

## Reference project

Augsburg, 22.01.2018

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Energy self-sufficiency and low pollution levels: future-oriented home building project in Friedberg-Hügelshart near Augsburg

## PCI: building material partner for Germany's first "Effizienzhaus Plus" housing estate

Germany's first "Effizienzhaus Plus" (high-efficiency home plus) housing estate is located in the Hügelshart district of Friedberg to the east of Augsburg. The model project implemented by asset bauen wohnen gmbh in cooperation with the building materials division of BayWa AG is a ground-breaking example of high energy efficiency, healthy and economical building. The nine detached and four-semi detached homes each generate more energy per year than their inhabitants will use on average and have been consistently constructed in accordance with the criteria for a healthy living environment.

### Low-pollutant construction materials for a feeling of well-being

As the envelopes of buildings are more and more tightly sealed, the selection of construction materials with no adverse impact on health and the proper use of these materials are becoming more important than ever before. To ensure a healthy living atmosphere and a feeling of well-being in the homes forming part of the "Effizienzhaus Plus" development, only tested low-pollutant construction materials were

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used in the interiors. In all the homes, tiles were laid solely using very low-emission products from PCI of Augsburg.

### **Tightly sealed substrates**

Tiling work in the housing estate was carried out by D&L Fliesen GmbH of Augsburg. Initially, the craftsmen thoroughly prepared the substrate by applying PCI Gisogrund primer. A water-proof protective layer of PCI Lastogum was then applied in the bathrooms. This product reliably protects moisture-sensitive substrates. At the same time, its deformation properties compensate for stresses. The solvent-free protective layer is ideally suited for use with underfloor heating. "PCI Lastogum is a very convenient product. It is supplied ready for use and can be used without any problems. The waterproofing layer can be applied using rollers, brushes or trowels," Jens Dachwald, Managing Director of D&L Fliesen, explains. Thanks to its resistance to lime solutions, PCI Lastogum ensures effective bonding between the waterproofing layer and the tile adhesive even if the adhesive bed is continuously soaked with moisture. Corner and connecting joints, inside and outside corners, pipe entries and floor drains were sealed using PCI Pecitape waterproofing tapes, collars and corner fittings. The tilers waterproofed the showers effectively with PCI Seccoral 1K. The flexible waterproofing slurry hardens without cracking and also bridges cracks which may occur later in the substrate.

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### Low-pollutant tile laying

“We chose PCI FT Extra adhesive for laying all ceramic tiling in the interiors,” says PCI adviser Raphael Schober, who provided support for tiling from the planning through to the implementation stage and selected products in close cooperation with the project owner and the tiling contractor. The polymer-modified adhesive features very good moistening properties and is therefore also very well-suited for laying fully vitrified tiles. The adhesive has a smooth consistency as well as good anti-sagging properties that ensure immediate bonding. Nevertheless, the positioning of the tiles can still be corrected. No wedging is needed. The tiles were then grouted with PCI Nanofug Premium multi-use flexible joint grout. With its working time of about 40 minutes, the premium joint grout is very convenient to use and sets rapidly without hardening on the tile surface. The fine surface consistency and brilliant colours make for very attractive joints which can be cleaned without any problems thanks to the Easy-to-Clean effect. The joints remain attractive in the long term thanks to their improved resistance to acidic detergents and additional protection against certain mould fungi.

### Certified healthy living environment

The official inauguration of the housing estate in Friedberg-Hügelhart took place in July 2017. Together with the keys to their new homes, all the owners received a healthy living environment certificate issued on the basis of tests carried out by TÜV Rheinland. For this purpose, atmospheric pollutant concentration measurements were made in

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each home. The results confirmed that all the values were within the target range specified. This housing estate is therefore a milestone in the development of energy-efficient, low-emission home building.

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## Project data

Project title:	PCI: building material partner for Germany's first "Effizienzhaus Plus" housing estate
Subtitle:	Energy self-sufficiency and low pollution levels: future-oriented home building project in Friedberg-Hügelshart near Augsburg
Location:	Friedberg-Hügelshart
Year of completion:	2017/18
Objective:	Laying of tiles with low-pollutant products in all the houses of the estate
Project size:	200 m <sup>2</sup>
Products used:	PCI Gisogrund, PCI Lastogum, PCI Pecitape waterproofing tapes, collars and corner fittings, PCI Seccoral 1K, PCI FT Extra, PCI Nanofug Premium
Planning and implementation:	asset bauen wohnen gmbh (Augsburg) in cooperation with BayWa AG (Munich)
Contractor:	D&L Fliesen GmbH, Augsburg
PCI applications technicians:	
PCI technical adviser:	Raphael Schober
Contact	<b>PCI Augsburg GmbH</b> Piccardstraße 11 86159 Augsburg Phone: ++49 821 5901-0 Telefax: ++49 821 5901-416 E-Mail: pci-info@basf.com www.pci-augsburg.de

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### Photos:



Fig. 1: Germany's first "Effizienzhaus Plus" housing development is located in Friedberg-Hügelshart to the east of Augsburg and consists of 13 homes. It is a ground-breaking model project for energy-efficient, healthy and economical home building.

Link for downloading Fig. 1:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9400&size=8860x5792&format=&check=a8a32f757f86341d5b44f61f0336b926>

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Fig. 2: In the “Energieeffizienzhaus Plus” housing development in Friedberg-Hügelshart near Augsburg, only very low-emission products were used for tile laying in the interior – from PCI Augsburg GmbH. The substrate was prepared with PCI Gisogrund primer.

Link for downloading Fig. 2:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9411&size=8688x5792&format=&check=b6065590e832e67a4422267a5dfc5063>

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Fig. 3 and 4: Corner and connection joints, inside and outside corners as well as pipe entries and floor drains were waterproofed using PCI Pecitape waterproofing tapes, collars and corner fittings.

Link for downloading Fig. 3:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9379&size=4067x6942&format=&check=975d8cc6955596bf7d9821515fb0ea32>

Link for downloading Fig. 4:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9375&size=7238x4825&format=&check=d575b1d80db4c2ca71859915580208df>

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Fig. 5 and 6: The tilers used PCI FT Extra adhesive for laying tiles in living areas and bathrooms. Thanks to its very good moistening properties, this adhesive can also be used on substrates with very low absorbency and is suitable for fully vitrified tiles.

Link for downloading Fig. 5:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9408&size=8688x5792&format=&check=c73bc44beefde7c809e57635c2310256>

Link for downloading Fig. 6:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9388&size=6592x5480&format=&check=ab251d361d553a81d8fd14b503e872cb>

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Fig. 7: The tiles were grouted using PCI Nanofug Premium. This multi-use flexible joint grout with a working time of about 40 minutes is very convenient to use and sets fast without hardening on the tile surface.

Link for downloading Fig. 7:

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9420&size=8048x5365&format=&check=d55f4fbd72e1c4764c20bc501ee2bd9c>

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Fig. 8: Clients appreciate the fine surface texture and brilliant colours of the joints. PCI Nanofug Premium also offers improved resistance to acidic detergents and enhanced protection against certain mould fungi and micro-organisms. The joints can be cleaned without any problems thanks to the Easy-to-Clean effect.

Link for downloading Fig. 8

<https://pics.pci-augsburg.com:443/php/index.php?database=2&downloadimage=9425&size=8331x5553&format=&check=7679784008bdf2c41b474805998fb4c6>

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## **About PCI**

*PCI Augsburg GmbH is part of the Construction Chemicals business unit of BASF and the leader in the tile laying materials sector for specialist contractors in Germany, Austria and Switzerland. In addition, the company supplies product systems for waterproofing, concrete protection and repair, as well as a full product range for the soft flooring sector. PCI employs a workforce of more than 1,200 people in Europe and generated net sales of over €250 million in 2016. Further information about PCI on the Internet at [www.pci-augsburg.de](http://www.pci-augsburg.de).*

## **About BASF**

*At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 114,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into the segments Chemicals, Performance Products, Functional Materials & Solutions, Agricultural Solutions and Oil & Gas. BASF generated sales of about €58 billion in 2016. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at [www.basf.com](http://www.basf.com).*

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