser carried out the laying work with three employees within two weeks. Both processors and contractor are

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enthusiastic about the result, and both agree: "With Markus Nagel we had a very competent specialist advisor at our side. The floor structure was carefully thought out and the products were optimally chosen. For future projects, we will certainly rely on his expertise and good support throughout the entire project again! "

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Project data

Project:	No everyday floor laying
Subtitle:	The challenge of steel: Formenbau Staiger relies on PCI products and specialist advice when laying steel slabs
Location:	Königsfeld
Completion year:	2019
Task:	Laying large-format steel slabs in the entrance area of the company building
Project size:	Approx. 50 qm
Products used:	PCI Gisogrund, PCI Periplan Extra, PCI Seccoral 2 K Rapid, PCI Univerdünnung, PCI Epoxigrund 390, PCI Flexmörtel S2, PCI Silcoferm S
Contractor:	Staiger Formenbau GmbH
PCI specialist adviser:	Markus Nagel
Applications technician:	Rainer Schölch
Processor:	Weisser Naturstein- und Fliesenarbeiten
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Images:



Image 1: Satisfied with the result: For the entrance area of his new company building, owner Udo Staiger chose steel slabs as the flooring and commissioned the Weisser tile work company. PCI specialist advisor Markus Nagel was on hand to advise.

From left: master tiler Urs and Eckard Weisser, company owner Udo Staiger, Benjamin Bertsche, assistant to the management, and PCI specialist advisor Markus Nagel.

Image for download:

<https://pics.pci-augsburg.com/php/index.php?database=1&downloadimage=60610&size=8345x5563&format=&time=1602021599&check=76b3d79526082a36d7158ebc0eb20a85>

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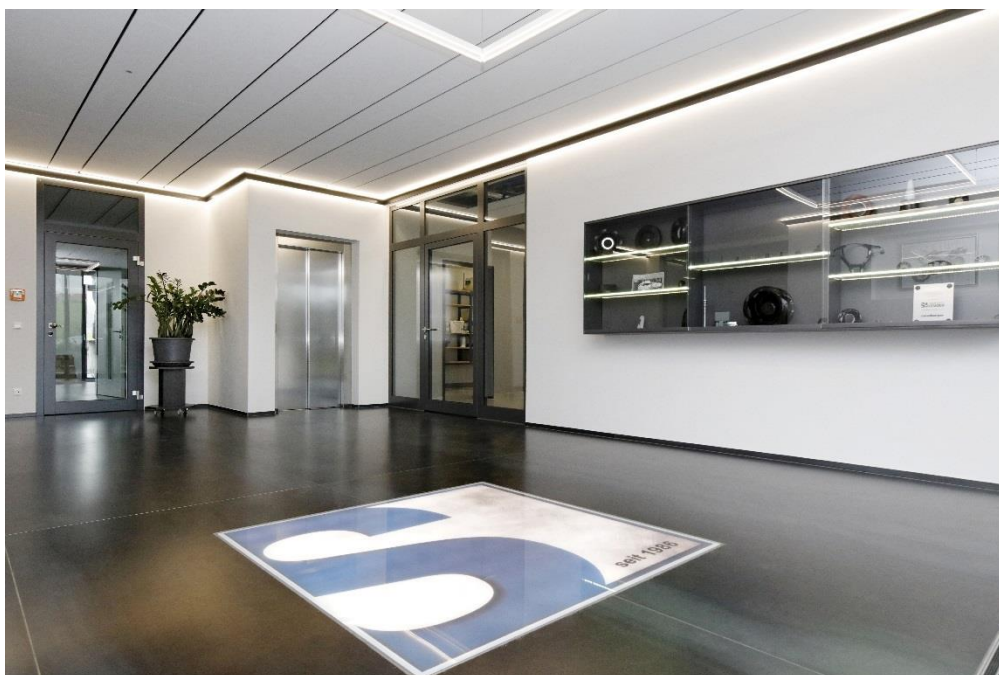


Image 2: The large formats made of steel, together with the company logo, are a real eye-catcher in the reception hall of Staiger Formenbau GmbH. The installation required specialist knowledge, a flawless floor structure and suitable installation products. The contractor and processor opted for PCI.

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Image 3: The prerequisite for perfect execution for large formats is an absolutely even surface. Initially, PCI Gisogrund and the special filler PCI Periplan Extra were used. The surface was then filled with PCI Seccoral 2K Rapid.

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Photo 4 + 5: The steel slabs were laid with PCI Flexmörtel S2. The highly flexible mortar compensates for temperature fluctuations and substrate tension and has a very high adhesive tensile strength. For optimal adhesion of the tile adhesive to the back of the steel slab, it was primed with PCI Epoxigrund 390 and freshly sprinkled with quartz sand. The grouting was elastic with PCI Silcoferm S.

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Über PCI

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About PCI

PCI Augsburg GmbH is part of MBCC Group and leader in the tile laying materials sector for specialist firms in Germany, Austria and Switzerland. In addition, the company supplies product systems for waterproofing, concrete protection and repair, as well as a complete product range for the flooring sector. The PCI Group employs a staff of more than 1,200 in Europe and generated sales of significantly over €300 million net in 2019. Further information about PCI on the Internet under www.pci-augsburg.de.

About MBCC Group

The MBCC Group is one of the world's leading suppliers of construction chemicals products and was created from the former BASF's construction chemicals business following its spin-off from the BASF Group. We offer innovative and sustainable products and solutions for the construction industry for various sectors, such as buildings, infrastructure, civil engineering, new construction and renovation. Our strong brands, such as Master Builders Solutions®, PCI®, Thermotek®, Wolman®, Colorbotics® and Watson Bowman Acme® are established in the market. With our innovations we face the challenges of sustainability in the industry. The MBCC Group consists of about 70 companies worldwide and employs around 7,500 construction experts in over 60 countries. Further information under: www.mbccgroup.com. We build sustainable performance.

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