

Environmental Product Declaration

according to EN 15804 and ISO 14025

Porotherm KP 11.5 and KP 14.5 lintels
Porotherm KP 7 lintels
Porotherm KP VARIO lintels
Ceramic-concrete ceiling beams POT

Approval number: 3013-EPD-19-0347

Approval date: 03/2020


Valid until: 03/2025

Revision: 0



1. General information

Manufacturing company	Wienerberger s.r.o. Registration No.: 00015253 VAT No.: CZ00015253
Production site	3216 - Řepov, Řepov 43, 293 01, Mladá Boleslav, Czech Republic
Address	Plachého 388/28 370 01 České Budějovice 1 Czech Republic
Contacts	Phone: +420 383 826 111 E-mail: info@wienerberger.cz Web: https://wienerberger.cz/

EPD Program	National Environmental Labelling Program. For more information see www.cenia.cz  CENIA, Czech Environmental Information Agency, Vršovická 1442/65, Prague 10, 100 10 Czech Republic
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CEN standard EN 15804+A1 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

Internal

External

Third party verifier:

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About the company

Wienerberger s.r.o. is a part of the Wienerberger AG group, which is the world's largest manufacturer of clay blocks and Europe's largest manufacturer of clay tiles. The company's headquarters is in České Budějovice 1, Plachého 388/28, PSČ 370 01, Czech Republic. The company is registered in the Business Register kept by the Regional Court in České Budějovice, Section C, rider 27563 dated 29th December 1990.

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In its seven manufacturing plants / brickworks, Wienerberger s.r.o. makes a complex portfolio of Porotherm products, which consists of porous clay wall materials, ceiling clay blocks or other brick products required to manufacture ceramic-concrete prefabricated elements (brick shapes – U-shaped semi-products), i.e. lintels and ceiling beams.

The headquarters of the company is located in the historical centre of České Budějovice. The Porotherm brick product manufacturing plants are situated at Řepov (near Mladá Boleslav), Novosedly na Moravě, Týn nad Vltavou, Holice, Kostelec nad Orlicí, Šlapanice and Jezernice (at Lipník nad Bečvou). The Jezernice manufacturing plant, which is the only Wienerberger building in the Czech Republic built as a greenfield project, was commissioned in 2005 as one of the most advanced clay blocks manufacturing plants in Europe. Since 1995, the other manufacturing plants have been undergoing renovations and modernizations one by one in order to reduce the power demands of the manufacturing and the environmental impact. All the manufacturing plants are equipped with a stilling station used to process the fumes at the outlet of the manufacturing process and using the waste heat from the oven aggregate to dry pressings prior to the brick burning itself.

Brickworking has more than a hundred years of tradition in the Řepov facility. The brick plant manufactures transverse clay blocks, slab edge blocks, ceiling clay blocks and semi-products for the ceramic-concrete lintel and ceiling beam manufacturing plant N° 3216, which was built in 1999 in close proximity to the brick plant N° 3217.



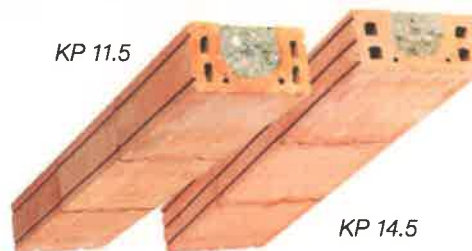
Photo 1 – Manufacturing plant 3216-Řepov

2. Product

2.1 Product description

Porotherm KP 11.5 and KP 14.5

The Porotherm KP 11.5 and 14.5 flat masonry lintel pieces are used as supporting elements above openings in wall structures. As very slim prefabricated elements, they are not suitable as support elements themselves. They only become support elements in combination with a clay block or concrete backing above them – the pressure zone. Such lintel is called a combined lintel.



Porotherm KP 7

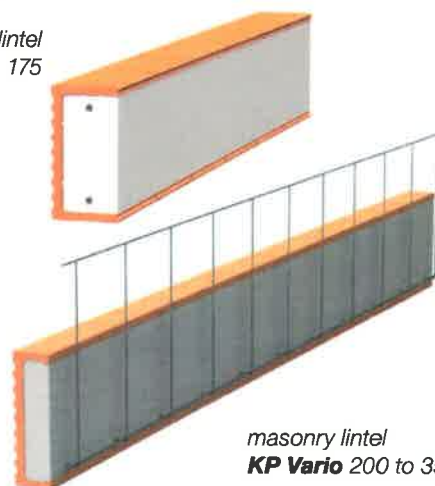
The Porotherm KP 7 masonry lintels are used as fully supporting elements above window and door openings in brick wall structures.



Porotherm KP Vario

Ceramic-concrete masonry lintel is used in combination with thermal insulation Vario boxes, Porotherm KP 7 lintels and potentially with walling beams or as supporting elements above window and door opening in outer walls and walled structures for additional assembly of screening equipment – external shutters or louvre blinders. Since 2017, the KP Vario lintels are also supplied with the Porotherm Vario UNI universal box used to mount screening equipment.

masonry lintel
KP Vario 100 to 175



masonry lintel
KP Vario 200 to 350

Ceramic-concrete ceiling beams POT

The POT ceramic-concrete ceiling beams are reinforced with welded spatial reinforcements (lattice girders) and can be used in the common environment of enclosed buildings. Ceilings composed of beams and ceiling clay blocks must be covered with at least a 10 mm layer of plaster from the bottom and the floor must be made prior to actually starting the building operation.



The basic input of the production are U-shaped clay masonry units produced in the producer's brick factory (3217-Řepov). These form a concrete-filled mold to determine the shape and dimensions of the product. The lintels and beams are reinforced with steel reinforcement inserted into the concrete. The amount and method of reinforcement placement depends on the type, respectively. shape and dimensions of products. The amount of reinforcement increases with the length of the final products. The correct position of the reinforcement is ensured by the so-called reinforcement, plastic spacers made of recycled PVC.

The required placement of the concrete is ensured by product vibration. The concrete then matures to cure the product. Subsequently, it is taken to the warehouse, sorted and eventually reworked. The products are manufactured as strips of 15 m length and cut from them to the required lengths.

Technical lifetime of lintels and ceiling beams is 100 years.

2.2 Application

All types of Porotherm lintels have intended use in load bearing and also in non-load bearing masonry above the window and door openings. Required load bearing capacity or required thickness of the wall can be achieved by combination of all types of these lintels.

The ceiling beams POT are used for horizontal constructions – roofs and mainly ceilings. The construction with 6 cm thickness of concrete layer above ceiling inlays is possible to use for flat roofs, the construction without concrete layer above inlays is possible to use also for pitch roofs up to 45 degrees. In these cases the beams are used at horizontal position, not in the slope.

2.3 Technical Data

Lintel name	Lintel thickness [cm]	Min. / max. clear span [cm]
Porotherm KP 11.5 and 14.5	11.5 and 14.5	75 / 250
Porotherm KP 7	7	75 / 300
Porotherm KP Vario	min. 38, max. 50 (incl. Vario UNI box)	75 / 300

Ceiling beam name	Distance between beam axes [cm]	Ceiling thickness [cm]	Min. / max. clear span [cm]
POT 175-825/902	50	19 / 25 / 29	150 / 800
	62,5		

2.4 Base materials / Ancillary materials

The ratio of the individual components of the products varies according to their total length. The longer the product, the greater the amount of steel reinforcement per unit length it contains (due to larger diameter of reinforcement).

Product does not contain Substance of Very High Concern.

Products content declaration

Materials / components	Substances	KP 11.5	KP 14.5	KP 7	KP Vario	POT
Clay masonry units	-	55 – 54 %	62 – 60 %	31 – 30 %	30 – 22 %	28 – 24 %
Concrete*	-	42 – 40 %	36 – 35 %	68 – 67 %	68 – 73 %	64 – 55 %
Reinforcement steel	-	3 – 6 %	2 – 5 %	2 – 3 %	2 – 5 %	8 – 21 %
PVC spacer	-	0 %	0 %	0 %	0 %	0 %

* Concrete is prepared in a mixing center made of sand, aggregate, cement, plasticizer and mixing water.

The values were rounded to whole numbers.



2.5 Manufacture

Manufacturing process diagram

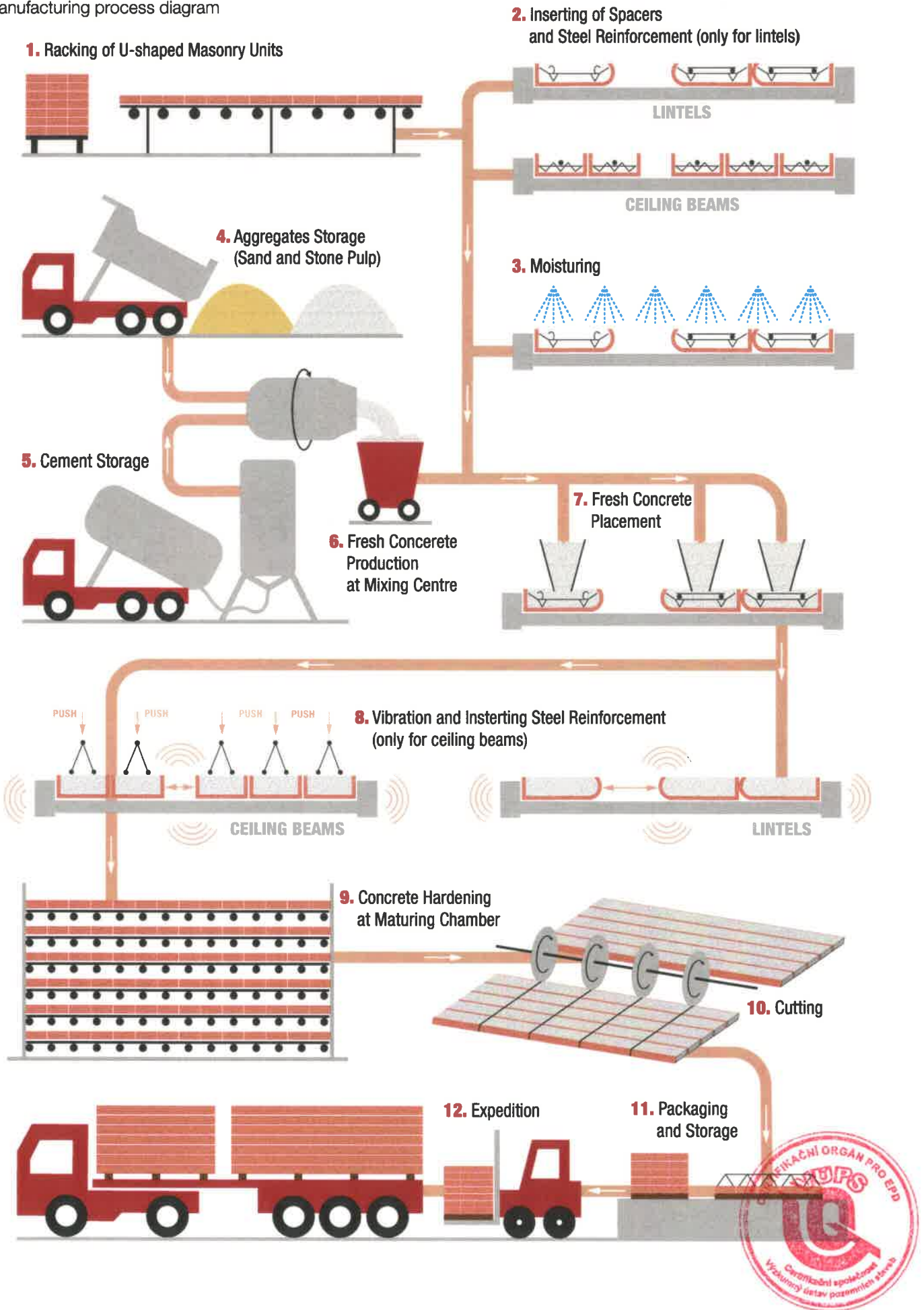




Photo 2 – Moistured U-shaped masonry units before concrete placement



Photo 3 - U-shaped masonry units after concrete placement



Photo 4 – Inserting steel reinforcement

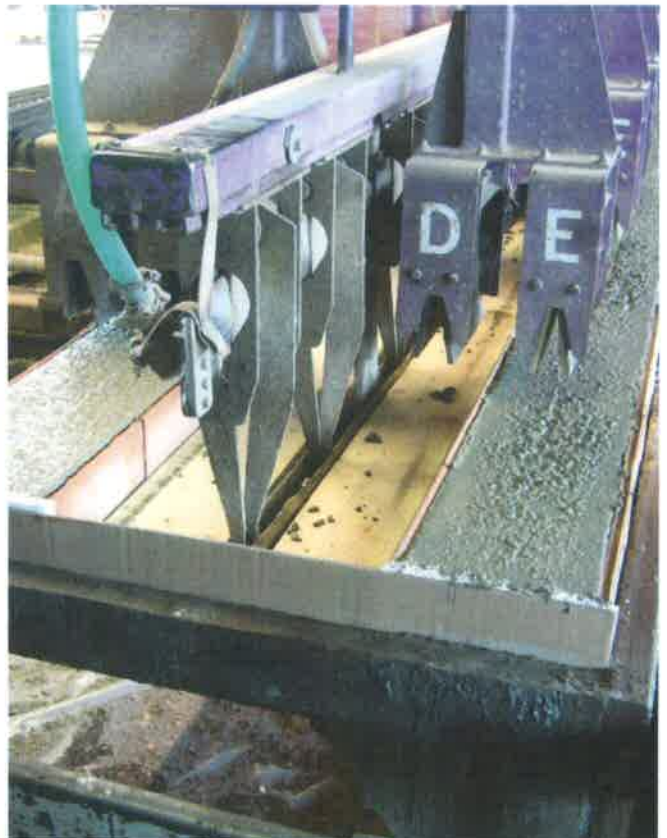


Photo 5 – Strutting during vibration

2.6 Environment and health during manufacturing

In face of the manufacturing conditions, no particular statutory or regulatory health protection measures are required.

Air from manufacturing is cleaned in accordance with statutory specifications. Emissions are significantly below the requisite limit values.

Production is free of waste water.

Waste products from production are internally recycled.

2.7 Product processing/Installation

In face of the mounting conditions, no particular statutory or regulatory health protection measures are required.

All horizontal elements - lintels and ceiling beams - are placed in a mortar bed of cement mortar M 10. These elements have the prescribed minimum bearing length in the masonry. The minimum bearing length in masonry of ceiling beams and Porotherm KP 11.5 and 14.5 lintels is the same for all lengths, namely 125 mm. For the rest of lintel types, this length ranges from 125 to 250 mm depending on the size of the clear span. They are described at lintels technical datasheets.

Ceiling constructions are made of POT ceiling beams, MIAKO ceiling clay blocks and monolithic with concrete of minimum class C 20/25.

2.8 Packaging

The cardboard, wooden prisms and steel tapes are used on packaging.

2.9 Condition of use

The arrows with inscriptions TOP indicating the position of lintels in the masonry are embossed from the side of the brick U-shaped semi-products - after incorporating the lintel into the masonry, the arrows must point up. More details on the correct use of the products can be found in its Technical sheets.

All fillers are burned or cured during manufacturing, and the brick is inert during the use phase (no emissions occur).



Photo 6 – Built-in KP Vario UNI lintels

2.10 Environment and health during use

No damage to health and environment can be anticipated if Wienerberger products are used as designated.

2.11 Reference service life

Technical life of Wienerberger products time is 100 years, when used correctly.

2.12 Extraordinary effects

Fire

Building material class according to EN 13501-1: A1

Water

No impact.

Mechanical destruction

No environmental or health consequences are to be anticipated in the event of mechanical destruction.

2.13 Re-use phase

Unbroken demolition lintels or ceiling beams can be re-used in new masonry.

As bricks, reinforcement and concrete emit no harmful substances to air, soil or water, they can be used as aggregates in building material. Steel reinforcement can be recycled.

2.14 Disposal

Wienerberger bricks and concrete comply with the European waste code 170101. If they cannot be re-used as stated in section 2.15, products can be disposed in landfills for inert material. They do not represent hazardous waste and there are no emissions to the environment to expect.

2.15 Further information

Further information is available at <https://wienerberger.cz/>.



Photo 7 – Ceiling beams POT used for building reconstruction