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and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-17/0926
of 12 December 2017

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

"va-Q-vip F"

Product family
to which the construction product belongs

Vacuum insulation panels (VIP) with factory applied
protection layers

Manufacturer

va-Q-tec AG
Alfred-Nobel-Straße 33
97080 Würzburg
DEUTSCHLAND

Manufacturing plant

va-Q-tec AG
Karl-Ferdinand-Braun-Straße 7
97080 Würzburg
DEUTSCHLAND

This European Technical Assessment
contains

6 pages

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

EAD 040011-00-1201

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Specific part

1 Technical description of the product

This European Technical Assessment applies to the insulation boards of vacuum insulation panels with the designation "va-Q-vip F", hereafter referred to as thermal insulation boards.

The thermal insulation boards consist of a core of fumed silica powder and an opacifier, covered with a non-woven polyester fabric as dust cover, sealed under vacuum in a multi-layer metallized high-barrier foil made of triple metallized foil laminate.

The powder board is covered with the multi-layer metallized high-barrier foil with a longitudinal seam over the surface and two side seams. The sealing seams are positioned level to the vacuum insulation panel. The longitudinal seam in the middle of the surface is fixed with an adhesive tape on the thermal insulation board.

Alternatively a circumferential sealing seam can also be formed at the edges, which is folded down, and fixated using an adhesive tape fitting closely.

To control the internal pressure, a sensor disk consisting of a fabric and a metal disk is integrated into each thermal insulation panel.

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 are used for the thermal insulation of walls, floors and roofs in buildings.

The installation of the thermal insulation boards is carried out only by specialized companies that have adequate experience with the installation of the product and have been trained by the manufacturer.

The performance according to section 3 only applies if the undamaged thermal insulation board is installed according to the manufacturer's installation instructions (without drill and cut) and if it is protected from precipitation, wetting or weathering in built-in state and during transport, storage and installation.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the thermal insulation boards of at least 25 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 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 040011-00-1201 "Vacuum insulation panels (VIP) with factory applied protection layers" apply.

3.1 Mechanical resistance and stability (BWR 1)

Not applicable.

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3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire test acc. to EN ISO 11925-2:2011	Class E acc. to EN 13501-1:2007 + A1:2009

3.3 Hygiene, health and the environment (BWR 3)

Not applicable.

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)

Essential characteristic	Performance
Thermal conductivity test acc. to EN 12667:2001 acc. to a.m. EAD Nominal thickness: 10 mm to 19 mm Nominal thickness: 20 mm to 50 mm	Declared value of thermal conductivity ^{a)} $\lambda_D = 0.0085 \text{ W}/(\text{m} \cdot \text{K})$ $\lambda_D = 0.0076 \text{ W}/(\text{m} \cdot \text{K})$ with $\lambda_D = (\lambda_{90/90} + \Delta\lambda_a) \times F_{tb}$
Aging supplement Correction factor for the thermal bridge effect Thermal conductivity before aging and without consideration of the thermal bridge effect of edge area Nominal thickness: 10 mm to 19 mm Nominal thickness: 20 mm to 50 mm	$\Delta\lambda_a = 0.0015 \text{ W}/(\text{m} \cdot \text{K})$ $F_{tb} = 1.10$
Water vapour resistance	No performance assessed.
Nominal thickness test acc. to EN 823:2013 dimensional deviation	10 mm to 50 mm < 20 mm: - 1 mm / + 3 mm 20 to 50 mm: - 3 mm/ + 5 mm or ^{b)} + 5%
Nominal length test acc. to EN 822:2013 dimensional deviation	$\geq 400 \text{ mm}^{\text{c)}$ $\pm 2 \%$
Nominal width test acc. to EN 822:2013 dimensional deviation	$\geq 300 \text{ mm}^{\text{c)}$ $\pm 1.5 \%$

Essential characteristic	Performance
Squareness test acc. to EN 824:2013 dimensional deviation	$S_b \leq 5 \text{ mm/m}$
Flatness test acc. to EN 825:2013 dimensional deviation	$\leq 6 \text{ mm}$
Density test acc. to EN 1602:2013 Nominal thickness: 10 mm to 19 mm Nominal thickness: 20 mm to 50 mm	180 kg/m ³ to 250 kg/m ³ 180 kg/m ³ to 210 kg/m ³
Mass per unit area of the multilayer high barrier foil of the VIP	No performance assessed.
Oxygen permeability of the multilayer high barrier foil of the VIP	No performance assessed.
Compressive stress at 10 % deformation test acc. to EN 826:2013	$\sigma_{10\%} \geq 150 \text{ kPa}$
Dimensional stability under specified temperature and humidity test acc. to EN 1604:2013 (after 48 h storage at $(70 \pm 2)^\circ\text{C}$ and $(90 \pm 5) \%$ relative humidity) maximum relative changes in length, width and thickness direction	$\leq 1.0 \%$
Deformation under specified load and temperature test acc. to EN 1605:2013 with test condition 2 (40 kPa / 70 °C / 168 h) maximum relative change in thickness direction	$\leq 3.0 \%$
Tensile strength of the multilayer high barrier foil of the VIP	No performance assessed.
Internal pressure of the VIP	No performance assessed.
Tensile strength perpendicular to the faces of the thermal insulation board test acc. to EN 1607:2013	$\geq 30 \text{ kPa}$
Behaviour under point load	No performance assessed.
Shear strength of the thermal insulation board	No performance assessed.
a) Declared value of thermal conductivity, representative for at least 90 % of the production with a confidence level of 90 %, including aging and thermal bridge effect of edge area. Influences of fixing elements and supporting structures are not taken into account. b) Whichever gives the smallest numerical tolerance. c) Special formats are possible for the use in edge areas and corner areas.	

3.7 Sustainable use of natural resources (BWR 7)

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

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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 040011-00-1201 "Vacuum insulation panels (VIP) with factory applied protection layers" 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.

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beglaubigt:
Getzlaff