

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

ETA-18/0427  
of 24 September 2018

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Thermoperl" and "2K Perlit Flachdachdämmung"

Product family  
to which the construction product belongs

thermal insulation product made of loose fill expanded  
perlite

Manufacturer

KNAUF AQUAPANEL GmbH  
Kipperstraße 19  
44147 Dortmund  
DEUTSCHLAND

Manufacturing plant

Plant 1 (see Annex 1)

Plant 2 (see Annex 1)

Plant 3 (see Annex 1)

This European Technical Assessment  
contains

6 pages including 1 annex, which form an integral part of  
this assessment

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

EAD 040461-00-1201

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## Specific part

### 1 Technical description of the product

This European Technical Assessment applies to the thermal insulation product made of loose fill expanded perlite (EP) with the designations "Thermoperl" and "2K Perlit Flachdachdämmung", hereinafter referred to as thermal insulation.

The thermal insulation material is a granular, inorganic bulk good of grain sizes 0 - 6 mm made of thermally blown perlite.

The perlite grains are provided factory-made with a bitumen coating and are processed on the construction site with the addition of mineral oil raffinate.

At the construction site a mineral oil raffinate is added to the thermal insulation material (trade name "Perlmix"). The mixing proportion is: 1 sack of thermal insulation (100 l) and 1.5 l of "Perlmix".

The European Technical Assessment has been issued for the product on the basis of agreed data/ information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed. The European Technical Assessment applies only to products corresponding to this agreed data/information.

### 2 Specification of the intended use in accordance with the applicable European Assessment Document

The thermal insulation material can be used in the compressed state as external insulation of roofs or ceilings under water-proofing or under coverings without requirements for protection against noise.

The thermal insulation material can also be used in the compressed state as external insulation of roofs or ceilings under very high compressive loads (without requirements for protection against noise), provided that a load-distributing pressure layer (such as cement screed or poured asphalt screed) is used above the thermal insulation.

The performance according to section 3 only applies if the insulation product is installed according to the manufacturer's installation instructions dry and in a compressed state with a compression at least 30 % by volume in accordance with the bulk density given in the ETA and if it is protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

For the determination of the thermal resistance, the thickness of the thermal insulation material is applied, taking into account the compression.

Prerequisite for use is that the roof system executed provides a sufficient resistance to wind load (wind suction) depending on the location of the building and that the roof structure is designed such that it can transfer the additional loads from the structural assembly.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the insulation product of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

### 3 Performance of the product and references to the methods used for its assessment

For sampling, conditioning and testing the provisions of the EAD No 040461-00-1201 "Thermal insulation product made of loose fill expanded perlite (EP)" apply.

English translation prepared by DIBt

**3.1 Mechanical resistance and stability (BWR 1)**

Not applicable.

**3.2 Safety in case of fire (BWR 2)**

Essential characteristic	Performance
Reaction to fire test acc. to EN ISO 11925-2:2010*	Class E acc. to EN 13501-1:2007 + A1:2009
Determination of the organic content test acc. to EN 13820 (determination of combustion loss)	No performance assessed.
* Using a suitable sample holder in line with EN ISO 11925-2 in which the loose sample material can not fall out.	

**3.3 Hygiene, health and the environment (BWR 3)**

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	
Substance/s classified as EU-cat. Carc. 1A and/or 1B <sup>a</sup>	The product does not contain these dangerous substances actively used. <sup>b</sup> However, the product may contain PAH and B[a]P as residues (see below).
Substance/s classified as EU-cat. Muta. 1A and/or 1B <sup>a</sup>	
Substance/s classified as EU-cat. Acute Tox. 1, 2 and/or 3; Repr. 1A and/or 1B; STOT SE 1 and/or STOT RE 1 <sup>a</sup>	
PAH and B[a]P	The content of these residues was tested in the raw material: <sup>c</sup> PAH < 50 mg/kg B[a]P < 5 mg/kg
Use scenarios regarding BWR 3 in accordance with EOTA TR 034: IA2	
<sup>a.</sup> In accordance with Regulation (EC) No 1272/2008. <sup>b.</sup> Assessment based on the detailed manufacturers' statements on dangerous substances. <sup>c.</sup> Statement according to test report.	

**3.4 Safety and accessibility (BWR 4)**

Not applicable.

**3.5 Protection against noise (BWR 5)**

Not applicable.

### 3.6 Energy economy and heat retention (BWR 6)

Wesentliches Merkmal	Leistung
Thermal conductivity (in the compressed state) test acc. to EN 12667:2001, acc. to EN 14316-1:2004	Declared value of thermal conductivity $\lambda_D (23/50) = 0.062 \text{ W}/(\text{m} \cdot \text{K})^a$
Loose bulk density (in the uncompressed state) test acc. to EN 1097-3:1998	162 kg/m <sup>3</sup> to 218 kg/m <sup>3</sup>
Particle size distribution	No performance assessed.
Water repellency	No performance assessed.
Crushing resistance	No performance assessed.
Water vapour diffusion resistance factor acc. to EN 14316-1:2004	$\mu = 3$
Settlement	No performance assessed.
Compressive stress at 10 % deformation test acc. to EN 826:2013 <sup>b</sup>	$\geq 250 \text{ kPa}$
<sup>a</sup> Declared value of thermal conductivity for a moisture content of the insulation product at 23 °C/50% relative humidity, representative of at least 90% of production with a 90% confidence level. <sup>b</sup> The test material is compressed by 30% by volume before the test. The test frame has an open width of approx. 200 mm x 200 mm. The filling level of the compressed test material is limited to approx. 90 mm of height.	

### 3.7 Sustainable use of natural resources (BWR 7)

For the sustainable use of natural resources no performance was investigated for this product.

### 4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the European Assessment Document No 040461-00-1201 "Thermal insulation product made of loose fill expanded perlite (EP)" the legal basis is: Commission Decision 1999/91/EC.

The system to be applied is: system 3.

### 5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 24 September 2018 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe  
Head of Department

*beglaubigt:*  
Getzlaff

## ANNEX 1

### Manufacturing plants

Plant 1 KNAUF AQUAPANEL GmbH  
Kipperstraße 19  
44147 Dortmund  
DEUTSCHLAND

Plant 2 KNAUF AQUAPANEL GmbH  
Ruhrstraße 8  
86633 Neuburg/Donau  
DEUTSCHLAND

Plant 3 KNAUF AQUAPANEL GmbH  
Hauptstraße 102  
39345 Bülstringen  
DEUTSCHLAND