

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-15/0004
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General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Rotkalk in-Board 045 TecTem", "TecTem Insulation
Board Indoor"

Product family
to which the construction product belongs

Thermal Insulation boards made of expanded perlite,
deviating from EN 13169

Manufacturer

Knauf Performance Materials GmbH
Kipperstraße 19
44147 Dortmund
DEUTSCHLAND

Manufacturing plant

Knauf Performance Materials GmbH
Kipperstraße 19
44147 Dortmund
DEUTSCHLAND

This European Technical Assessment
contains

6 pages 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 040010-00-1201

This version replaces

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Specific part

1 Technical description of the product

This European Technical Assessment applies to the factory-made thermal insulation boards made of expanded perlite (EPB) with the designations "Rotkalk in-Board 045 TecTem" and "TecTem Insulation Board Indoor", hereafter referred to as thermal insulation boards.

The thermal insulation boards deviate from the standard EN 13169:2013 as they do not contain reinforcing fibres and do not fulfil the minimum value of bending strength stated in the standard.

The thermal insulation boards are manufactured of expanded perlite by adding a binding agent and other additives. The surfaces of the thermal insulation boards can be coated with a single-sided or double-sided primer.

The thermal insulation boards are made with the following dimensions:

Nominal thicknesses:	50 mm to 200 mm
Nominal length:	500 mm to 1250 mm
Nominal widths:	400 mm to 1250 mm

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 (EAD)

The thermal insulation boards can be used as follows:

- internal insulation of walls
- internal insulation of ceilings

The performance according to section 3 only applies if the thermal insulation boards are installed according to the manufacturer's installation instructions and if they are protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

Concerning the application of the thermal insulation boards, also the respective national regulations shall be observed.

The design value of the thermal conductivity shall be laid down according to relevant national provisions.

When calculating the thermal resistance, the nominal thickness of the insulation materials shall be applied.

Where the thermal insulation boards are fixed by using adhesives and/or anchors, only such adhesions or anchors shall be used, which are suitable for this purpose. The assessment of these fixings is not subject of this European Technical Assessment.

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 040010-00-1201, "Insulation product made of expanded perlite (EPB)" apply.

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire: Test acc. to EN ISO 1182:2010 and EN ISO 1716:2010	Class A1 acc. to nach EN 13501-1: 2007+A1:2009

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Water vapour diffusion resistance coefficient: test acc. to EN 12086:2013	$\mu = 5$ to 6^a
Content, emission and/or release of dangerous substances:	
Substance(s) classified as EU-cat. Carc. 1A/1B (H350, H350i), in accordance with Regulation (EC) No 1272/2008.	The product does not contain these dangerous substances actively used. ^b
Substance(s) classified as EU-cat. Muta. 1A/1B (H340), in accordance with Regulation (EC) No 1272/2008.	
Substance(s) classified as EU-cat. Acute Tox. 1, 2 and/or 3 (H300, H301, H310, H311, H339, H331); substance(s) classified as EU-cat. Repr. 1A/1B (H360, H360F, H360D, H360FD); substance(s) classified as EU-cat. STOT SE 1 and/or STOT RE 1 (H370, H372), in accordance with Regulation (EC) No 1272/2008.	
Release scenarios regarding BWR 3: IA 2, I A3, S/W 3 (according to EOTA TR 034)	
^a The most unfavorable value for the construction product work shall be applied each.	
^b Assessment based on a detailed manufacturer's product declaration.	

3.3 Protection against noise (BWR 5)

Essential characteristic	Performance
Sound absorption:	No performance assessed.

3.4 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
<p>Thermal conductivity: Test acc. to EN 12667:2001, in accordance with to EN 13169:2012+A1:2015 Nennstärke: $50 \text{ mm} \leq d_N < 120 \text{ mm}$</p> <p>Nominal thickness: $50 \text{ mm} \leq d_N < 120 \text{ mm}$ Nominal thickness: $120 \text{ mm} \leq d_N \leq 200 \text{ mm}$</p> <p>Conversion of humidity acc. to EN ISO 10456:2007+AC:2009</p> <p>The mass-related moisture content at 23 °C/50 % rel. humidity:</p> <p>The mass-related moisture content at 23 °C/80 % rel. humidity:</p> <p>The mass-related moisture conversion coefficient:</p> <p>Moisture conversion factor (dry to 23 °C/50 % rel. humidity):</p> <p>Moisture conversion factor (23 °C/50 % rel. humidity to 23 °C/80 % rel. humidity):</p>	<p>Declared value* for a moisture content of the insulation boards at 23 °C and 50 % relative humidity:</p> <p>$\lambda_D (23/50) = 0.045 \text{ W}/(\text{m} \cdot \text{K})$ $\lambda_D (23/50) = 0.044 \text{ W}/(\text{m} \cdot \text{K})$</p> <p>$u_{23/50} = 0.02 \text{ kg/kg}$</p> <p>$u_{23/80} = 0.03 \text{ kg/kg}$</p> <p>$f_u = 0.8$</p> <p>$F_{m1} = 1.02$</p> <p>$F_{m2} = 1.01$</p>
<p>Dimensional deviations (individual values):</p> <p>Length and width: Test acc. EN 822:2013</p> <p>Thickness: Test acc. EN 823:2013 (with a load of 250 Pa)</p> <p>Squareness in direction of length and width: Test acc. EN 824:2013</p> <p>Flatness:</p>	<p>$\pm 3 \text{ mm}$</p> <p>$\pm 2 \text{ mm}$</p> <p>$\leq 3 \text{ mm/m}$</p> <p>No performance assessed.</p>
<p>Water absorption:</p>	<p>No performance assessed.</p>
<p>Density: Test acc. to EN 1602:2013</p>	<p>Density range: $90 \text{ kg/m}^3 - 105 \text{ kg/m}^3$</p>
<p>Bending strength (individual value): Test acc. to EN 12089:2013</p>	<p>$\geq 120 \text{ kPa}$</p>
<p>Compressive strength (individual value): Test acc. to EN 826:2013</p>	<p>$\geq 200 \text{ kPa}$ CS(10\Y)200 acc. to EN 13169:2012+A1:2015</p>
<p>Deformation under specified load and temperature: Test acc. to EN 1605:2013 (Test conditions 80 kPa, 60 °C, 168 h)</p>	<p>Relative thickness reduction (compression): $\leq 5 \%$ DLT(3)5 acc. to EN 13169:2012+A1:2015</p>

Essential characteristic	Performance
Dimensional stability at 23 °C and 90 % relative humidity: Test acc. to EN 1604:2013 Conditioning: 48 h, at (23±2) °C and (90±5) % relative humidity	Relative changes in length, width and thickness: max. ± 0.5 %
Dimensional stability at 70 °C and 50 % relative humidity: Test acc. to EN 1604:2013 Conditioning: 48 h, at (70±2) °C and (50±5) % relative humidity	Relative changes in length, width and thickness: max. ± 0.5 %
Tensile strength perpendicular to faces (individual value): Test acc. to EN 1607:2013 in accordance with EN 13169: 2012+A1:2015	≥ 80 kPa
Compressive creep:	No performance assessed.
Point load:	No performance assessed.
* The declared value of thermal conductivity is representative for at least 90 % of the production with a confidence level of 90 % and applies to the given density range (see clause 3.4). For the admissible deviation of an individual value of the thermal conductivity from the declared value the method described in EN 13172:2012, annex F, applies.	

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 040010-00-1201 "Insulation product made of expanded perlite (EPB)" the legal basis is:
Commission Decision 1999/91/EC.

The system to be applied is: system 3

In addition, the European legal basis for reaction to fire for products covered by this EAD is:
Commission Decision 2001/596/EC.

The systems to be applied is: system 1

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.

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beglaubigt:
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