

1 cm vacuum insulation $\hat{=}$ 5-8 cm standard insulation

The Lambda value of 0,007 W/(mK)* and the U_p-value of up to 0,14 W/(m²K) speak for themselves.

*as rated value - initial value 0,0043 W/(mK)

VARIOTEC panels \Rightarrow safety, quality, variety and service

PRODUCT OVERVIEW

for exterior and interior insulation

**Balcony, terrace,
flat roof insulation**



**Façade insulation -
B1/B2 Fire protection façade with approval**



**Window soffit
Door or lintel encasing**



**Insulation for venetian
blinds/roller shutter boxes**



Ceiling/Internal wall insulation



**Surface laying of
unlaminated panels**



Internal floor insulation



Dormer and bay insulation



Post and beam façade



General information of VIP/QASA insulation

The vacuum insulation elements from VARIOTEC **constitute an elegant solution to any insulation problem**. On areas where the „conventional“ insulation material is too thick convinces the vacuum insulation with **lower building height**.

The sandwich construction works with an insulation core of vacuum insulation panels (VIP) consisting of evacuated pyrogenic silica, an enclosed mat of fibres and a multilayer high barrier film. The cover layers are adapted to the **external and internal application areas**.

Because of this composition exists nearly no heat conduction. Thus the **extremely thin elements achieve very good insulation values**.

A VIP insulation of 5 cm achieves an U-value of 0,14 W/(m²K) and equates to 25 cm of a conventional insulating material.

General technical approval

Allgemeine bauaufsichtliche Zulassung



Zulassungsbüro für Bauprodukte und Bauteile
Deutsches Institut für Bautechnik

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Deutsches Institut für Bautechnik

Ein vom Bund verliehenes Sondergenehmigungsrecht des öffentlichen Rechts
Mittelpunkt der DIBt, der IFA und der VDI

Datum: 16.11.2017 Geschäftsbereich: III 12-1.23.11-612/17

Zulassungsnummer:
Z-23.11-1779

Auftraggeber:
Variotec Sandwichelemente GmbH & Co. KG
Weißmarterstraße 3
92318 Neumarkt/Oberpfalz

Zulassungsgegenstand:
Vakuum-Wärmedämmplatten aus Kieselsäure
"QASA-D" und "QASA-N"

Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen.
Diese allgemeine bauaufsichtliche Zulassung umfasst zehn Seiten.



DIBt | Kolonnenstraße 30 B | D-10265 Berlin | Tel.: +49 30 70730-0 | Fax: +49 30 70730-333 | E-Mail: dibt@dibt.de | www.dibt.de

European technical approval ETA-13/0493

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English translation prepared by DIBt - Original version in German language

Manufacturer and Trade name	QASA	
Zulassungsbüro	VARIOTEC GmbH & Co. KG Weißmarterstraße 3 92318 Neumarkt/Oberpfalz GERMANY	
Zulassungsbüro	Variotec Sandwichelemente GmbH & Co. KG Weißmarterstraße 3 92318 Neumarkt/Oberpfalz GERMANY	
Issue date	7 June 2012	
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ETA Europäische Organisation für Technische Zulassungen
European Organization for Technical Approvals

Approval from a VIP core thickness of 20 mm

Technical information of VIP/QASA insulation

Lambda value	0,007 W/(mK) (as rated value) / 0,0063 W/(mK) acc. to European technical approval ETA-13/0493
VIP core thicknesses	10, 15, 20, 25, 30, 35, 40, 45, 50
Edges	All edges are protected with adhesive tape.
Adjustable edges	XPS/PUR insulation stripes to cut and fit the elements in the edge area, width of the insulation stripes subject to agreement
Supporting core density	190 - 220 kg/m ³
Supporting core material	Pyrogenic silica with supporting fibres and infrared opacifier
Specific heat capacity	C = approx. 1kJ / (kg K)
Fire behavior	Normally inflammable (building material class DIN 4102-B2, flammable material class B1 deliverable with technical approval)
Compressive stress	At 10% shortening: $\sigma_{10\%} = 190$ kPa
Internal pressure	At the delivery of the panel < 7 mbar
Calculated pressure increase	Approx. 1 mbar / a
Core tolerances	Thickness +1 / -2 mm, length sizes ± 2 mm
Single element test	Each vacuum insulation element will be checked twice with a quality test

U_p VIP core: (plus covering = total installation thickness)

Calculated values accord. to rated value 0,007 W/(mK)¹

Technical approval number of the DIBt **Z-23.11-1779** national, general technical approval (AbZ).

The additional heat losses caused by thermal bridges in the edge area of the VIP panels are taken into consideration.

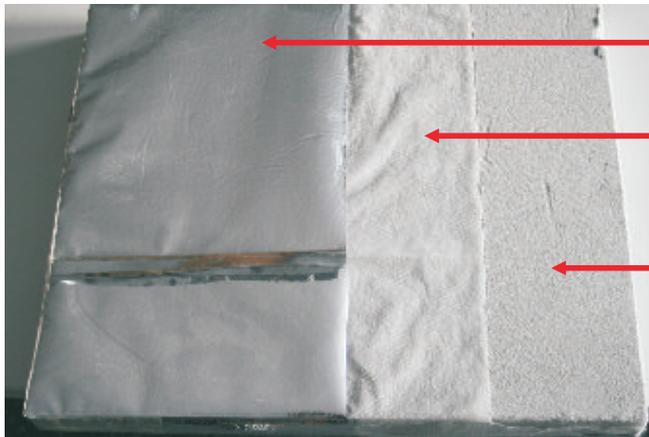
- * 10 mm VIP core: $U_p = 0,70$ W/(m²K)
- * 15 mm VIP core: $U_p = 0,47$ W/(m²K)
- 20 mm VIP core: $U_p = 0,35$ W/(m²K)
- 25 mm VIP core: $U_p = 0,28$ W/(m²K)
- 30 mm VIP core: $U_p = 0,23$ W/(m²K)
- 35 mm VIP core: $U_p = 0,20$ W/(m²K)
- 40 mm VIP core: $U_p = 0,18$ W/(m²K)
- 50 mm VIP core: $U_p = 0,14$ W/(m²K)

* General technical approval from
a VIP core thickness of 20 mm

¹ Rated value 0,007 W/(m²K) - initial value 0,0043 W/(m²K)



Construction of a vacuum insulation panel: What is inside?



High-barrier film

Fleece cover
 (dust protection for
 the sealed seam)

Support core consisting of pyro-
 generic silica with
 neutral additives

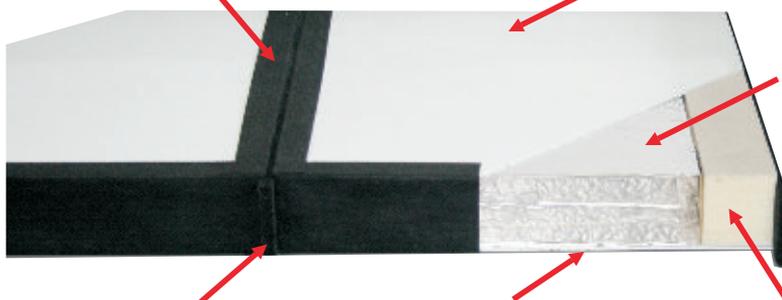


**Unlaminated panel VT-VIP blank (uncoated)
 with technical approval Z. 23.11.1779**

Construction of a VIP element laminated on both sides

adhesive tape on the panel joint above – humidity-resistant,
 open to diffusion and UV durable

covering above e. g.
 GFK, rubber, XPS



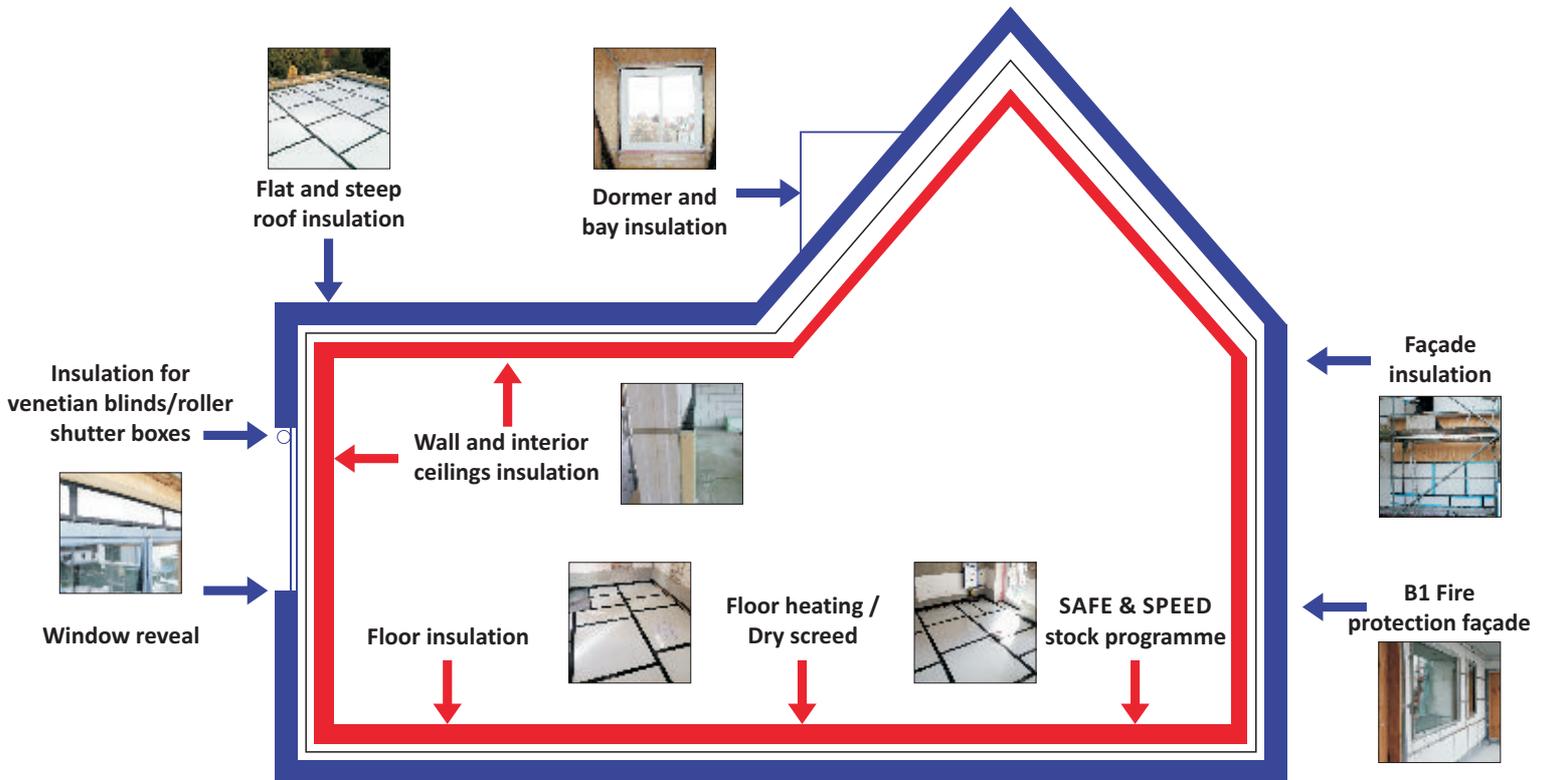
VIP (vacuum insulation panel)

compression tape for sealing
 of the panel and wall joints

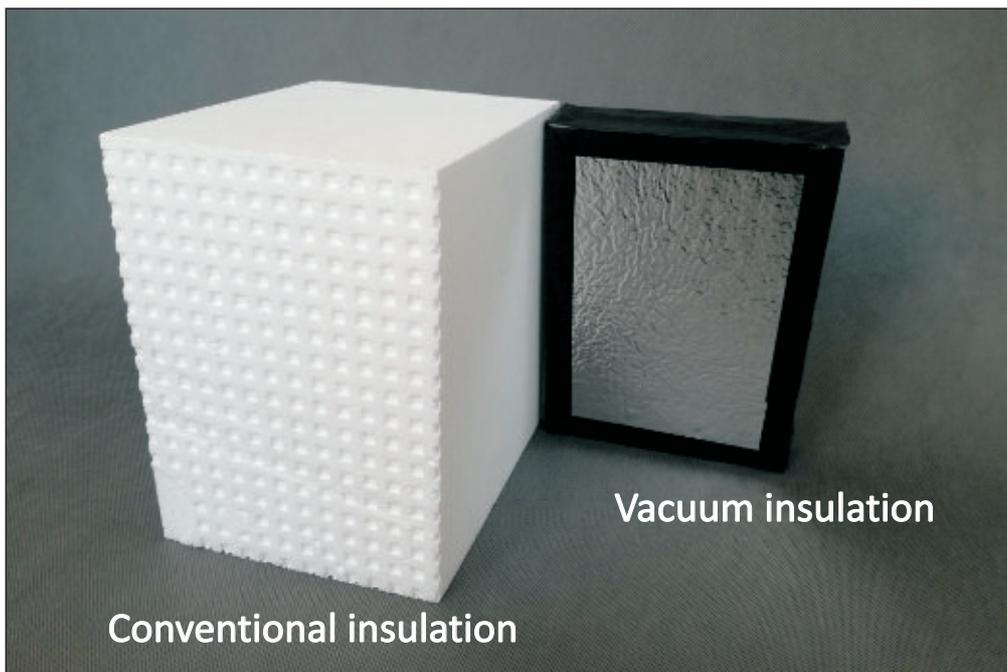
covering below e. g.
 GFK, rubber, XPS

Cutting area with
 PUR/XPS edge to adapt

Operational areas of the VACUUM INSULATION



Comparison of the insulation thickness of a VIP with conventional insulation

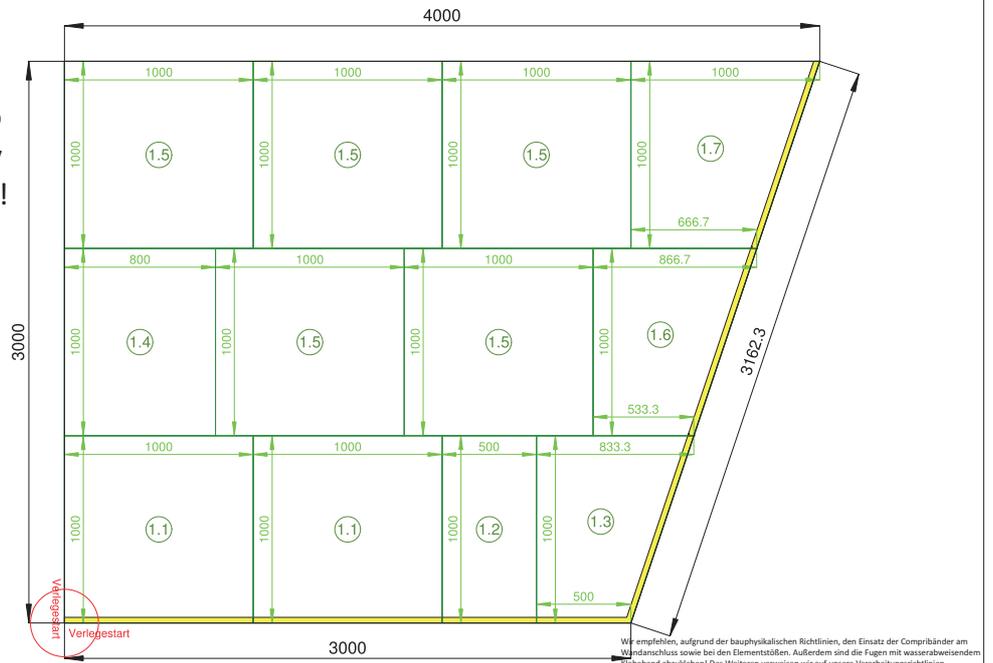


→ **Low construction heights** ↔ **high insulation effect** ←

Layout drawings with numeration free of charge

Free layout drawing with numbering!

Delivered panels are also numbered, consequently an easy laying is possible!



VT-I-B-GFK-XPS-5 für Nassestrich

1,5 mm GFK
20 mm VIP
5 mm XPS

Kantenschutz:

4-seitig reißfestes Klebeband

2 Rollen „Compriband Wandanschluss“ - Wandanschluss
2 Rollen „Compriband Elementstoß (innen Elemente)“ - innen Elemente

Flächen:

Gesamt 13,04 qm (ohne Mindestberechnungsfläche)
VIP 12,83 qm
Schaumanteil 0,017

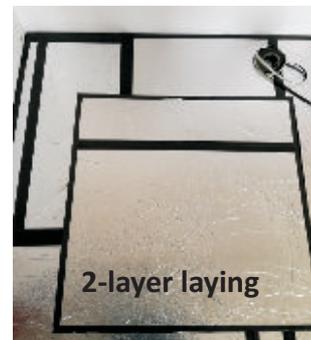
1000 x 500 mm

Musterverlegeplan

COM: 000000

Verlegeplan 01 (1)

gez. 00.00.2018 | X. Sutor



→ **Low construction heights** ↔ **high insulation effect** ←

Product system overview VACUUM INSULATION

VIP core thickness / vacuum insulation **Lambda-value = 0,007 W/(mK):**

***10 mm** VIP core: $U_p = 0,70 \text{ W}/(\text{m}^2\text{K})$ **30 mm** VIP core: $U_p = 0,23 \text{ W}/(\text{m}^2\text{K})$

***15 mm** VIP core: $U_p = 0,47 \text{ W}/(\text{m}^2\text{K})$ **35 mm** VIP core: $U_p = 0,20 \text{ W}/(\text{m}^2\text{K})$

20 mm VIP core: $U_p = 0,35 \text{ W}/(\text{m}^2\text{K})$ **40 mm** VIP core: $U_p = 0,18 \text{ W}/(\text{m}^2\text{K})$

25 mm VIP core: $U_p = 0,28 \text{ W}/(\text{m}^2\text{K})$ **50 mm** VIP core: $U_p = 0,14 \text{ W}/(\text{m}^2\text{K})$

* General technical approval from a VIP core thickness of 20 mm



Exterior and interior insulation

Product type

Construction

Panel images

VT-VIP blank (QASA-N)*

Versatile refrigeration and construction industry
e. g. flat roof, floor insulation

Unlaminated vacuum insulation



External insulation

Flat roof insulation

Product type

Balcony, terrace and flat roof

Construction

Panel images

VT-A-DA-2 R-GGR*

Standard variant with rubber granulate on both sides

3 mm R-rubber (rubber granulate)
Vacuum insulation / VIP-core
3 mm R-rubber (rubber granulate)



VT-A-DA-GFK/GGR

Combination robust step, resistant surface, below compensation of small unevennesses

1,5 mm GFK (fiberglass reinforced plastic)
Vacuum insulation / VIP-core
3 mm R-rubber (rubber granulate)



VT-A-DA-2 GFK

Robust, impact-resistant design with protective layer GFK

1,5 mm GFK (fiberglass reinforced plastic)
Vacuum insulation / VIP-core
1,5 mm GFK (fiberglass reinforced plastic)



VT-A-DA-2 XPS*

XPS (Styrodur) design for compensating small unevennesses

5 mm XPS
Vacuum insulation / VIP-core
5 mm XPS



VT-A-Trittschall (impact sound)

Thermal insulation with impact sound reduction

1,5 mm GFK (fiberglass reinforced plastic)
Vacuum insulation / VIP-core
8/4 mm rubber type outside

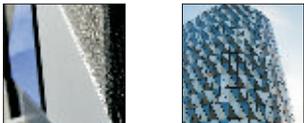


* Also available as **SAFE & SPPEd stock programme** ... when it has to go fast!

Further **information as well as our request and order form** can be found at www.variotec.de

We are happy to respond to **your individual wishes**, with our designs, **just call us.**

Product system overview VACUUM INSULATION

Product type	Construction	Panel images
<p>VT-A-DA-2 PP-Vlies (mat of fibres) At minimal height on both sides PP fleece (hydrophobic)</p>	<p>0,5 mm PP fleece grey Vacuum insulation / VIP-core 0,5 mm PP fleece grey</p>	
<p>External insulation Façade insulation</p>		
Product type	Construction	Panel images
<p>VT-A-B1 (QASA Firetherm) Insulation system for requirements Fire protection B1 (VHF) System thickness 31-56 mm</p>	<p>Construction acc. to approval 3 mm A1 top coat 25-50 mm vacuum insulation / VIP-core 3 mm A1 top coat</p>	
<p>VT-A-VHF Insulating system for ventilated curtain façade Fire protection B2 (VHF)</p>	<p>1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 5 mm XPS</p>	
<p>VT-A-HYDRO Vacuum insulation façade with plaster base board fire protection B2 incl. fastening system</p>	<p>15 mm hydro panel HD Vacuum insulation / VIP-core 10 mm XPS</p>	
<p>VT-A-2-ALU/MAX Post and beam Façade insulation, filling</p>	<p>2/3 mm aluminum or Max Exterior Vacuum insulation / VIP-core 2/3 mm aluminum or Max Exterior</p>	
<p>Insulation for venetian blinds, roller shutter boxes and soffits</p>		
Product type	Construction	Panel images
<p>VT-A-ROLL Roller shutters boxes and venetian blinds</p>	<p>1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 5 mm XPS</p>	
<p>VT-A-LAIB Insulation for window and door soffits</p>	<p>5 mm XPS (Styrodur) Vacuum insulation / VIP-core 5 mm XPS (Styrodur)</p>	
<p>Dormer and bay insulation</p>		
Product type	Construction	Panel images
<p>VT-A-GAUB Dormer and bay insulation without sight requirement</p>	<p>3 mm plywood* Vacuum insulation / VIP-core 3 mm plywood* *acc. to the manufacturer's specification as standard</p>	

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Product system overview VACUUM INSULATION

Fillings

Product type	Construction	Panel images
VT-VIP-Füllung (filling) Fillings of all type	Plywood or other materials Vacuum insulation / VIP-core Plywood or other materials	 

Internal insulation

Internal floor insulation

Product type	Construction	Panel images
VT-I-B-GFK-XPS-5 for wet and wet heating screed	1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 5 mm XPS (Styrodur)	 
VT-I-B-GFK-XPS-10 for dry screed and floor heating system	1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 10 mm XPS (Styrodur)	 
VT-I-B-2 XPS-5 XPS (Styrodur) design to compensate small unevennesses	5 mm XPS (Styrodur) Vacuum insulation / VIP-core 5 mm XPS (Styrodur)	 
VT-I-Trittschall (impact sound) Thermal insulation and impact sound reduction	1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 3 mm rubber type inside	 
VT-I-B-OSB (MFP) OSB/MFP Top and bottom XPS (Styrodur)	10 / 22 mm MFP/OSB Vacuum insulation / VIP-core 10 mm XPS (Styrodur)	 

Internal wall and ceiling insulation

Product type	Construction	Panel images
VT-I-Wand/Decke (wall/ceiling) Wall and ceiling insulation without sight requirement	1,5 mm GFK (fiberglass reinforced plastic) Vacuum insulation / VIP-core 5 mm XPS (Styrodur)	 

Technical drawings (details) as well as tender texts can be found in our download area
<http://www.variotec.de/start/downloads/vip-qasa-vakuumdaemmung>

Further information as well as our request and order form can be found at www.variotec.de
 We are happy to respond to your individual wishes, with our designs, just call us.

Information service: VIP/QASA VACUUM INSULATION

Please send us the following documentation regarding vacuum insulation to:

Name, first name:

Company:

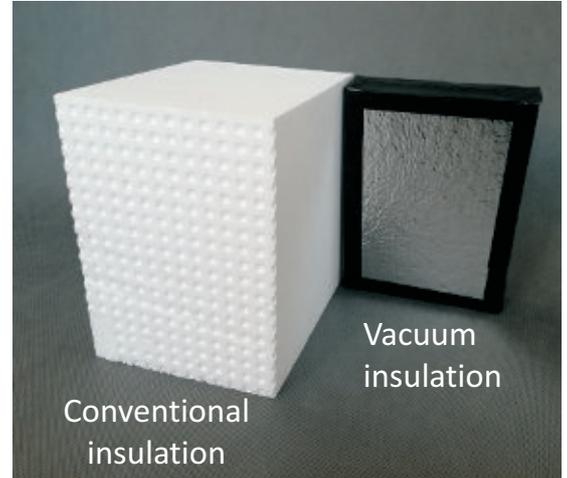
Function:

Street:

Post code, place:

Phone:

E-mail:



The difference ⇨ Factor 1:5

Please tick and send by e-mail to: qasa@variotech.de or by fax to: +49 9181 6946-71

- Price overview „Einfach-Sicher-Dämmen“ vacuum insulation Test certificates
- Product overview SAFE & SPEED „Stock programme“
- Data sheet type: _____
- Texts for invitation to tender and details type: _____
- Hand sample Element Type: _____
- Consultation appointment on the ground or in the premises of VARIOTEC

Send documentation by:

- e-mail: _____
- fax: _____ post recall

SAFE & SPEED
Vacuum insulation

Stock programme vacuum insulation

Only in 8 days on your site!

Prefabricated VIP elements in 20 mm and 30 mm on stock

3 designs as standard sizes available at short notice! For external and internal insulation

Lambda value 0.027 W/(mK) as rated value (initial value: 0.040 W/(mK))

Safe & Speed VIP Blank (Lohnfertigkeit) | Safe & Speed B-Gummi (Lohnfert.) | Safe & Speed KPS (Lohnfert.)

Operational areas envisaged others as: flat roof, balcony and terrace insulation, interior floor insulation, ceiling, industry and many more

send form

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QASA/VIP Inquiries and orders
Ms. Schmid: +49 9181 6946-10
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Free of charge layout drawing



Technical drawings (details) as well as tender texts can be found in our download area
<http://www.variotech.de/start/downloads/vip-qasa-vakuumdämmung>

References



KI Aula Stockholm,
Architect Gert Winghards



Installed QASA B1 area in Munich,
Ackermannbogen Architect Werle



Solon AG Adlershof
Architect Schulte-Frohlinde

VARIOTEC GmbH & Co.KG WERK 2 - Production of vacuum insulation

