

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-19/0559
of 30 October 2019

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

'Redboard basic' and 'Redboard pro'

Product family
to which the construction product belongs

Thermal insulation board made of mineral material

Manufacturer

redstone GmbH & Co. KG
Haferwende 1
28357 Bremen
DEUTSCHLAND

Manufacturing plant

Calsitherm
Silikatbaustoffe GmbH
Hermann-Löns-Str. 170
33104 Paderborn-Sennelager
DEUTSCHLAND

This European Technical Assessment
contains

8 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 040012-00-1201

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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 calcium silicate and cellulose fibres with the designations 'Redboard basic' and 'Redboard pro', hereafter referred to as thermal insulation boards.

The thermal insulation boards are high-pressure steam cured (autoclaved).

The surface of the thermal insulation boards can be one-side structured with slots up to approx. 1 mm.

The thermal insulation boards are made of calcium silicate and cellulose fibres and they are not coated or laminated.

The thermal insulation boards are made with the following dimensions:

Nominal thickness: 20 mm bis 120 mm

Nominal length: 625 mm und 1250 mm

Nominal widths: 500 mm und 1000 mm

'Redboard window soffit' boards for wall openings and 'Redboard wedge-shaped' boards sawn out of the above mentioned thermal insulation boards are also covered by this European Technical Assessment.

Nominal dimensions of 'Redboard window soffit' boards 500 mm x 250 mm x 15 mm

Nominal dimensions of 'Redboard wedge-shaped' boards 1250 mm x 500 mm x 30/8 mm
 and
 625 mm x 250 mm x 25/3 mm

Profile battens according to Annex 1 are only covered concerning the reaction to fire classification.

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 boards can be used for the following intended uses:

- Internal insulation of ceilings (underside) or roofs
- Internal insulation of floors or bedplates (on the top) below floor screed without protection against noise requirements
- Internal insulation of walls

The performance according to section 3 only applies if the thermal insulation boards are installed according to the manufacture'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 thermal insulation boards 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.

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 040012-00-1201 "Thermal insulation board made of mineral material".

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 EN 13501-1:2010 ¹

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content and/or release of dangerous substances:	The product does not contain or release dangerous substances according to EOTA TR034 (version April 2014).
Water vapour diffusion resistance coefficient: Test acc. to EN 12086:2013, climatic condition set A	$\mu = 3$

3.3 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity: at mean reference temperature of 10 °C Test acc. to EN 12667:2001 'Redboard pro' 'Redboard basic'	Declared value for a moisture content of the insulation boards at 23 °C and 50 % relative humidity: $\lambda_{D(23,50)} = 0.059 \text{ W/(m} \cdot \text{K)}^*$ $\lambda_{D(23,50)} = 0.075 \text{ W/(m} \cdot \text{K)}^*$
Conversion of humidity acc. to EN ISO 10456:2007/AC:2009	
Mass-related moisture content at 23 °C/ 50 % rel. humidity: 'Redboard pro' 'Redboard basic'	$u_{23,50} = 0.014 \text{ kg/kg}$ $u_{23,50} = 0.013 \text{ kg/kg}$

¹ The reaction to fire of class A1 according to EN 13501-1 is only proved, if the thermal insulation boards are not supplementary provided with paints, coatings or the like.

Essential characteristic	Performance
Mass-related moisture content at 23 °C/ 80 % rel. humidity: 'Redboard pro' 'Redboard basic'	$u_{23,80} = 0.021$ kg/kg $u_{23,80} = 0.018$ kg/kg
Mass-related moisture conversion coefficient (dry to 23 °C/ 50 % rel. humidity): 'Redboard pro' 'Redboard basic'	$f_{u1} = 0$ $f_{u1} = 1.41$
Mass-related moisture conversion coefficient (23 °C/ 50 % rel. humidity to 23 °C/ 80 % rel. humidity): 'Redboard pro' 'Redboard basic'	$f_{u2} = 2.11$ $f_{u2} = 1.53$
Moisture conversion factor (dry to 23 °C/ 50 % rel. humidity): 'Redboard pro' 'Redboard basic'	$F_{m1} = 1.00$ $F_{m1} = 1.02$
Moisture conversion factor (23 °C/ 50 % rel. humidity to 23 °C/ 80 % rel. humidity): 'Redboard pro' 'Redboard basic'	$F_{m2} = 1.01$ $F_{m2} = 1.01$

- * The declared value is representative for at least 90 % of the production with a confidence level of 90 % and applies to the density range given in this section 3.3. 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.

Essential characteristic	Performance
Dimensional deviations (individual values):	maximum deviation:
Length and width: Test acc. to EN 822:2013	± 2 mm class L(2) and W(2) acc. to EN 13163:2013
Thickness: Test acc. to EN 823:2013 (with a load of 250 Pa)	± 2 mm
Squareness in direction of length and width: in direction of thickness: Test acc. to EN 824:2013	$S_b \leq 4$ mm/m $S_d \leq 2$ mm
Flatness in direction of length and width: Test acc. to EN 825:2013	$S_{max} \leq 2$ mm

Essential characteristic	Performance
Water absorption:	No performance assessed.
Density (each individual value): Test acc. to EN 1602:2013 'Redboard pro' 'Redboard basic'	Density range: 180 kg/m ³ - 187 kg/m ³ 235 kg/m ³ - 253 kg/m ³
Bending strength:	No performance assessed.
Compressive strength: Test acc. to EN 826:2013 'Redboard pro' 'Redboard basic'	Mean value (individual values may fall below these values up to 10%): 1000 kPa 1500 kPa
Dimensional stability at 70° C: Test acc. to EN 1604:2013 Conditioning: 48 h, at (70 ± 2) °C	Relative changes in length, width and thickness: ≤ 0.5%
Dimensional stability at 23° C and 90% relative humidity: Test acc. to EN 1604:2013 Conditioning: 48 h storage, at (23 ± 2) °C and (90 ± 5) % relative humidity	Relative changes in length, width and thickness: ≤ 0.5%
Tensile strength perpendicular to faces:	No performance assessed.
Point load:	No performance assessed.
Porosity:	No performance assessed.

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

In accordance with the European Assessment Document EAD No. 040012-00-1201 the applicable European legal act is: Declaration 1999/91/EC of the European Commission

The system to be applied is: 3

In addition, with regard to reaction to fire, the system to be applied is: 1

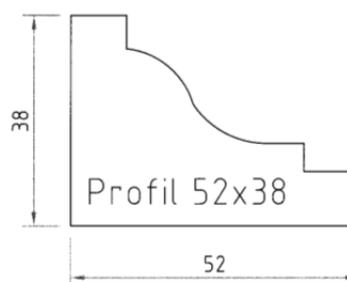
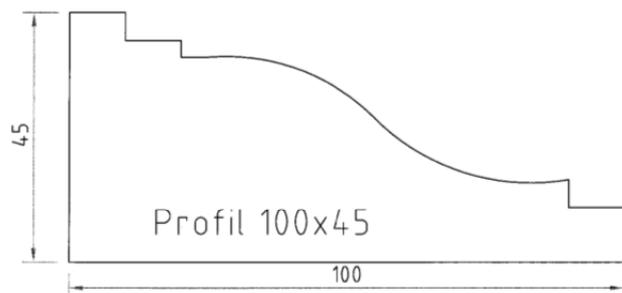
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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

Issued in Berlin on 30 October 2019 by Deutsches Institut für Bautechnik

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beglaubigt:
Jänsch



Profileleisten 1250mm lang

'Redboard basic' and 'Redboard pro'

Profile battens

Annex 1