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European Technical Assessment

ETA-13/0717
of 25.06.2018

General part

Technical Assessment Body issuing the European Technical Assessment

Österreichisches Institut für Bautechnik (OIB)
Austrian Institute of Construction Engineering

Trade name of the construction product

CaSi-Systems Wohnklimaplatte Premium
CaSi-Systems Klimaplatte

Product family to which the construction product belongs

Thermal insulation board made of mineral material

Manufacturer

CaSi-Systems Aktiengesellschaft,
Auf der Breun 16
37671 Höxter
Germany

Manufacturing plant

CaSi-Systems plant III

This European Technical Assessment contains

10 pages

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

European Assessment Document (EAD)
“Thermal insulation board made of mineral material”, EAD 040012-00-1201

This European Technical Assessment replaces

European Technical Approval ETA-13/0717 with validity form 25.06.2013 to 24.06.2018

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Specific part

1 Technical description of the product

1.1 Definition of the construction product

This European technical approval applies to the following insulation product.

CaSi-Systems Wohnklimaplatte Premium
CaSi-Systems Klimaplatte

with a nominal density of 270 kg/m³ (tolerance ± 10 %)

The high pressure steam cured (autoclaved) product consists of calcium silicate with a content of cellulose fibres below **1 %** in weight and volume and glass fibres of **2 %** in weight as reinforcement

The insulation material is not faced.

1.2 Manufacturing

The calcium silicate board is manufactured in the form of boards in the following dimensions:

nominal thickness:	from 15 mm to 50 mm
nominal length:	600 mm, 1000 mm, 1200 mm
nominal width:	300 mm, 500 mm, 600 mm

The dimensions correspond to the delivery program of the manufacturer.

The calcium silicate board has to fulfill the following quality criteria:

ph value	8 -10,5
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The European Technical Assessment is issued for the product on the basis of agreed data/information, deposited with the Österreichisches Institut für Bautechnik, which identifies the product that has been assessed and judged.

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2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 Intended use

The calcium silicate insulation board CaSi-Systems Wohnklimaplatte Premium, CaSi-Systems Klimaplatte can be used as insulation material for the following intended uses:

Area of application for walls

- internal insulation of walls

Area of application for roofs and ceilings/floors

- internal insulation of ceilings

The insulation material may only be used in structures where it is protected from wetting and weathering.

2.2 General assumptions

Concerning the application of the insulation material also the respective national regulations shall be observed.

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

The release of dangerous substances of the insulation product has not been determined. An additional assessment of the product according to national or European provisions in this respect might be necessary.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product, as he considers necessary.

The provisions made in this ETA are based on an assumed intended working life of the insulation product of 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professionals.

The installation is carried out by appropriate personnel which have adequate experience in installing the material under the supervision of the person responsible for technical matters on site. Concerning this matter the manufacturer has to regularly train installers.

The construction shall be designed and installed in such a way that no harmful condensation occurs within the works.

BWR 6	Tensile strength perpendicular to the faces	EN 1607:2013	Clause 3.3.8 of the ETA
	Point load	EN 12430:2013	Clause 3.3.9 of the ETA
	Porosity	No performance assessed.	

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3.1 Safety in case of fire (BWR 2)

3.1.1 Reaction to fire

The reaction to fire of boards made of calcium silicate and glass with an organic content below 1 % in weight and volume is given by Commission Decision 96/603/EC (consolidated version). The products are classified **A1**, as provided for in Decision 2000/147/EC, without further testing.

3.2 Hygiene, health and the environment (BWR 3)

3.2.1 Content, emission and/or release of dangerous substances

No performance assessed.

3.2.2 Water vapour permeability

The water vapour permeability of the product is determined in accordance with EN 12086 climatic condition C. The mean water vapour permeability at a mean density of 273 kg/m³ does not exceed $\mu = 2,7$.

3.3 Energy economy and heat retention (BWR 6)

3.3.1 Thermal conductivity

The assessment of the thermal conductivity is carried out according to EAD "Thermal insulation board made of mineral material". The declared value of thermal conductivity is determined according to EN 10456.

The fractile value of thermal conductivity for the density range of 243 kg/m³ - 297 kg/m³ is $\lambda_{(10,dry,90/90)} = 0,0651 \text{ W/(m}\cdot\text{K)}$ representing at least 90 % of the production with a confidence limit of 90%

The declared value of thermal conductivity for the density range of 243 kg/m³ - 297 kg/m³ is $\lambda_D(23,50) = 0,067 \text{ W/(m}\cdot\text{K)}$ determined by conversion of the $\lambda_{(10,dry,90/90)}$ value.

For conversion of humidity the following applies:

- the mass related moisture content at 23 °C/50 % relative humidity:

$$u_{23,50} = 0,0187 \text{ kg/kg}$$

- the mass related moisture content at 23 °C/80 % relative humidity:

$$u_{23,80} = 0,0334 \text{ kg/kg}$$

- the mass related moisture conversion coefficient:

$$f_{u1(dry - 23/50)} = 1,487 \text{ kg/kg}$$

$$f_{u2(23/50 - 23/80)} = 2,229 \text{ kg/kg}^1$$

- the moisture conversion factor dry to 23 °C/50 % relative humidity

$$F_{m1} = 1,0282$$

- the moisture conversion factor 23 °C/50 % relative humidity to 23 °C/80 % relative humidity

$$F_{m2} = 1,0333$$

3.3.2 Dimensions

The thickness of the product is determined according to European standard EN 823. The test is carried out with a load of 250 Pa.

The deviation from nominal thickness in the thickness range of 15 mm to 50 mm does not exceed $\pm 2 \text{ mm}$.

The length of the product is determined according to European standard EN 822. The deviation from nominal length does not exceed $\pm 2 \text{ mm}$.

The width of the product is determined according to European standards EN 826.
The deviation from nominal width does not exceed ± 2 mm.

The flatness of the product is determined according to European standards EN 825. The deviation from flatness does not exceed ± 2 mm.

The squareness of the board is determined according to European standard EN 824. The deviation from squareness on length and width does not exceed **3 mm/m**.

3.3.3 Water absorption

The short-term water absorption by immersion of the product is determined according to European standard EN 1609, method B. The mean water absorption at a mean density of 274 kg/m^3 did not exceed **38 kg/m²**

The long-term water absorption by immersion of the products is determined according to European standard EN 12087, method 1B. The mean water absorption at a mean density of 274 kg/m^3 did not exceed **41 kg/m²**

3.3.4 Density

The density of the product is determined according to European standard EN 1602. The density is at least **243 kg/m³** and does not exceed **297 kg/m³** ($270 \text{ kg/m}^3 \pm 10\%$).

The nominal density is **270 kg/m³**

Before testing the sample has been dried at a temperature of $105 \text{ }^\circ\text{C}$ to constant mass.

3.3.5 Bending strength

The bending strength of the product is determined according to European standard EN 12089 test method B. The mean bending strength is for a span of 114 mm of the 25 mm thick insulation material at least **496 kPa**.

The mean bending strength is for a span of 239 mm of the 50 mm thick insulation material at least **418 kPa**.

Before testing the sample has been dried at a temperature of $40 \text{ }^\circ\text{C}$ to constant mass.

3.3.6 Compressive stress/strength

The compressive behaviour of the product is determined according to European standard EN 826. The mean compressive stress of the 50 mm thick insulation material at 10 % deformation is at least **1548 kPa**.

Before testing the sample has been dried at a temperature of $40 \text{ }^\circ\text{C}$ to constant mass.

3.3.7 Dimensional stability

The dimensional stability of the insulation material is determined according to European standard EN 1604. The test is carried out after conditioning at a temperature of $(70 \pm 2) \text{ }^\circ\text{C}$ for 48 h

The change of dimensions in length $\Delta\varepsilon_l$ does not exceed $\pm 0,5 \%$

The change of dimensions in width $\Delta\varepsilon_b$ does not exceed $\pm 0,5 \%$

The change of dimensions in thickness $\Delta\varepsilon_d$ does not exceed $\pm 0,5 \%$

The dimensional stability of the product is determined according to European standard EN 1604. The test is carried out after conditioning at a temperature of $(23 \pm 2) \text{ }^\circ\text{C}$ and $(90 \pm 5) \%$ relative humidity for 48 h.

The change of dimensions in length $\Delta\varepsilon_l$ does not exceed $\pm 0,5 \%$

The change of dimensions in width $\Delta\varepsilon_b$ does not exceed $\pm 0,5 \%$

The change of dimensions in thickness $\Delta\varepsilon_d$ does not exceed $\pm 0,5 \%$

3.3.8 Tensile strength perpendicular to the faces

The tensile strength perpendicular to faces of the product is determined according to European standard EN 1607. The mean tensile strength of the 50 mm thick insulation material for a density of 281 kg/m³ is at least **189 kPa**.

Before testing the sample has been dried at a temperature of 40 °C to constant mass.

3.3.9 Point load

The behaviour under point load of the insulation material is determined according to European standard 12430. The mean deformation of the 25 mm thick insulation material at a point load of 1000 N is **0,246 mm**.

Before testing the sample has been dried at a temperature of 40 °C to constant mass.

3.3.10 Porosity

No performance assessed

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